



Animal Feed Consumption

February 2025



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Legal Disclaimer

Decision Innovation Solutions, LLC (“DIS”) has prepared this analysis (the “Project”) for review and use. The Project consists of estimations of animal feed consumption by species and estimations of total feed consumption of selected feed ingredients in the United States.

While DIS has made every attempt to obtain the most accurate data and include the most critical factors in preparing the Project, DIS makes no representation as to the accuracy or completeness of the data and factors used or in the interpretation of such data and factors included in the Project. The responsibility for the decisions made by you based on the Project, and the risk resulting from such decisions remains solely with you; therefore, you should review and use the Project with that in mind.

While the Project does include certain estimates and possible explanations for feed ingredient usage, it cannot be ascertained with certainty the extent to which these estimates are entirely accurate. The following factors, among others, may prevent complete accuracy of the estimation of feed ingredient usage by species and explanations for the same:

Inadvertent errors and omissions related to data collection, data summarization, and visual display of data.

Table 1. Acronyms

Acronym	Description
BSE	Bovine Spongiform Encephalopathy
DDGs	Dried Distillers Grains
DIS	Decision Innovation Solutions
ERS	Economic Research Service
FAO	Food and Agriculture Organization
FCR	Feed Conversion Ratios
FDA	Food and Drug Administration
IFEEDER	Institute for Feed Education and Research
NARA	North American Renderers Association
NASS	National Agricultural Statistics Service
NRC	National Research Council
RCO	Ration Cost Optimization model
SME	Subject Matter Expert
USDA	U.S. Department of Agriculture
WASDE	World Agricultural Supply and Demand Estimates

1 Executive Summary

A major component of this analysis is an update of work originally completed for the Institute for Feed Education and Research (IFEEDER) in 2020 with updated data from 2023 datasets and the 2022 Census of Agriculture. This effort, organized by IFEEDER in collaboration with the American Feed Industry Association (AFIA) and NARA, estimates the consumption of feed ingredients for most animal species, including broilers, layers, turkeys, hogs, dairy cattle, beef cattle, sheep and goats, horses, and aquaculture. Updated methodologies and refreshed data from 2023 U.S. Department of Agriculture datasets and the 2022 Census of Agriculture were used in conjunction with a blend of methodology originally used in 2020 for aquaculture. With the additional methods developed in the interim and data from 2023 USDA datasets, DIS has updated and enhanced animal production and ingredient coverage and accuracy compared to the estimates provided in the 2020 report. See the Appendix section 6.5 for specific additions to the 2023 dataset.

1.1 2023 Feed Consumption Summary

Using the modified methodology (Multi-Species Ration Cost Optimization (RCO) model), DIS estimated the quantities of animal feed ingredients by species for the year 2023. DIS found that approximately 283.6 million tons¹ of feed, and 267.4 million tons of harvested forages and roughages, were fed to major species of livestock, poultry and aquaculture in 2023. In descending order of total quantity fed (without harvested forages and roughages) by species these amounts were:

1. Beef Cattle: 76.7 million tons
2. Broilers: 61.5 million tons
3. Hogs: 60.9 million tons
4. Dairy Cattle: 48.7 million tons
5. Egg-Layers: 17.7 million tons
6. Turkeys: 10.9 million tons
7. Horses: 5.3 million tons
8. Sheep and Goats: 1.2 million tons²
9. Aquaculture: 615,800 tons

By weight, the top five feed ingredients consumed by the 10 species in 2023 were:

1. Corn: 159.4 million tons
2. Soybean Meal: 35.4 million tons
3. Corn Distiller's Dried Grains (Corn DDGs): 32.6 million tons
4. Wheat Middlings: 5.6 million tons
5. Canola Meal: 5.2 million tons

Five states topped the list in tons of animal feed ingredients fed to animals in 2023:

1. Iowa: 29.1 million tons, primarily to hogs, beef cattle and egg-layers
2. Texas: 24.4 million tons, primarily to beef cattle, dairy cattle and broilers

¹ All references to "tons" in this report are U.S. short tons (2,000 lbs.).

² There were 0.96 million tons of feed fed to sheep and 0.28 million tons of feed fed to goats.

3. Nebraska: 17.3 million tons, primarily to beef cattle and hogs
4. North Carolina: 15.5 million tons, primarily to hogs, broilers and turkeys
5. Kansas: 15.3 million tons, primarily to beef cattle, hogs and dairy cattle

Additionally, DIS estimated harvested forages and roughages (e.g., corn silage, alfalfa hay, other hay, legume silage, corn stalks, sorghum silage, and wheat straw) consumption in this 2023 study, which was 267.4 million tons, fed to dairy cattle, beef cattle, sheep and goats and horses. By weight, the top five states of harvested forage consumption in 2023 were:

1. California: 29.1 million tons
2. Texas: 26.9 million tons
3. Wisconsin: 20.4 million tons
4. Nebraska: 18.6 million tons
5. Kansas: 17.6 million tons

1.2 Circular versus Non-Circular Ingredients

Circular feed ingredients are understood as the ingredients used in animal feed that are either coproducts or by-products from the human food industry or other industrial processes. Categorization of circular versus non-circular feed ingredients was referenced from the draft report by the Food and Agricultural Organization of the United Nations, "[Guidelines on the role of livestock in circular bioeconomy systems.](#)"

While feed consumption *without* harvest forages and roughages increased by 3.1% from 2019 to 2023 (from 275.1 million tons in 2019 to 283.6 million tons in 2023), feed consumption *with* harvest forages and roughages fell by 2.1%³ from 2019 to 2023 (from 562.7 million tons in 2019 to 550.9 million tons in 2023).

Circular ingredient consumption has decreased by 3.7% (from 110.1 million tons in 2019 to 106.0 million tons in 2023); while non-circular ingredient consumption has increased by 7.6% (from 165.0 million tons in 2019 to 177.6 million tons in 2023). Circular ingredients comprised 37% of total feed consumption *without* harvest forages and roughages and non-circular ingredients made up 63% of the total feed consumption *without* harvest forages and roughages in 2023. In 2019, circular ingredients were about 40% of the total feed consumption *without* harvest forages and roughages, and non-circular ingredients were about 60% of the total feed consumption *without* harvest forages and roughages.

The composition of circular versus non-circular ingredient utilization varies by species, in general. For monogastric animal diets (i.e., poultry and hogs), lower volumes of circular ingredients were used in 2023 compared to 2019; for ruminant animal diets (dairy cattle, beef cattle, and sheep and goats), more volumes of circular ingredients were used in 2023 than in 2019.

³ All feed consumption comparisons between 2023 versus 2019 exclude pet food estimates. To allow for comparison, the 2019 total feed consumption was also adjusted to exclude pet food section.

Year	Circular Ingredient Aggregation	Broilers	Layers	Turkeys	Hogs	Dairy Cattle	Beef Cattle	Horses	Sheep and Goats	Aquaculture	Total	
2023	Circular Ingredient ¹ (Tons)	22,260,195	5,743,849	3,638,544	17,348,414	24,600,362	27,177,147	4,054,722	649,714	504,093	105,977,041	
	Circular Ingredient (% of Species Total without Harvest Forages)	36%	32%	33%	28%	50%	35%	77%	52%	82%	37%	
	Non-Circular Ingredient ¹ (Tons)	39,241,328	11,934,962	7,281,627	43,532,485	24,140,389	49,552,624	1,204,564	595,923	96,490	177,580,392	
	Non-Circular Ingredient (% of Species Total without Harvest Forages)	64%	68%	67%	72%	50%	65%	23%	48%	16%	63%	
	Unique Ingredients from Aquaculture (Tons)										15,203	15,203
	U.S. Total without harvest forages (Tons)	61,501,523	17,678,811	10,920,171	60,880,899	48,740,751	76,729,771	5,259,287	1,245,637	615,787	283,572,636	
	U.S. Total (Tons)	61,501,523	17,678,811	10,920,171	60,880,899	182,980,995	207,832,115	6,371,597	2,157,116	615,787	550,939,013	
2019	Circular Ingredient ¹ (Tons)	24,066,361	6,152,730	4,738,238	21,649,631	24,254,946	23,397,410	5,322,441	23,495	476,352	110,081,604	
	Circular Ingredient (% of Species Total without Harvest Forages)	40%	32%	45%	35%	49%	36%	69%	17%	83%	40%	
	Non-Circular Ingredient ¹ (Tons)	36,724,326	13,079,649	5,836,004	40,194,182	25,574,079	41,083,160	2,335,748	115,288	94,192	165,036,629	
	Non-Circular Ingredient (% of Species Total without Harvest Forages)	60%	68%	55%	65%	51%	64%	31%	83%	17%	60%	
	Unique Ingredients from Aquaculture (Tons)										-	-
	U.S. Total without harvest forages (Tons)	60,790,688	19,232,380	10,574,242	61,843,813	49,829,024	64,480,569	7,658,189	138,783	570,545	275,118,233	
	U.S. Total (Tons)	60,790,688	19,232,380	10,574,242	61,843,813	206,918,734	195,018,422	7,658,189	138,783	570,545	562,745,795	

¹ Circular and Non-circular ingredients in this table do NOT include harvest forages and roughages (i.e., corn silage, alfalfa hay, other hay, legume silage, corn stalks, sorghum silage, and wheat straw)

Notes:

Compared to the 2020 report (2019 diets), 23 feed ingredients were added into 2023 feed consumption study. It may not be the ration switching, but these 23 feed ingredients were not estimated in the 2019 diets. 100% of added harvest forages and roughages (37.5 million short tons) went to dairy and beef cattle diets. More than 60% of added feed ingredients went to dairy and beef cattle diets. Out of the 10.3 million short tons from the added feed ingredients, more than 45% was due to molasses and sugar beet pulp.

Also, more animal sub-species were involved in the 2023 feed consumption study compared to 2019, for example, only cattle on feed and beef calves were involved in the 2019 feed consumption data, while in the 2023 feed consumption data, all sub-species were included, i.e. bulls, cows, calves, calf crop, backgrounding cattle, replacement heifers, and cattle on feed with appropriate adjustments for death loss, slaughter, imports and exports of live cattle.

2 Introduction

2.1 Historical Production of Farm Commodities

Corn, soybeans, alfalfa hay, DDGs, oats, barley, sorghum and wheat are important crops used in animal diets. The trends within these crop markets provide insights into animal ration pricing as well as the variety of inputs in animal diets. Furthermore, these markets are influenced by several external issues ranging from variable harvests to government policy changes and changes in international trade policies. DIS used data from the USDA National Agricultural Statistics Service (NASS), Economic Research Service (ERS) and the World Agricultural Supply and Demand Estimates (WASDE) to provide historical background to the commodity markets in this section.

Ethanol production increased sharply in the early to mid-2000s due to technological advances (e.g., dry milling) and policy changes (e.g., renewable fuels standard). Increased ethanol production fueled an increase in DDG production. Although early production of DDGs was fraught with inconsistency between and within producers (i.e., ethanol plants), great improvements over the years have been made as ethanol production margins have come down, incentivizing investment in quality improvements of DDGs. Figure 1 through Figure 7 summarize the historical production of primary feed ingredients fed to U.S. animal agriculture.

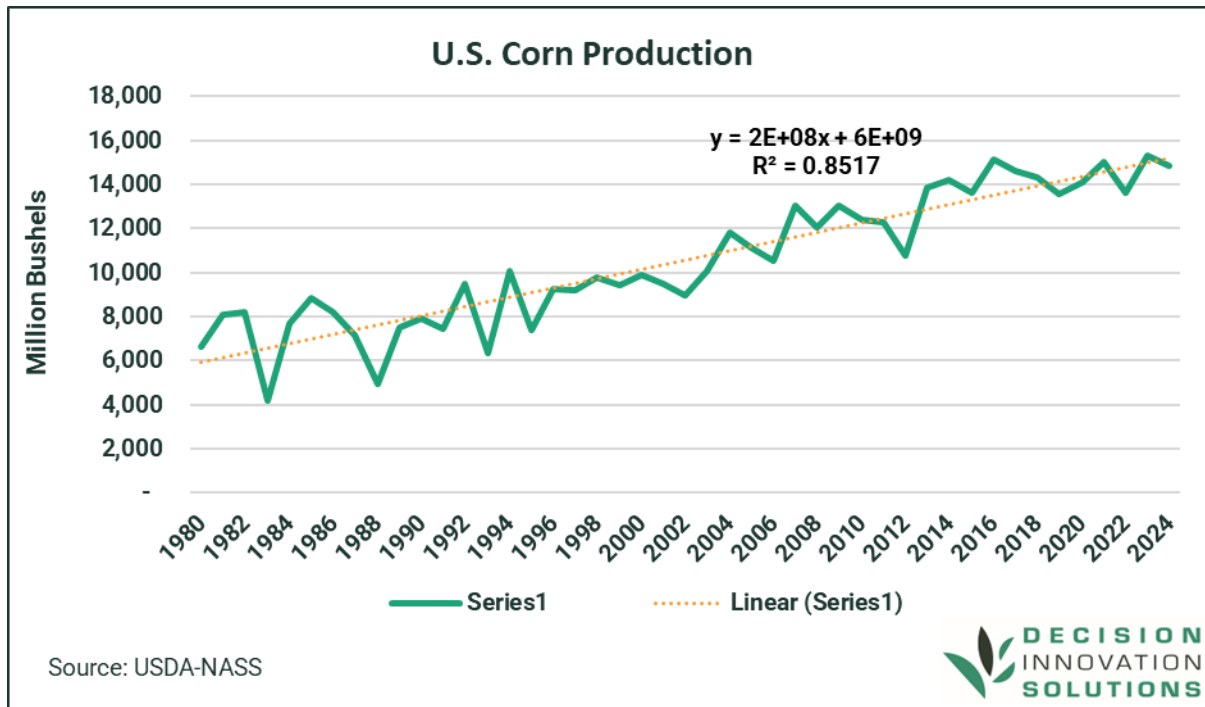


Figure 1. U.S. Corn Production

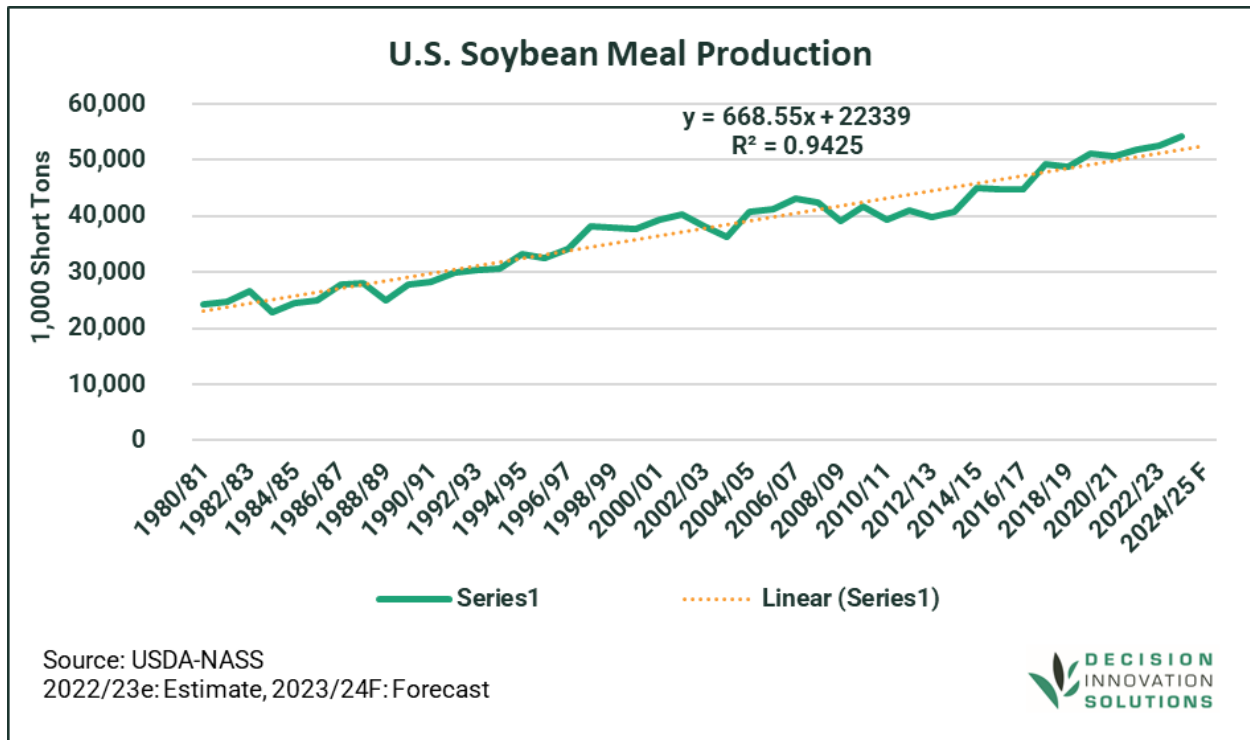


Figure 2. U.S. Soybean Meal Production

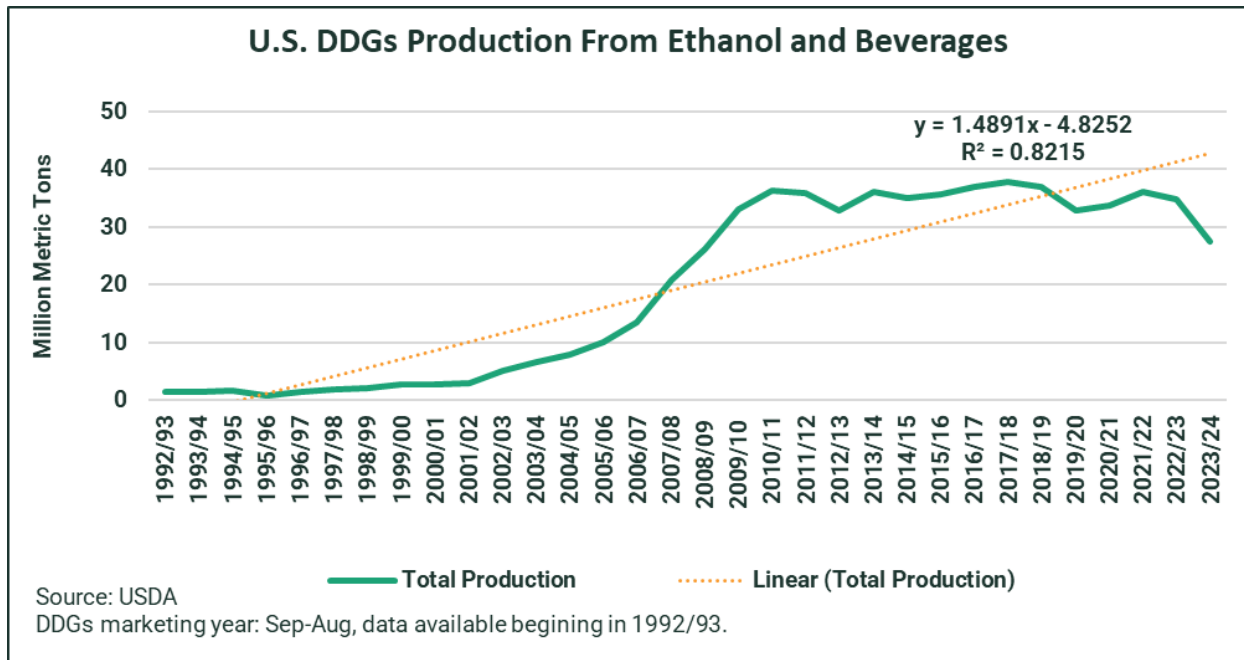


Figure 3. U.S. DDGs Production from Ethanol and Beverages (MY 1992/93-MY 2022/23)

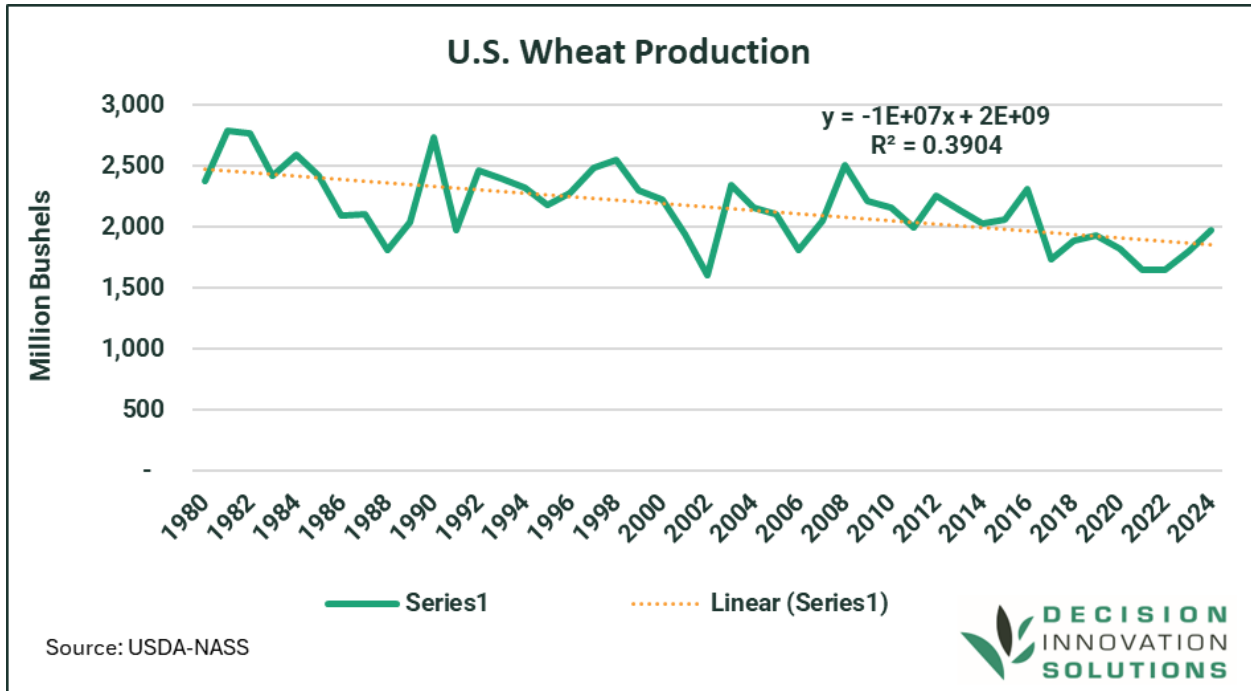


Figure 4. U.S. Wheat Production

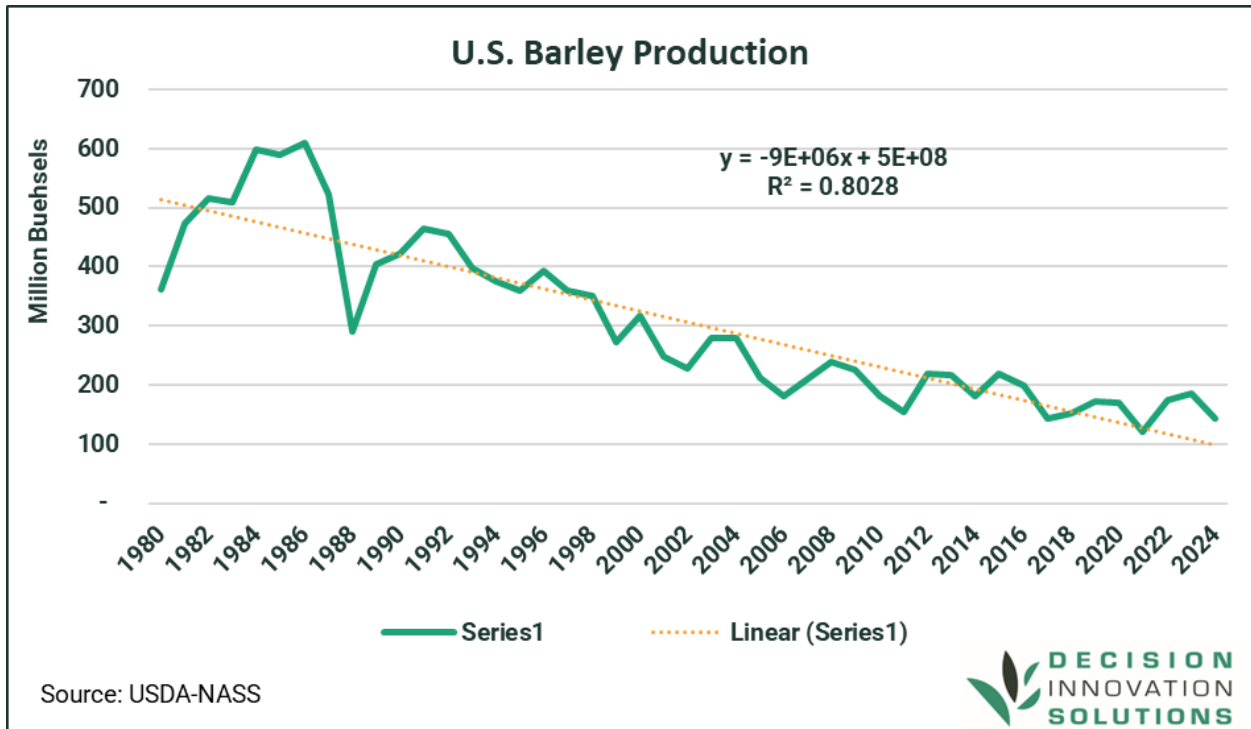


Figure 5. U.S. Barley Production

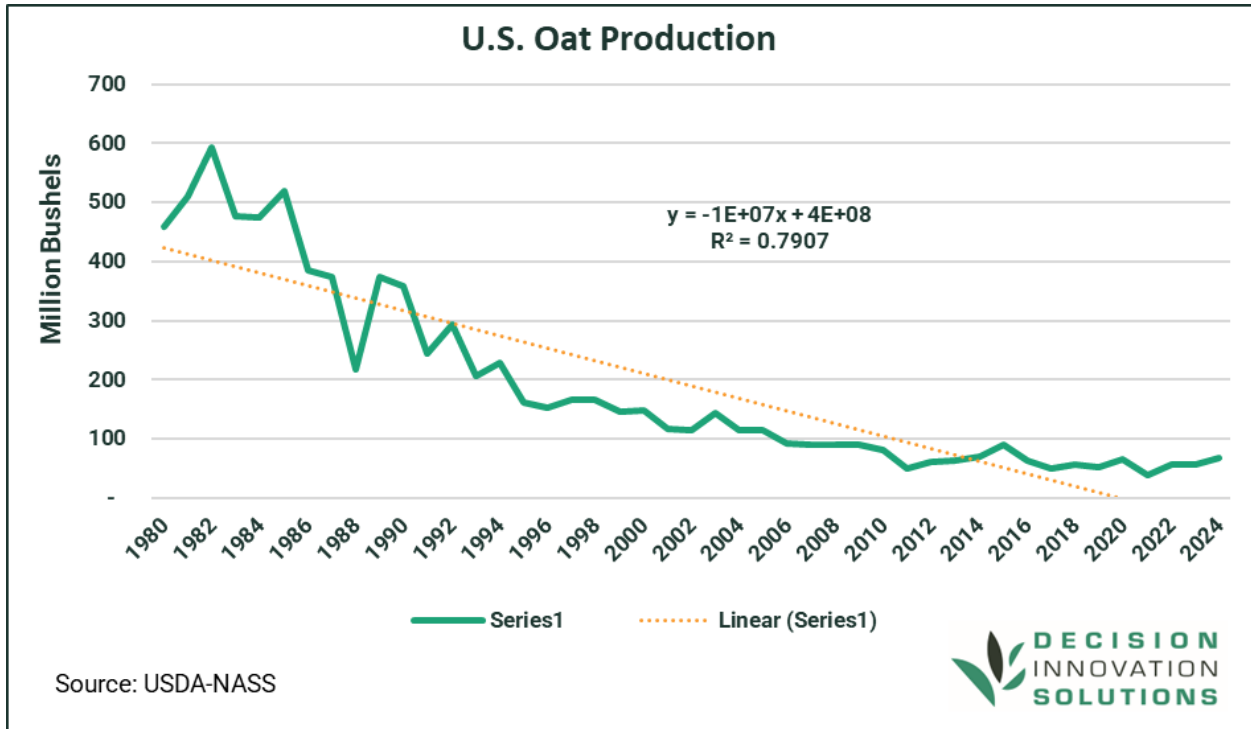


Figure 6. U.S. Oat Production

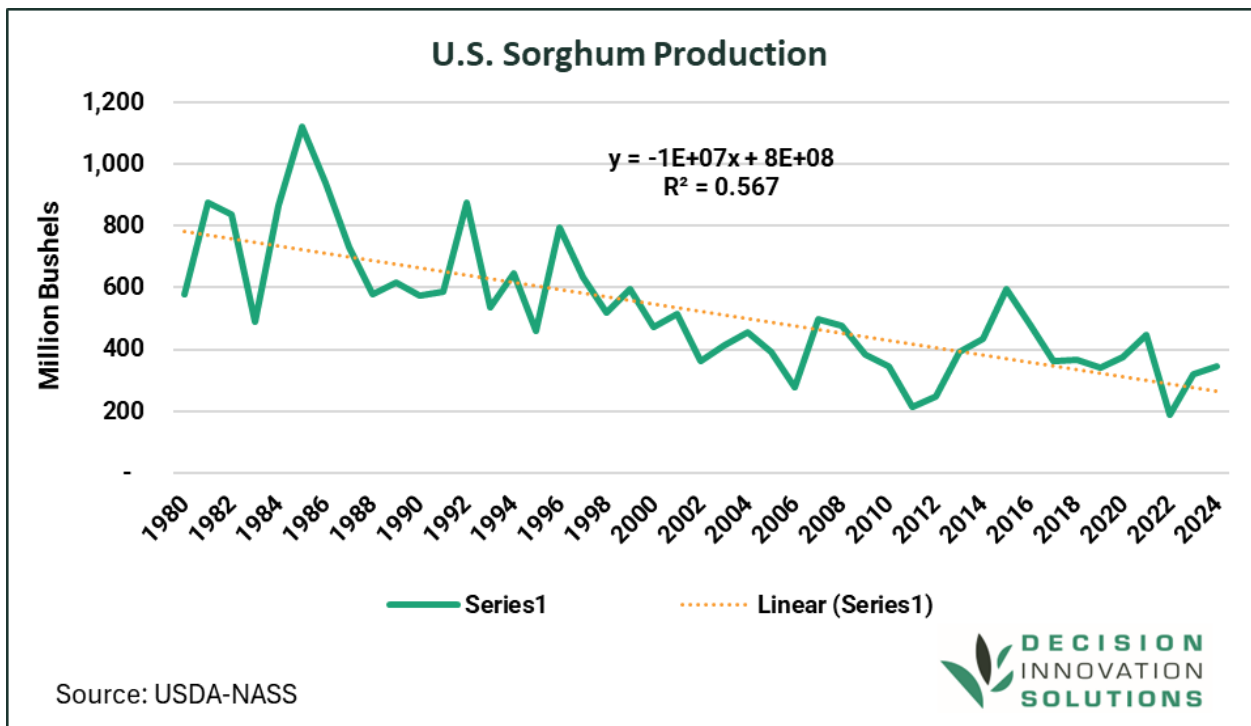


Figure 7. U.S. Sorghum Production

2.2 Grains and Oilseed Meals

Corn is the highest consumed grain in animal diets. The quantity of corn used as a feed ingredient depends on the crop’s supply and price. The supply and price of corn is greatly affected by advances in technology (both genetic and mechanical) as well as farm policy. Since the beginning of the 1990s, there has been a steady decrease in the amount of grains other than corn (i.e., grain sorghum, barley, oats and wheat) used in feeds. This is represented by the black dotted line in Figure 8, which shows corn as a percentage of total animal consumption of grains increasing over time.

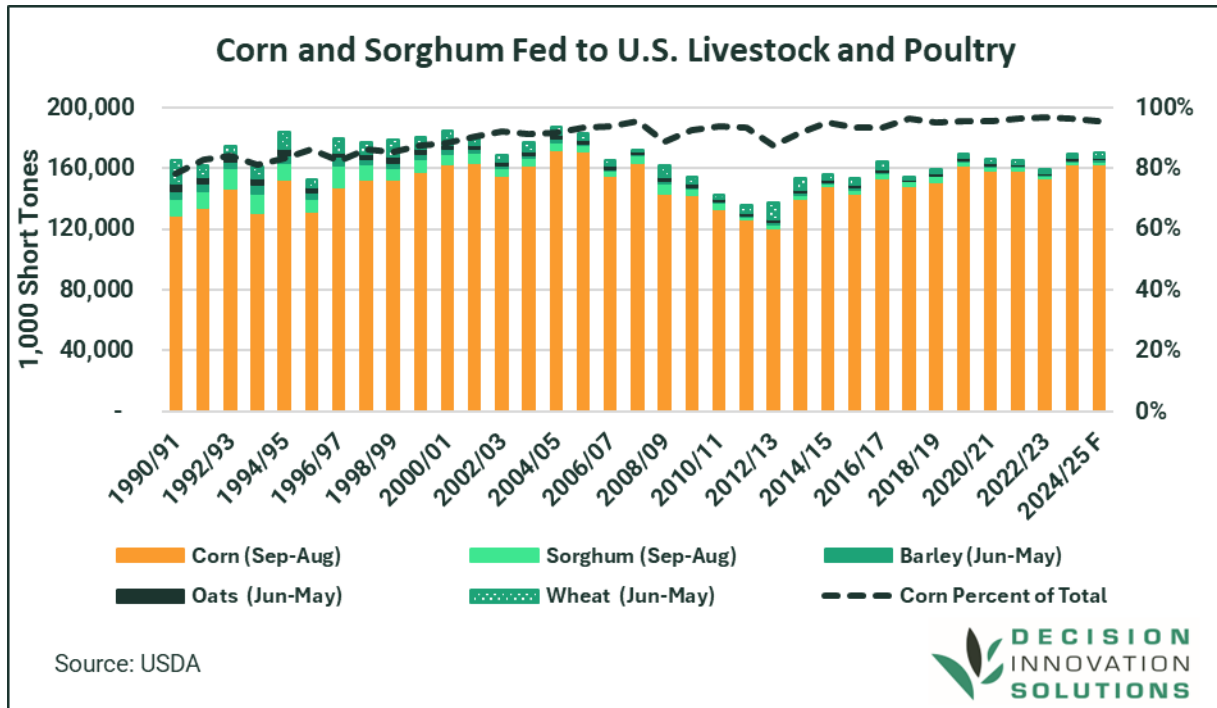


Figure 8. Grains Fed to U.S. Livestock and Poultry

There have been notable increases in the amount of total oilseed meals fed to livestock and poultry (see Figure 9). Oilseed meals have increased in total consumption over the last nearly 33 years, but the dominance of soybean meal in animal diets in relation to other oilseed meals has decreased. Much of the increase in oilseed supply for feed is due to increases in corn production and the need for a rotation crop. Furthermore, advancing genetics and processing technology have increased, making a stronger market for oilseeds. Additionally, support of minor oilseed crops was boosted by the Food, Agriculture, Conservation and Trade Act of 1990, which decreased the risks of planting less popular oilseed crops, making them more attractive to farmers.

Other oilseed meals, such as canola meal (or rapeseed meal), have gradually taken up more of total consumption since 1990. The share of soybean meal consumption of total meal consumption⁴ has decreased slightly from 90% (1990/91) to 86% (2022/23). Canola meal consumption has increased 4.88 short tons between 1990/91 and 2022/23. Soybean meal consumption has also increased 15.75 million

⁴ Includes soybean meal, canola meal, cottonseed meal, peanut meal, sunflower meal, and linseed meal.

tons during the same period. This is due to the increased availability (thus decreased price) as well as the increasing awareness of the protein value of oilseed meals as a feed additive, primarily for beef cattle, dairy cows and pigs (USDA ERS, Ash).

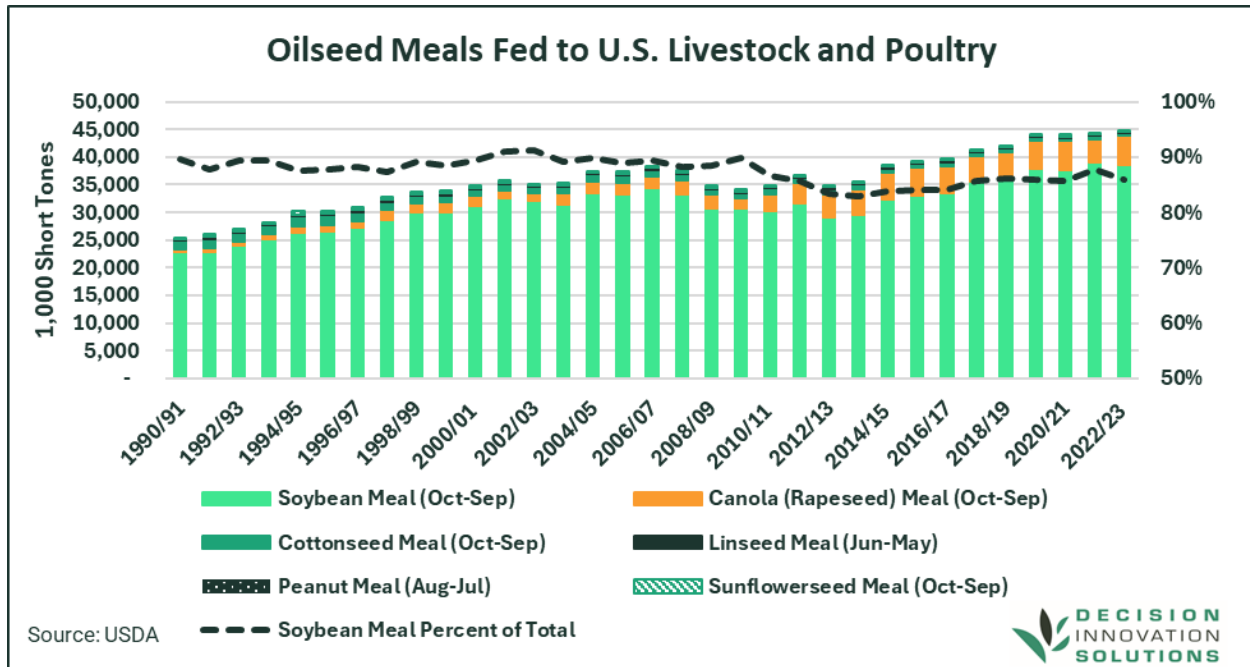


Figure 9. Oilseed Meals Fed to U.S. Livestock and Poultry

2.3 Rendered Feed Ingredients

About one-third to one-half of each animal produced for meat, milk, eggs, and fiber is not consumed by humans (Meeker and Hamilton, 2006). Through rendering processes, these raw materials coming from slaughterhouses result in useful products containing fats and proteins. Some of these products include inedible tallow, poultry fat, meat and bone meal, meat meal, poultry byproduct meal, and feather meal, among others. Some of these products are used as feedstock for fuels, feed for livestock and aquaculture, and as pet foods.

Variations in diets, market factors, and competing application purposes influence usage of these rendered products. Figure 10 shows the usage of rendered ingredients fed to U.S. livestock, poultry, and aquaculture. According to DIS estimates, the overall volume of rendered ingredients for livestock, poultry, and aquaculture declined from 9.75 million short tons (ST) in 2019 to 5.28 million ST in 2023. The largest change in usage was a drop in rendered fats used for feeds as a combination of factors both nationally and internationally changed the use of rendered fats in feed rations. Some of these factors include increases in biofuels and renewable fuels production, increased export of products, and steep price increases in fats and oils prices (nearly doubling in 2022), which have been coming down since then, but temporarily affected fat usage in feed rations. Other factors included changes in imports of used cooking oil and trade issues with used cooking oil, as well as changes in the inclusion rates of soybean meal and DDGs, which can affect the inclusion rate of oils in rations.

Another change in usage was a drop in animal protein meals, while animal numbers have increased over time, the efficiency of capture of products to remain human edible has increased. There has also been an increase in non-rendered products such as "wet pet" that may not be included in the rendered totals. Another point that has impacted the meat meals would be the increased production of corn protein concentrate, ferments soy protein products, and the huge increase in soybean meal production driven by the increased crush capacity as infrastructure has been added to account for the bio-fuel sector. As these products enter the market in increased volume the prices are driven downward, and they would be selected instead of animal proteins.

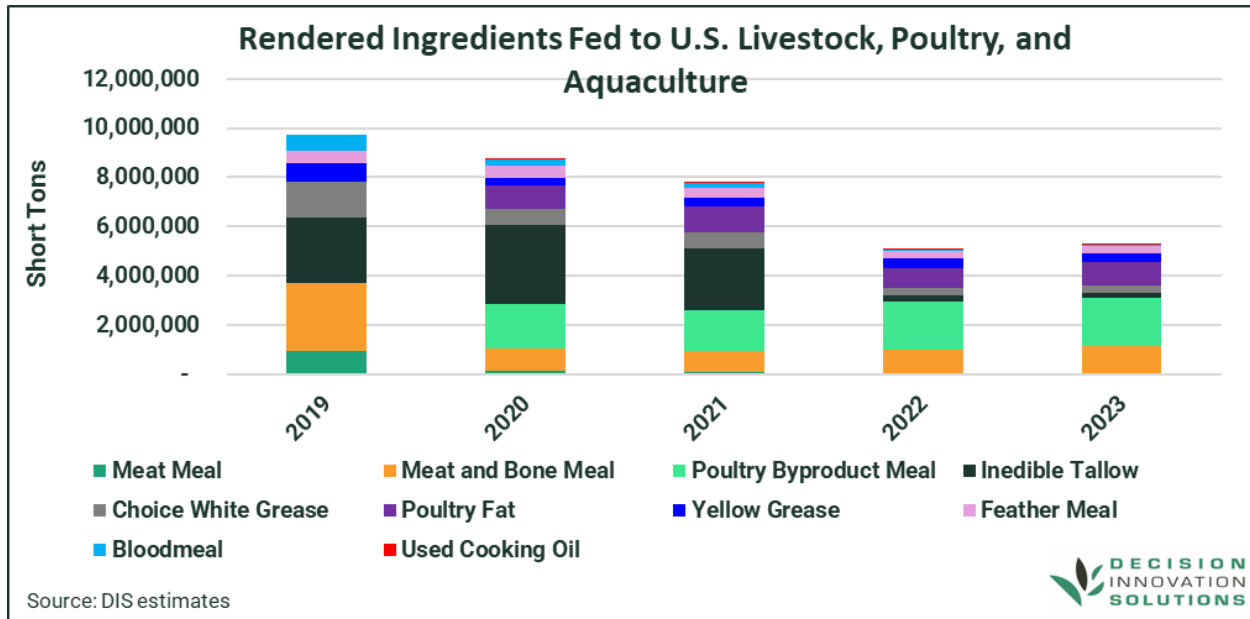


Figure 10. Rendered Ingredients Fed to U.S. Livestock, Poultry, and Aquaculture

2.4 Circular Ingredients

In the “Guidelines on the role of livestock in circular bioeconomy systems” report⁵, published by the Food and Agriculture Organization of the United Nations (FAO), it states that based on the 42nd session of the FAO conference, the term of “bioeconomy” is defined as, “the production, utilization, conservation and regeneration of biological resources, including related knowledge, science, technology and innovation to provide sustainable solutions (information, products, processes and services) within and across all economic sectors to enable a transformation to a sustainable economy.” This includes terrestrial and marine ecosystems. Primary production sectors (crop and livestock production, forestry, fisheries, and aquaculture), and all activities that use biological resources to produce food, feed, fiber, energy and other biobased products and services.

Therefore, circular feed ingredients are understood as the ingredients used in animal feed that are either coproducts or by-products from the human food industry or other industrial processes. Categorization of circular versus non-circular feed ingredients was referenced from the “Guidelines on the role of livestock in circular bioeconomy systems” report. The same categorization was applied to both feed ingredients used in the 2019 study and this 2023 study. A full list of feed ingredient circularities used in this analysis is listed in Appendix 6.

⁵ <https://openknowledge.fao.org/server/api/core/bitstreams/cfb89e72-76cf-449c-b8b8-7e2a37f2c89d/content>

2.5 2024 Feed Mill Distribution in the United States

Food-producing animals fed in the United States include broilers, turkeys, egg-laying hens (layers), hogs, dairy cows, beef cattle, and aquaculture. As such, U.S. animal agriculture, mainly farmers and ranchers, are the feed manufacturing industry’s primary customers.

To best serve customers and meet demand requirements, feed manufacturers strive to minimize two aspects of their business through strategic location selection. The first is to select a location that is within close proximity to feed inputs (e.g., grains, oilseeds and co-products) and the second is to select a location that minimizes feed transportation costs to the animals that will consume the feed. With these two considerations in mind, it is clear why the areas with the most feed mills coincide with the most concentrated populations of animals on feed and inputs for feed processing.

Figure 11 represents the distribution of the 5,051 animal feed mills located in 3,645 cities across the United States, where each dot represents a city that has at least one feed mill, based on data from the Food and Drug Administration’s “BSE/Ruminant Feed Inspections Firms Inventory” list. With the data presented, a clear conclusion can be made that the concentration of animals on feed as well as the production of the necessary feed ingredients occurs in the midwestern, southern and eastern regions of the United States.

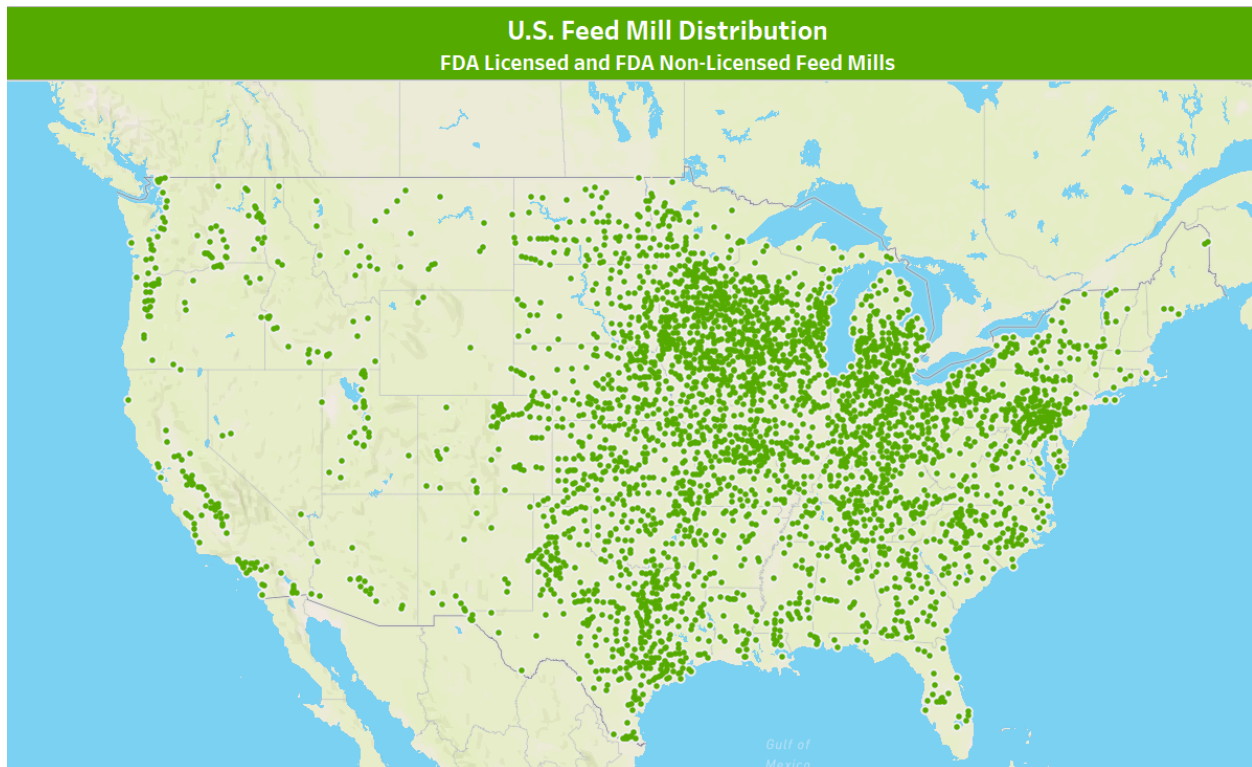


Figure 11. U.S. Feed Mill Distribution

3 Methodology for State Level Feed Consumption Estimates for CY2023

3.1 Poultry and Livestock

To give additional context on the enhancements to ingredient inclusion, more detail on how DIS uses the Ration Cost Optimization (RCO) model is as follows:

1. The quantity of animals for each species is derived from the USDA's annual inventory and/or production numbers published by the USDA. For each species, inventory numbers are available in monthly and/or annual reports produced by the USDA/NASS for at least the higher production states. Using publicly available data and internally developed methodology and resources, DIS allocated the "Other States" data to the "missing" states.
 - a. For beef cattle, it is the inventory of bulls, cows, calves, calf crop, backgrounding cattle, replacement heifers, and cattle on feed with appropriate adjustments for death loss, slaughter, imports and exports of live cattle.
 - b. For dairy cattle, it is bulls, cows, calves, calf crop, replacement heifers, with dairy steers and/or heifers that are fed out included in the cattle on feed group within the beef cattle group. Adjustments are made for imports, exports of live cattle and slaughter.
 - c. For broilers, it is the annual number of head produced.
 - d. For layers it is the annual inventory of layers.
 - e. For turkeys it is the annual number of head produced.
 - f. For swine it is the annual inventory of breeding stock (sows and boars), and the annual inventory of growing hogs by weight group.
 - g. For sheep it is the annual inventory of rams, ewes, and lambs plus the annual lamb crop with adjustments for slaughter.
 - h. For goats it is the annual inventory of bucks (meat and milk), does (meat and milk), replacement kids (meat and milk), and the kid crop (meat and milk) with adjustments for slaughter.
 - i. For horses it is the annual inventory of horses based on the latest American Horse Council Survey.
2. List the possible feed ingredients for a given species, for all species, i.e., Beef Cattle, Dairy Cattle Broilers, Layers, Turkeys, Hogs, Sheep, Goats, and Horses. For this report, there were 69 unique feed ingredients used among the studied species.
3. From USDA reports and other industry resources, DIS determined the total being the total quantity of each feed ingredient available for feed use in the U.S. This implies taking into account beginning stocks, production, imports, exports, ending stocks, and non-feed uses of each ingredient. For example, for fats and oils, determine the amounts used for human foods, biofuels, and industrial uses and subtract those quantities from the total supply. For some rendered meals, estimate the quantities used in non-feed uses such as for fertilizer.
4. For a given species, use and allocate USDA published price points for all relative feed ingredients plus transport costs to estimate the cost for the corresponding feed ingredients as available in each state.
5. For a given species, breakdown the inventory groupings into different stages of gestation/lactation for breeding animals and stages of production for production stock according to National Research Council (NRC) breakouts.
 - a. Beef cattle are broken into beef cows since calving (from month 1 to 12), growing cattle monthly from birth to 20 months of age taking into account separate diets for

- backgrounding cattle versus cattle on feed, and replacement heifers monthly from 12-24 months of age. Similar breakouts of inventory and production stages are applied to dairy cattle, as appropriate.
- b. Hog inventories are broken down into 3 groups for gestation sows, and one lactation segment, growing hogs are divided into 7 weight-related groupings (5-7 kg, 7-11 kg, 11-25 kg, 25-50 kg, 50-75 kg, 75-100 kg, and 100-135 kg).
 - c. Broilers are divided into 3 production stages by weeks of age.
 - d. Layers are divided into 3 growth/production groups (starter, grower, in-production).
 - e. Turkeys are divided into 6 growth phases.
 - f. Ewe diets are formulated for 6 stages of production (maintenance, flushing, non-lactating, last 4 weeks before lambing, first stage lactation, second stage lactation). Lamb diets are divided into 6 stages of growth.
 - g. Goat nutrient requirements are set for 2 stages of lactation, replacement goats for 3 stages of development, and kids for 5 stages of growth.
 - h. Horse nutrient requirements are set for 5 stages for growing horses and 7 different groupings for horses over 2 years old.
6. Nutrient requirements (e.g., energy, crude protein, amino acid, fat and fiber) are set for all stages of growth or production, as appropriate, using the recommendations and guidance of the NRC manual.
 7. For a given state/region, apply unique ingredient limitations, to mirror reality.
 - a. Methodology prescribes that grain sorghum or barley are used as feeds where they are produced.
 - b. Methodology more prominently uses DDGs where they are produced but allows for nationwide transportation and distribution.
 - i. Similar conditions are applied to other by-product feeds.
 1. Use potato products where potatoes are grown.
 2. Use citrus and beet pulps where they are grown.
 - ii. Establish and adjust minimum and maximum inclusion rates for all major products and restrict the use of feed ingredients where dietary restrictions are appropriate, such as for cottonseed meal in monogastric animals.
 - c. For beef heifers, beef backgrounders, beef cows, growing cattle, dairy calves, and dairy heifers, estimate the percentage of nutrients that come from feed and from grass for all states/regions and all stages.
 8. Apply estimated feed ingredient costs, along with the nutrient requirements and ingredient limitations into ration cost optimization formulation in Solver of Microsoft Excel to find the optimized cost of feed ration (result shown as g/100g feed) for all stages, for a given state/region, and for a given species, taking into account the minimums or maximums set for individual ingredients by species and growth stage.
 9. Calculate the weighted average ration, by stage, for a given state/region and for a given species.
 10. For a species, use the weighted average percentage of each ingredient calculated from Step 9, multiply it by its corresponding inventory/production numbers, corresponding feed consumption, and corresponding days of feeding period to obtain the volume of a given ingredient.
 11. Summarize the quantities for a given ingredient for all states, for a given species.
 12. Reconcile all feed ingredients for all species based on national total availability and subject matter experts' comments.

- a. The DIS reconciliation process strives to result in individual feed use percentages for most ingredients between 95% and 105% of feed availability (adjusted for changes in inventories).
- b. For the major ingredients, the goal is total usage levels of 97% to 103% of feed-available supply.
- c. **Note:** DIS researchers made the assumption that the industry cannot feed more of an ingredient, in aggregate, than what is available for feed, but that all available ingredients should be used within the constraints set above (97%-103% of total national feed available supply), since there are no “big piles” of unused ingredients piling up beyond known inventories.

The RCO model was applied to all states uniquely for broilers, layers, and turkeys. The model was applied to the major producing states for hogs, beef cattle, dairy cattle, sheep, goats, and horses. Some minor states used the same ration as their nearest available state’s ration from the RCO. Region maps for livestock are shown below, from Figure 12 to Figure 17.

Common colors denote common base feed rations. For instance, in Figure 12, all Midwest states have their own ration, due to the large inventory and production numbers of hogs. But for some other states, such as Washington state and Oregon, that do not have many hogs, their rations were covered by a representative state that is closest to them. For instance, Montana’s and Utah’s rations were applied to Washington and Oregon, respectively. The labeled states in the diet region maps are the representative states used for a given ration region.

RCO Model States and Regions -- Swine

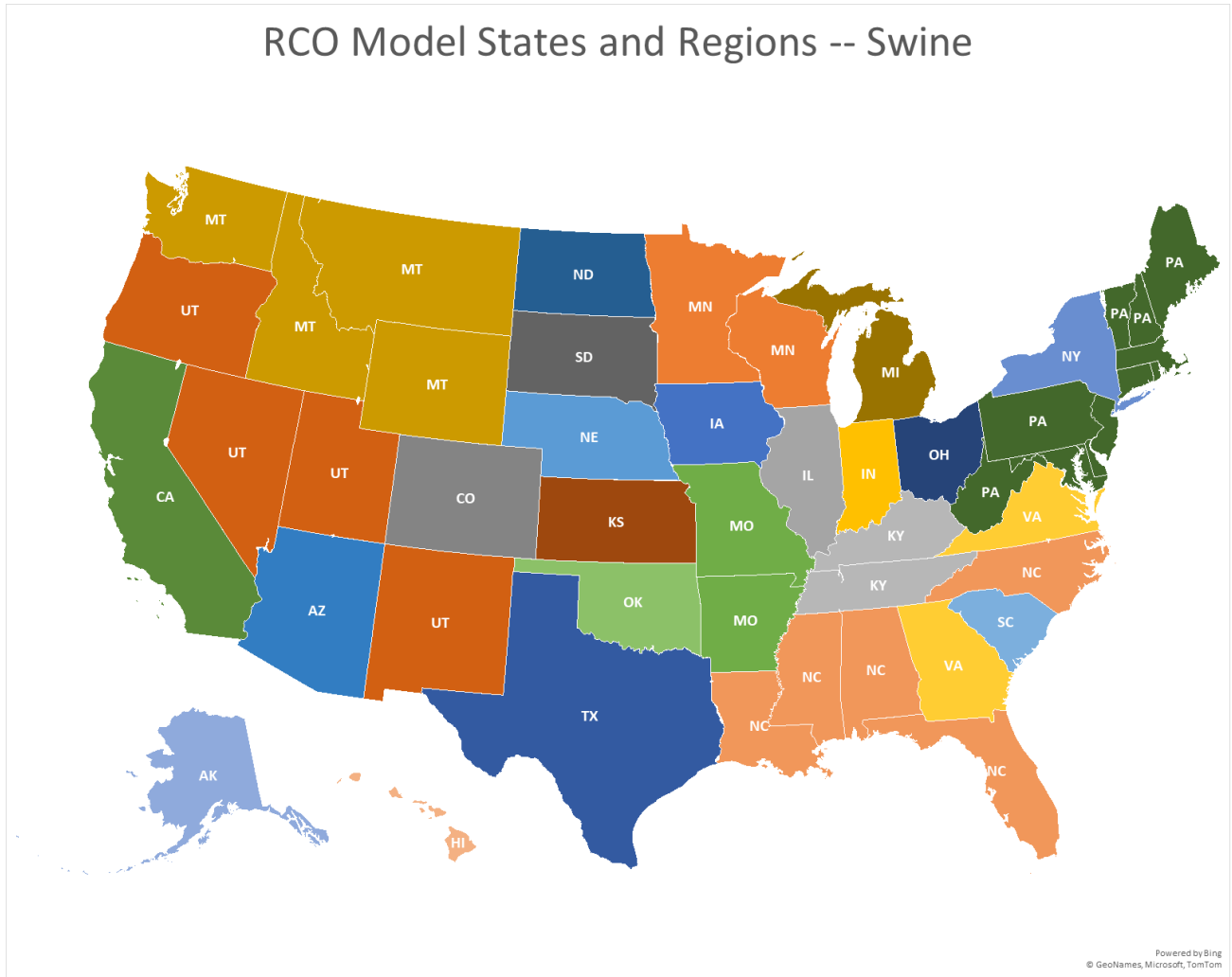


Figure 12. Hog Ration Regions

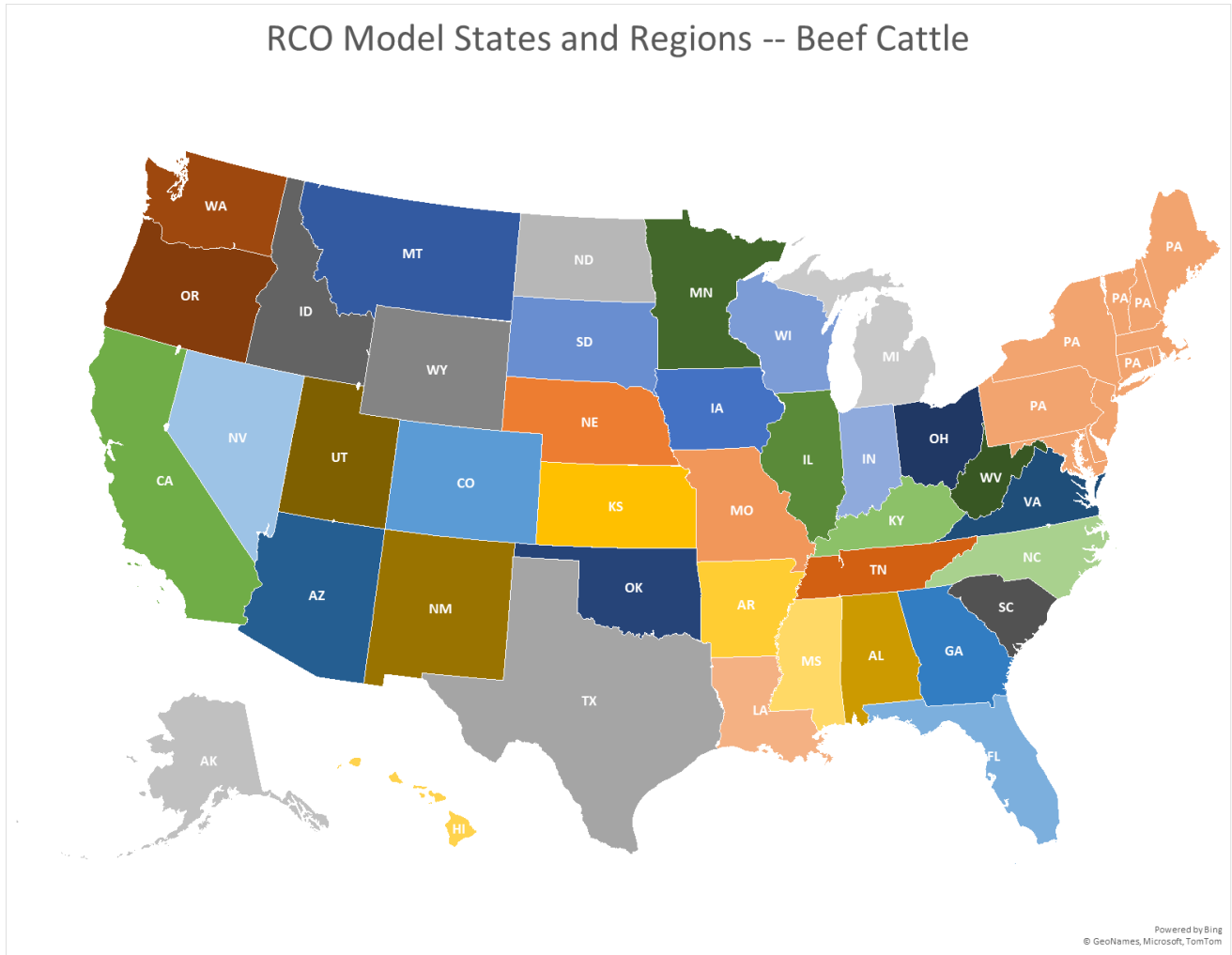


Figure 13. Beef Cattle Ration Regions

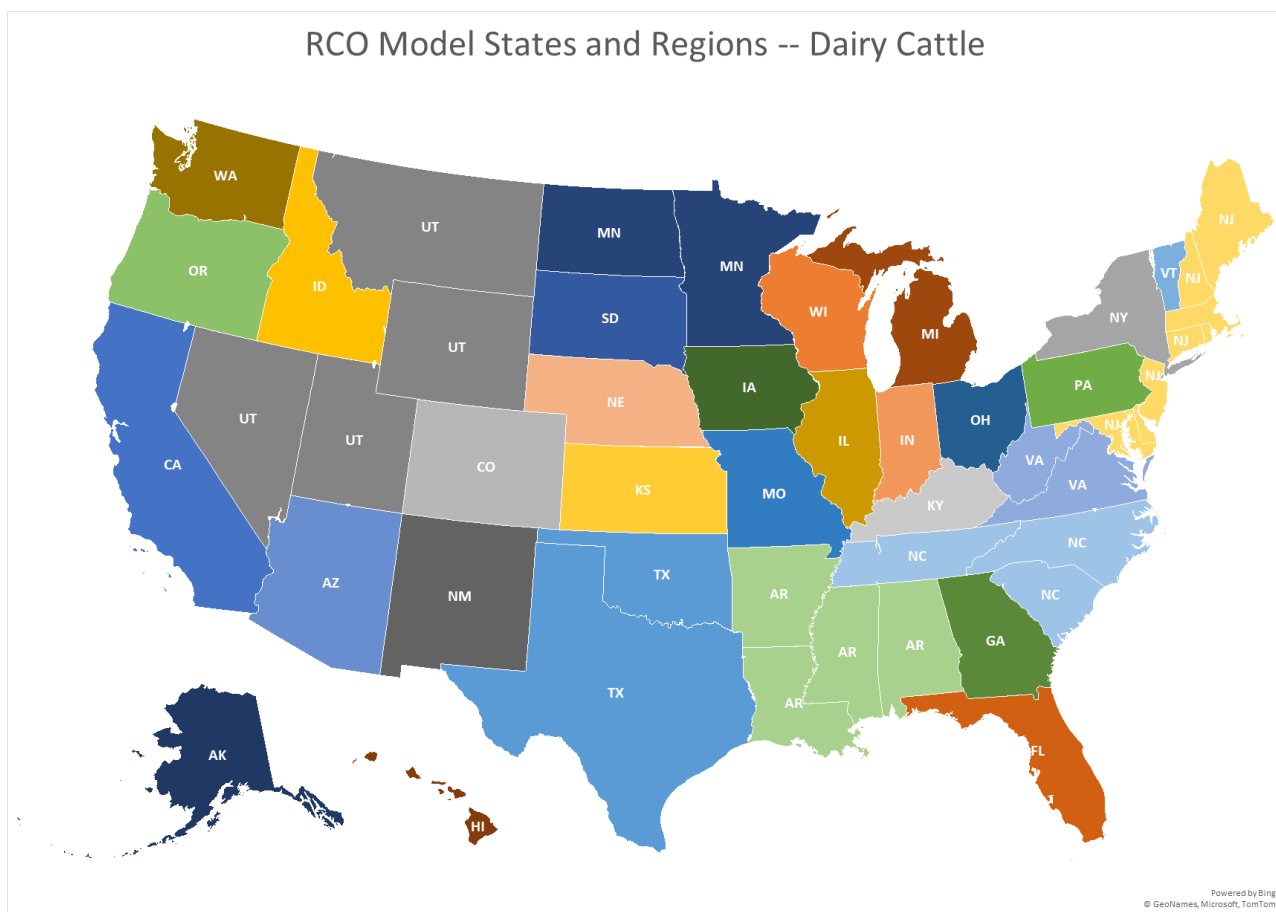


Figure 14. Dairy Cattle Ration Regions

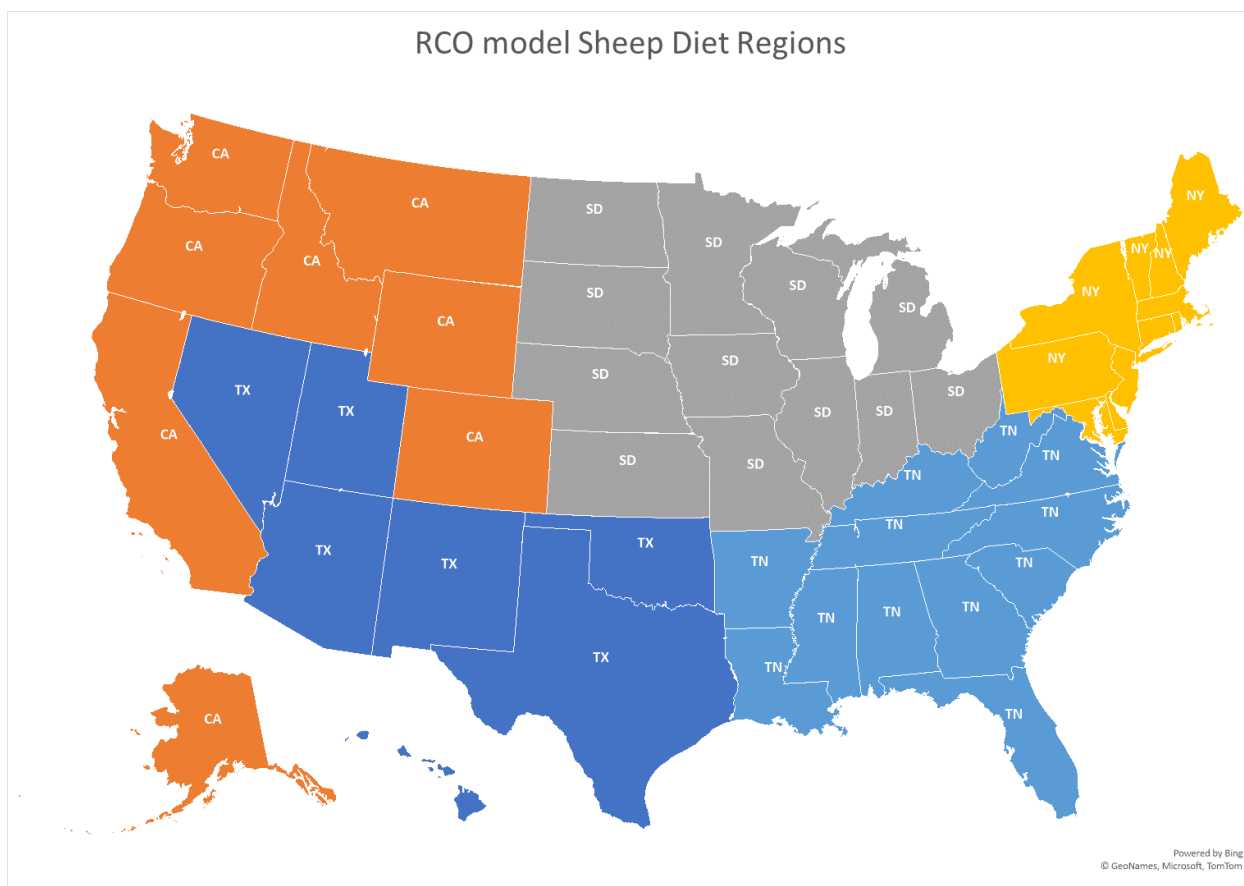


Figure 15. Sheep Ration Regions

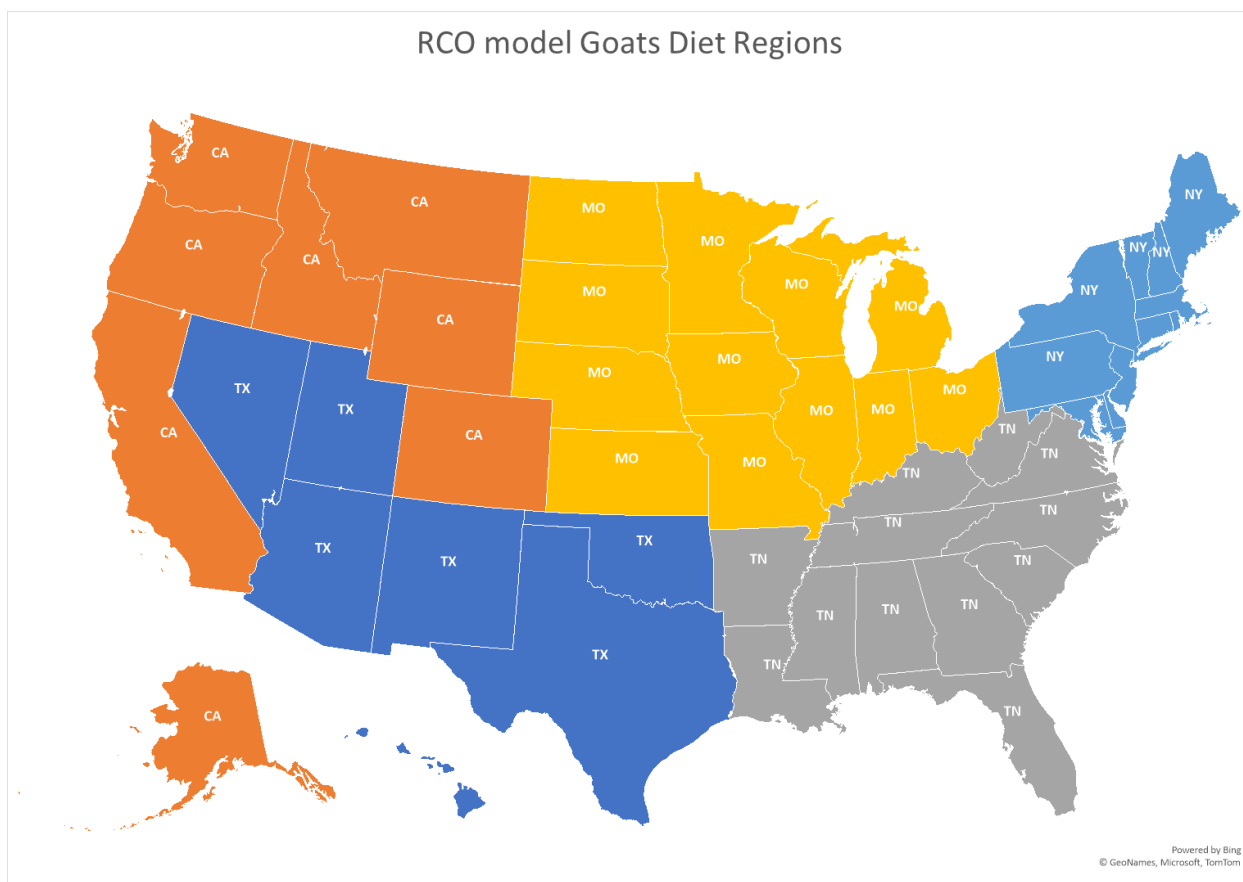


Figure 16. Goat Ration Regions

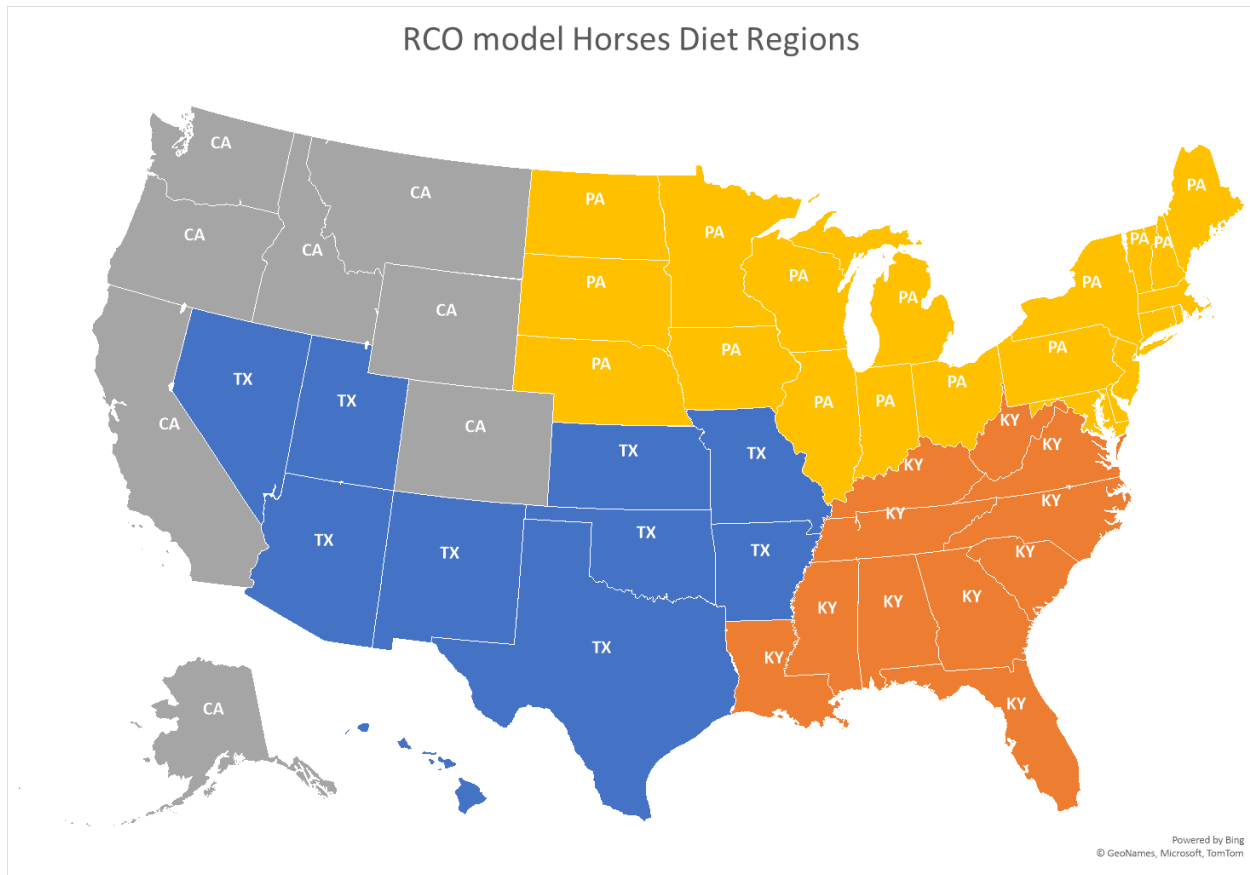


Figure 17. Horse Ration Regions

3.2 Aquaculture

The 2018 USDA Census of Agriculture provides information on the number of aquaculture operations with sales within each state. The other categories are Food Fish, Bait Fish, Crustaceans, Mollusks, Ornamental Fish, Sport Fish, Aquaculture and Other. The 2023 USDA Census of Aquaculture was not released in time for use in this report.

Five major food fish are included in this study. They are catfish, trout, tilapia, hybrid striped bass and yellow perch. Saltwater shrimp and freshwater prawns are also included in the shrimp category. For this report, DIS used the 2018 USDA Census of Aquaculture Sales data.

In most species of food fish, the sales information is reported in four life stages: broodstock, fingerlings and fry, stockers, and food size. This breakdown is not available for bait fish, hybrid striped bass and yellow perch and is not applicable to crustaceans.

For trout and catfish, the USDA also produces annual reports for the previous two years. The data included in these USDA/NASS reports are very similar to the data included in the 2018 Census of Aquaculture and provides updated data on catfish and trout production. However, data is not updated or included in the annual reports for the number of operations.

For all other species, using input from SMEs and datasets from FishStatJ⁶, DIS established a growth percentage from the 2018 census to create the 2023 estimates. The 2023 populations for each species include an adjustment for losses through the specific life stage growth period.

Working with industry experts, average target weights, feed conversion ratios (FCR), and soybean meal inclusion rates were determined for each species (i.e., catfish, trout, tilapia, hybrid striped bass, yellow perch, baitfish and shrimp). In addition, DIS created an estimate for pre-harvest losses for each species with the assumption that this factor is applied evenly over the grow-out period. These factors were used to calculate the estimated soybean meal consumption per head in each life stage category.

⁶ Food and Agriculture Organization, <http://www.fao.org/fishery/statistics/software/fishstatj/>

4 Results

4.1 State Level Feed Consumption Results

Using the methodology described previously, this section represents DIS’s animal feed consumption estimates by species by ingredient for the year 2023. In addition to the accompanying charts and tables (see Appendix 6.4), DIS also estimated the ingredients which do not normally pass through feed mills (e.g., corn silage, alfalfa hay and other hay). A full list of feed ingredients used for this study, and the corresponding ingredient aggregation and ingredient circularity are shown in Appendix 6.

4.1.1 Total

As shown in Figure 18 and tables in Appendix 6.4, the total amount of feed fed to U.S. livestock, poultry, horse and aquaculture in 2023 equaled approximately 550.9 million tons. The map in Figure 19 shows how that is broken out by state.

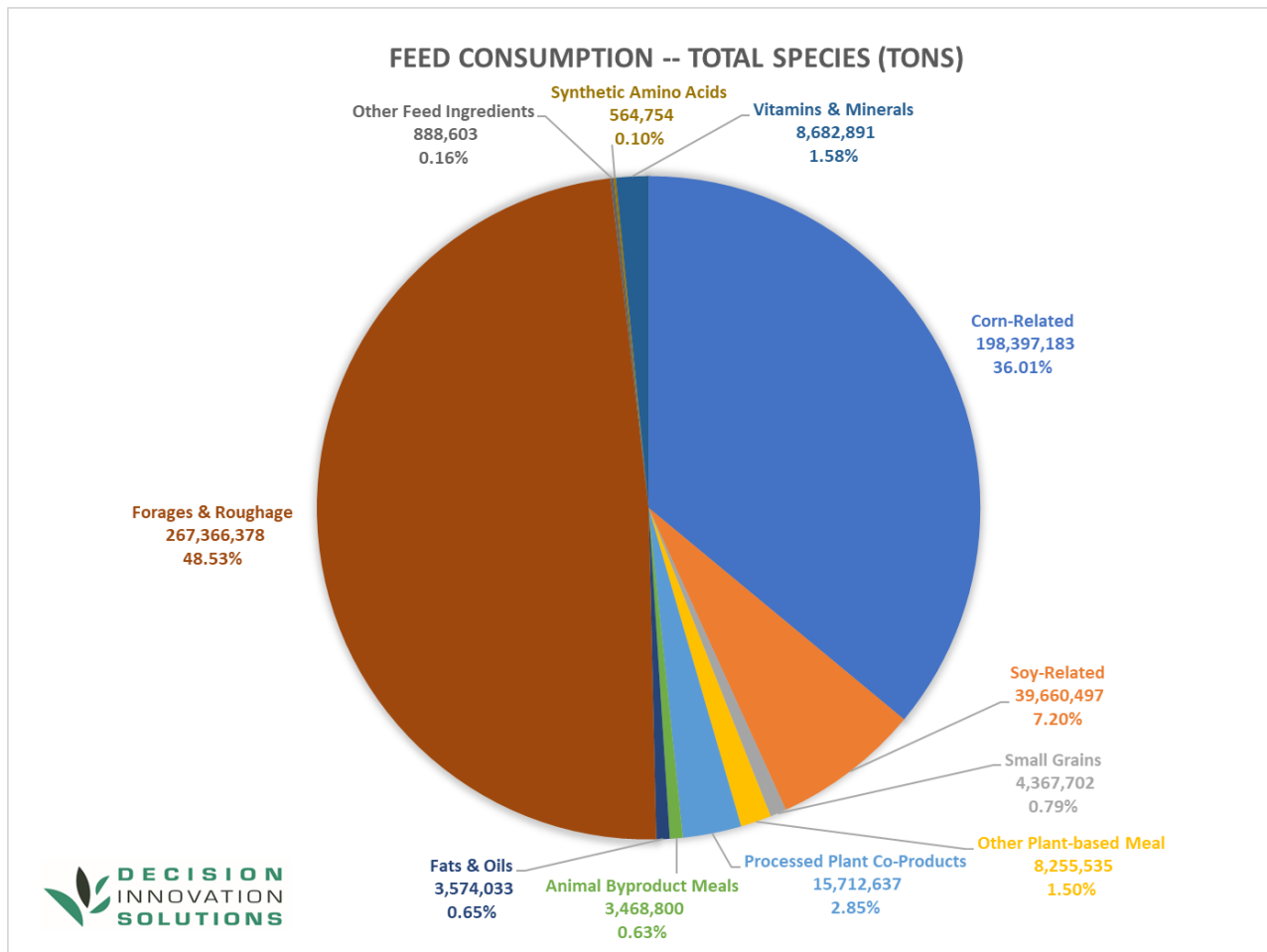


Figure 18. Estimated 2023 Total Diet Composition

The top five states for overall feed consumed include Texas, California, Iowa, Nebraska and Kansas. Slightly more than half of the total amount came from harvested forage. Aside from forages (48.5%), corn, the most abundantly produced crop in the United States, makes up the largest share (28.9%) of total feed consumption. Soybean meal (6.4%) and DDGs (5.9%), two other commodities produced in large quantities, are also included in relatively large quantities. These top four ingredients represented about 90% of all feed tonnage included in 2023 animal diets. For the full table of ingredient quantities and ingredient categorizations, see Appendix 6.

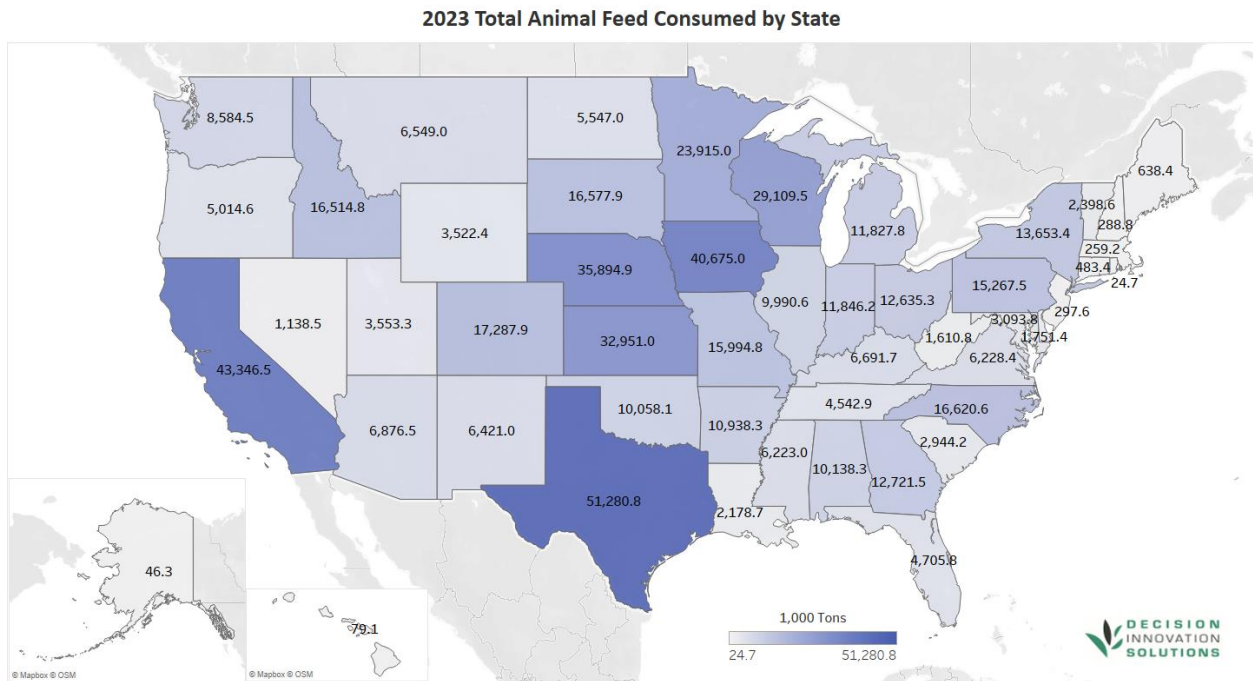


Figure 19. 2023 Total Animal Feed Consumed (in 1,000 Tons) by State

4.1.1.1 Total Animal Feed (without Harvested Forages and Roughages)

As shown in Figure 20, the total amount of feed (without harvested forages and roughages) fed to U.S. livestock, poultry, horses and aquaculture in 2023 equaled approximately 283.6 million tons. The map in Figure 21 shows how that is broken out by state.

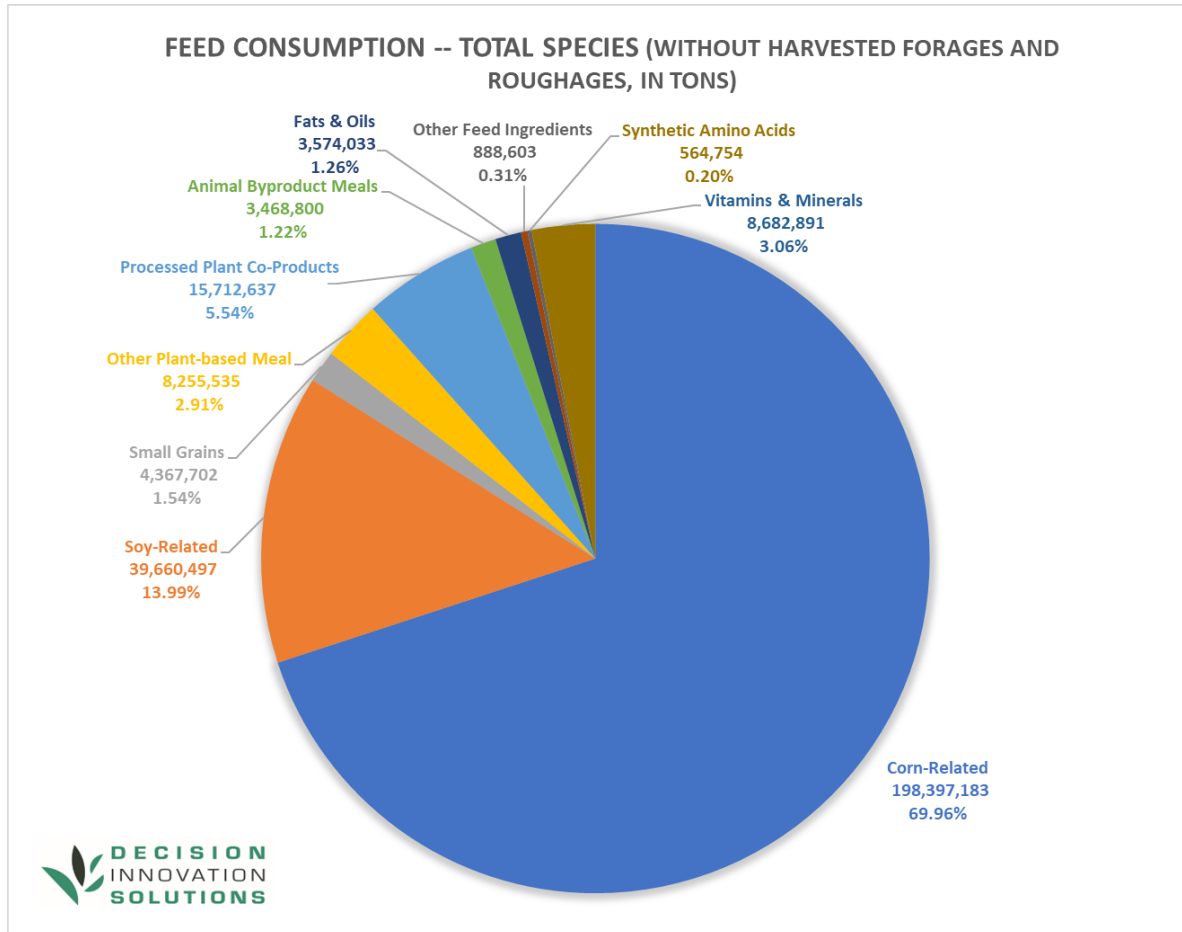


Figure 20. Estimated 2023 Total Diet Composition without Harvested Forages

Excluding the harvested forages, the top five states for feed consumed are Iowa, Texas, Nebraska, North Carolina and Kansas. Corn, the most abundantly produced crop in the United States, makes up the largest share (56.2%) of total feed consumption. Soybean meal (12.5%) and DDGs (11.5%), two other commodities produced in large quantities, are also included in relatively large quantities. These top three ingredients represented 80.2% of all feed tonnage included in 2023 animal diets.

2023 Total Animal Feed (without Harvested Forages) Consumed by State

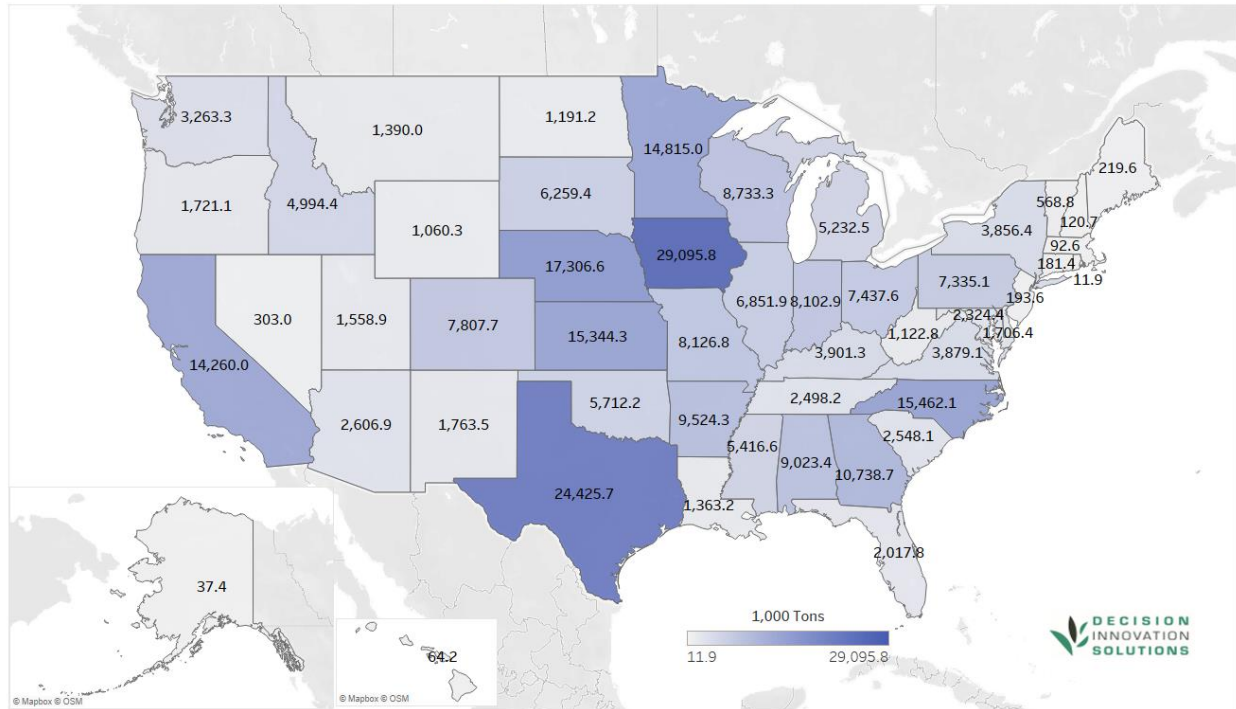


Figure 21. 2023 Total Animal Feed without Harvested Forages Consumed (in 1,000 Tons) by State

4.1.1.2 Total Harvested Forages and Roughages

Harvested forages and roughages (i.e., corn silage, alfalfa hay, other hay, legume silage, corn stalks, sorghum silage, and wheat straw) in this study were estimated in the consumption by dairy cattle (including dairy cows that have calved, bulls, heifers and calves) and beef cattle (including beef cows, bulls, beef heifers, backgrounders, cattle on feed and calves). The map in Figure 22 shows how that is broken out by state. California, Texas, and Wisconsin are the top three states, which combined, fed about 76.3 million tons of harvested forages in 2023.

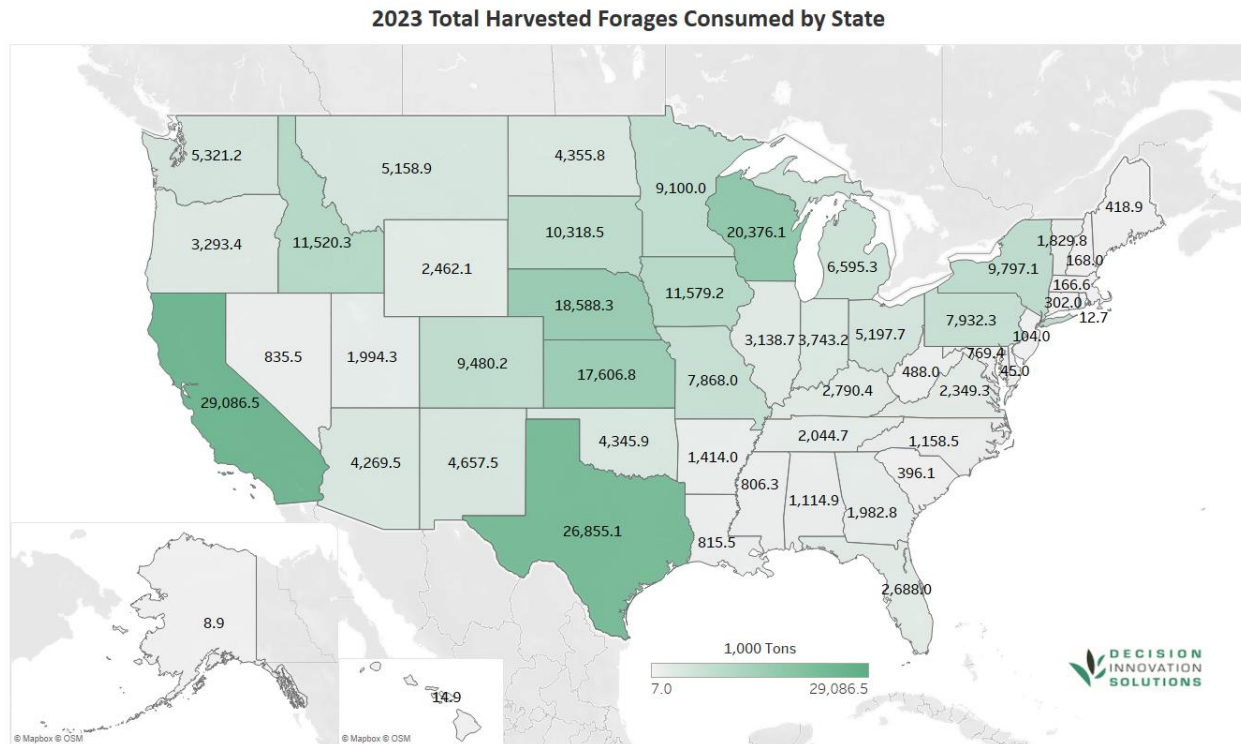


Figure 22. 2023 Total Harvested Forages and Roughages Consumed (in 1,000 Tons) by State

As shown in Figure 23, in 2023, 134.2 million tons of harvested forages and roughages were consumed by dairy cattle, 131.1 million tons of harvested forages and roughages were fed to beef cattle, 1.1 million tons were fed to horses, and 0.9 million tons were fed to sheep and goats in 2023.

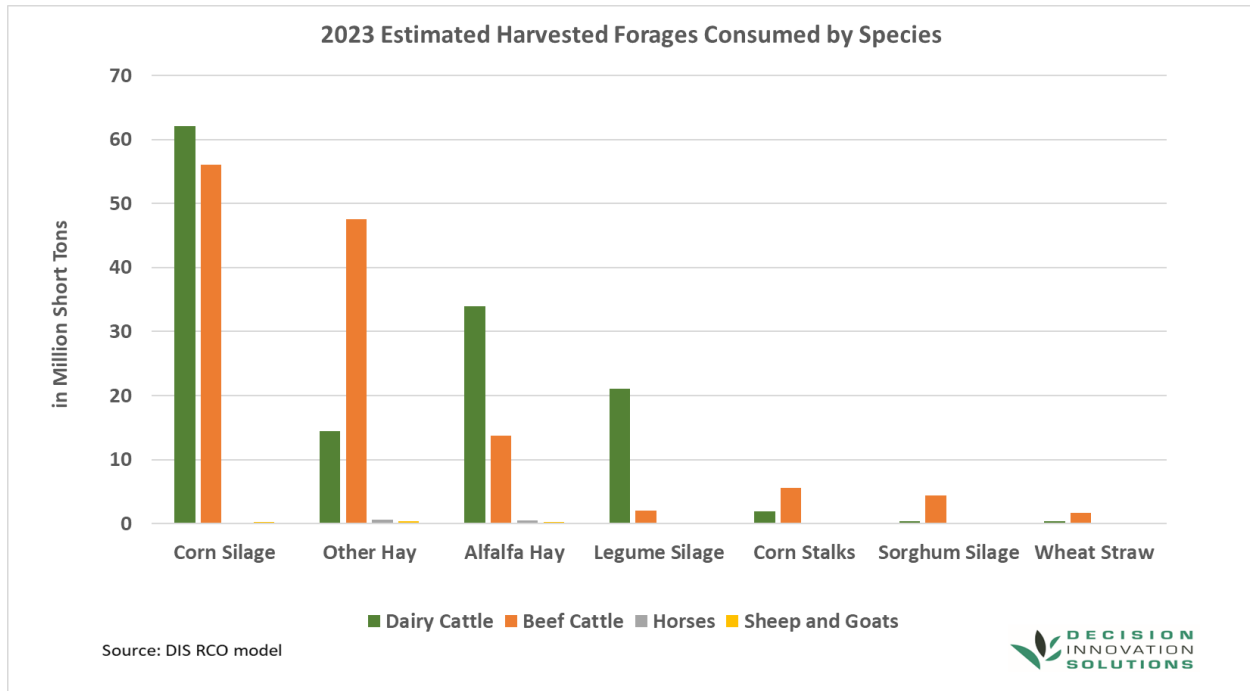


Figure 23. 2023 Harvested Forages Consumed by Species

The top four harvested forage ingredients among animals which consume forage are: corn silage, other hay, alfalfa hay and legume silage.

Table 2. Forage Consumption by Species (2023)

2023 Ingredient Consumption by Species (tons)				
Ingredient	Dairy Cattle	Beef Cattle	Horses	Sheep and Goats
Corn Silage	62.1 million	56.0 million	0	236,200
Other Hay	14.4 million	47.5 million	600,000	392,400
Alfalfa Hay	34.0 million	13.8 million	500,000	282,900
Legume Silage	21.0 million	2.1 million	0	0

4.1.1.3 Total Feed Consumption Comparison

Feed ingredient consumption comparisons for all species between 2019 and 2023 are shown in Figure 24 and Appendix 6.2. Total feed ingredient consumption decreased by 2.1%, from 562.7 million tons to 550.9 million tons, from 2019 to 2023. While feed consumption *without* harvest forages and roughages increased by 3.1% from 2019 to 2023 (from 275.1 million tons in 2019 to 283.6 million tons in 2023), feed

consumption *with* harvest forages and roughages fell by 2.1%⁷ from 2019 to 2023 (from 562.7 million tons in 2019 to 550.9 million tons in 2023). Several reasons are:

1. Due to animal numbers declining from 2019 to 2023 (see Figure 25).
2. More animal sub-species were involved in the 2023 feed consumption data compared to 2019, for example, only cattle on feed and beef calves were involved in the 2019 feed consumption data, while in the 2023 feed consumption data, all sub-species were included, i.e. bulls, cows, calves, calf crop, backgrounding cattle, replacement heifers, and cattle on feed with appropriate adjustments for death loss, slaughter, imports and exports of live cattle.
3. The feed ingredient list was expanded in 2023, meaning 23 feed ingredients were added into 2023 feed consumption analysis, the full list of feed ingredients used in 2023 are in Appendix 6.
4. Feed availabilities and prices may be another two key factors that have impact on feed utilization.
5. More explanation details are in Appendix 6.5.

Total quantities (short tons) of ingredients (see Appendix 6.1 for aggregation scheme) fed in 2023 are corn-related (200.4 million short tons), soy-related (40.1 million short tons), small grain (4.7 million short tons), other plant-based meal (8.3 million short tons), processed plant co-products (12.3 million short tons), animal byproduct meals (5.2 million short tons), fats and oils (3.7 million short tons), harvested forage and roughage (270.9 million short tons), synthetic amino acids (0.6 million short tons) and vitamins and minerals (8.7 million short tons), shown in Table 3.

Animal byproduct meals and fats and oils dropped by 25% and 39%. The largest change in usage was a drop in rendered fats used for feeds as a combination of factors both nationally and internationally changed the use of rendered fats in feed rations. Some of these factors include increases in biofuels and renewable fuels production, increased export of products, and steep price increases in fats and oils prices (nearly doubling in 2022), which have been coming down since then, but temporarily affected fat usage in feed rations. Other factors included changes in imports of used cooking oil and trade issues with used cooking oil, as well as changes in the inclusion rates of soybean meal and DDGs, which can affect the inclusion rate of oils in rations.

Another change in usage was a drop in animal protein meals, while animal numbers have increased over time, the efficiency of capture of products to remain human edible has increased. There has also been an increase in non-rendered products such as "wet pet" that may not be included in the rendered totals. Another point that has impacted the meat meals would be the increased production of corn protein concentrate, ferments soy protein products, and the huge increase in soybean meal production driven by the increased crush capacity as infrastructure has been added to account for the bio-fuel sector. as these products enter the market in increased volume the prices are driven downward, and they would be selected instead of animal proteins.

⁷ All feed consumption comparisons between 2023 versus 2019 exclude pet food estimates. To allow for comparison, the 2019 total feed consumption was also adjusted to exclude pet food section.

Table 3. Total Feed Consumption Comparison (2019 and 2023)⁸

Ingredient	2023	2019	Percent Change
Corn-Related	200.4 million	181.1 million	7.7%
Soy-Related	40.1 million	41.7 million	(3.7%)
Small Grain	4.7 million	5.6 million	(16.3%)
Other Plant-Based Meal	8.3 million	10.3 million	(19.5%)
Processed Plant Co-Products	12.3 million	11.3 million	8.4%
Animal Byproduct Meals	5.2 million	7.0 million	(25.3%)
Fats and Oils	3.7 million	6.1 million	(39.4%)
Harvested Forage and Roughage	270.9 million	289.1 million	(6.3%)
Synthetic Amino Acids	564,800	556,800	1.4%
Vitamins and Minerals	8.7 million	9.3 million	(6.2%)

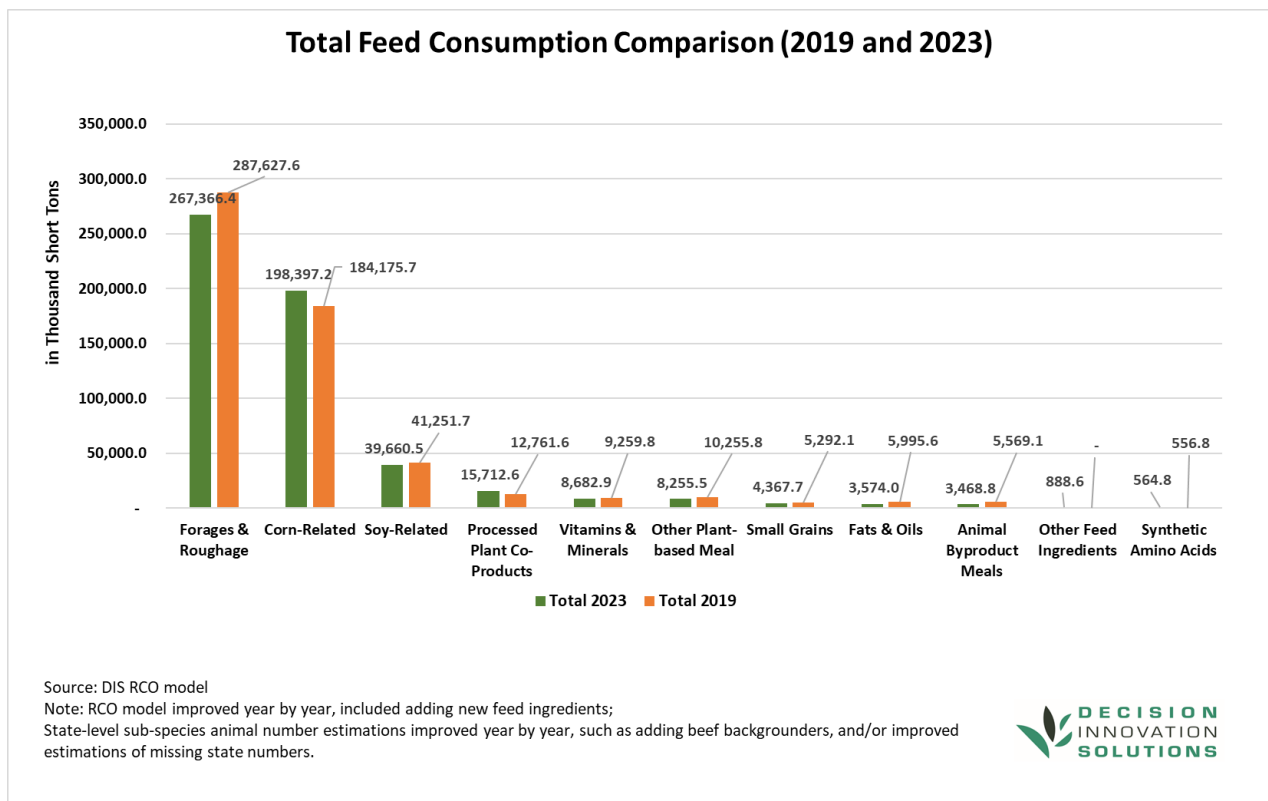


Figure 24. Total Feed Consumption Comparison (2019 and 2023)

⁸ The number of studied ingredients was expanded, see Appendix 6 for more details.

Table 4 shows the inclusion rates of 11 key feed ingredients used in broilers, layers, turkeys, marketing hogs, and dairy cows. Since poultry byproduct meal and poultry fat were added into the RCO model beginning with the 2020 calendar year, the inclusion rates for these two ingredients are from an estimated 2020 diet, rather than 2019 for species fed diets containing these ingredients.

Table 4. Inclusion Rates Comparison by Selected 11 Key Ingredient by Species (2019 and 2023)

Species	Broilers		Layers		Turkeys		Marketing Hogs		Dairy Cows	
Ingredient	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023
Corn	55.50%	59.34%	56.03%	54.96%	53.88%	64.87%	59.13%	65.24%	9.48%	9.43%
Corn DDGs	4.64%	1.95%	8.48%	5.76%	2.89%	3.14%	7.51%	10.40%	4.63%	2.71%
Soybean Meal	27.99%	29.91%	15.94%	19.58%	31.07%	22.99%	10.67%	10.16%	1.74%	2.21%
Meat and bone Meal	0.28%	0.04%	1.40%	0.03%	7.84%	1.12%	1.31%	0.22%	0.85%	0.40%
Poultry Byproduct Meal *	0.24%	0.31%	0.37%	0.36%	0.68%	1.73%	0.78%	0.32%	0.60%	0.79%
Feather Meal	0.08%	0.24%	0.00%	0.00%	1.10%	0.08%	0.17%	0.00%	0.09%	0.07%
Wheat Midds	1.14%	1.32%	3.77%	6.22%	0.00%	2.38%	0.82%	3.21%	0.00%	0.00%
Soybean Oil	0.44%	0.41%	0.69%	0.31%	0.00%	0.65%	0.00%	0.34%	0.25%	0.35%
Yellow Grease	1.01%	0.42%	0.06%	0.00%	1.39%	0.82%	0.00%	0.00%	0.00%	0.00%
Poultry Fat *	0.14%	0.09%	0.00%	0.00%	0.00%	0.45%	0.00%	0.00%	0.42%	0.50%
Inedible Tallow	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.23%	0.12%

* Poultry byproduct meal and poultry fat were added in to RCO model since 2020, the inclusion rates for these two ingredients were from 2020 diets.



In addition to inclusion rates having an impact on overall feeding of a given ingredient, an equally important factor is animal production (broilers and turkeys) and inventory (layers, dairy cattle, beef cattle, hogs, sheep and goats and horses) levels. Figure 25 shows production and inventory changes from 2019 to 2023.

- Broilers: production decreased 0.2%, from 9.18 billion head to 9.16 billion head
- Layers: inventory decreased 4.3%, from 403.6 million head to 386.4 million head
- Turkeys: production decreased 4.8%, from 229.0 million head to 218.0 million head
- Hogs⁹: inventory decreased 2.0%, from 77.3 million head to 75.8 million head
- Dairy cattle¹⁰: inventory decreased 1.4%, from 25.6 million head to 25.3 million head
- Beef cattle¹¹: inventory decreased 7.4%, from 93.6 million head to 86.7 million head
- Sheep and Goats¹²: inventory decreased 2.1%, from 7.3 million head to 7.1 million head
- Horses¹³: inventory decreased 21.4%, from 8.5 million head to 6.7 million head

⁹ Includes marketing hogs and breeding hogs.

¹⁰ Includes dairy cows that calved, dairy bulls, dairy replacement heifers, dairy calves and current year calf crop.

¹¹ Includes beef cows, bulls, replacement heifers, backgrounders, growing cattle, cattle on feed, and current year calf crop.

¹² Includes sheep, meat goats and dairy goats.

¹³ Horse inventory data decreased significantly due to using different data sources. In the 2019 study, horse population data was from the American Veterinary Medical Association. While in the 2023 study, feed consumption in horses was estimated by RCO method, the inventory data was from a report called "2023 Economic Impact Study of the U.S. Horse Industry", published by the American Horse Council in early 2024 at <https://horsecouncil.org/economic-impact-study/>.

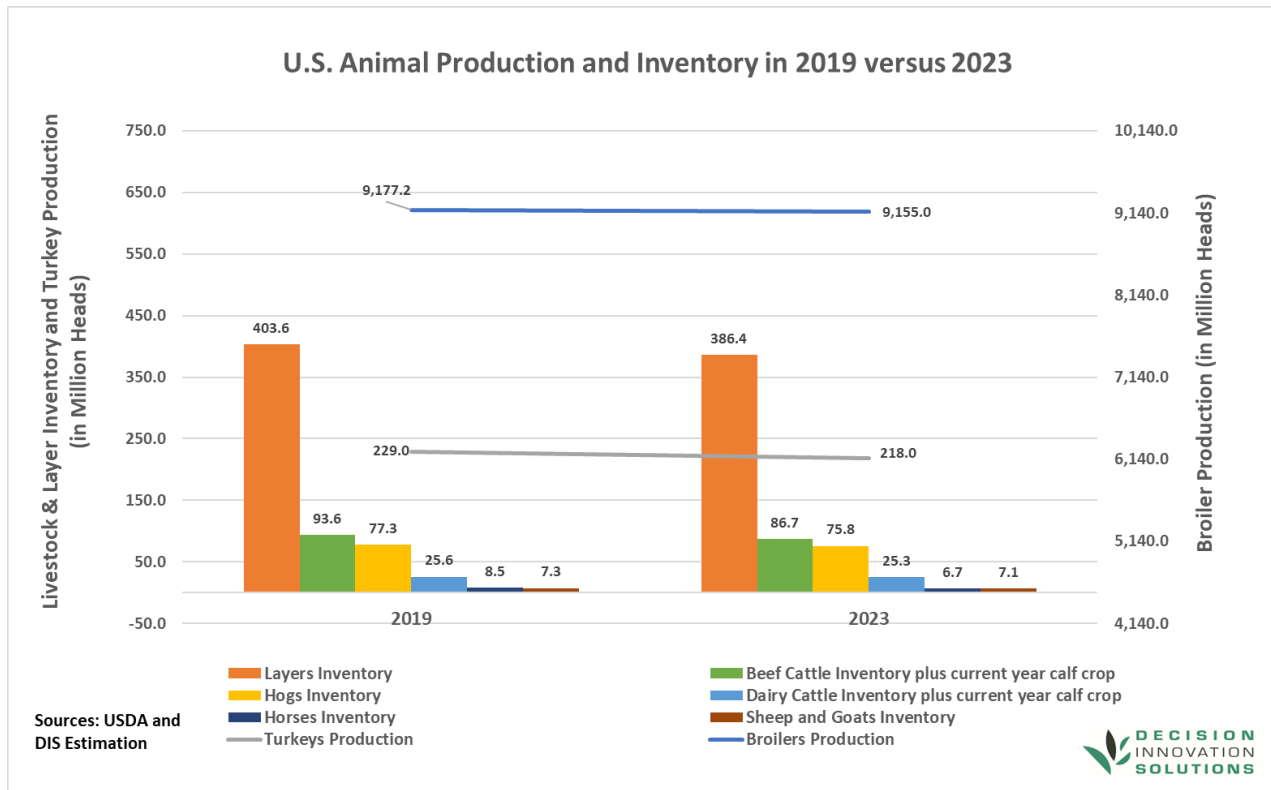


Figure 25. U.S. Animal Production and Inventory Numbers (2019 and 2023)

4.1.1.4 Total Circular Ingredients

Referring to Table 5 and Figure 26, circular ingredient consumption has decreased by 3.7% (from 110.1 million tons in 2019 to 106.0 million tons in 2023); while non-circular ingredient consumption has increased by 7.6% (from 165.0 million tons in 2019 to 177.6 million tons in 2023). Circular ingredients comprised 37% of total feed consumption *without* harvest forages and roughages and non-circular ingredients made up 63% of the total feed consumption *without* harvest forages and roughages in 2023. In 2019, circular ingredients were about 40% of the total feed consumption *without* harvest forages and roughages, and non-circular ingredients were about 60% of the total feed consumption *without* harvest forages and roughages.

The composition of circular versus non-circular ingredient utilization varies by species, in general. For monogastric animal diets (poultry and hogs), lower volumes of circular ingredients were used in 2023 compared to 2019; for ruminant animal diets (dairy cattle, beef cattle, and sheep and goats), more volumes of circular ingredients were used in 2023 than in 2019.

Table 5. Circular Ingredient Consumption Comparison between 2019 and 2023 - Total Species

Year	Circular Ingredient Aggregation	Broilers	Layers	Turkeys	Hogs	Dairy Cattle	Beef Cattle	Horses	Sheep and Goats	Aquaculture	Total	
2023	Circular Ingredient ¹ (Tons)	22,260,195	5,743,849	3,638,544	17,348,414	24,600,362	27,177,147	4,054,722	649,714	504,093	105,977,041	
	Circular Ingredient (% of Species Total without Harvest Forages)	36%	32%	33%	28%	50%	35%	77%	52%	82%	37%	
	Non-Circular Ingredient ¹ (Tons)	39,241,328	11,934,962	7,281,627	43,532,485	24,140,389	49,552,624	1,204,564	595,923	96,490	177,580,392	
	Non-Circular Ingredient (% of Species Total without Harvest Forages)	64%	68%	67%	72%	50%	65%	23%	48%	16%	63%	
	Unique Ingredients from Aquaculture (Tons)										15,203	15,203
	U.S. Total without harvest forages (Tons)	61,501,523	17,678,811	10,920,171	60,880,899	48,740,751	76,729,771	5,259,287	1,245,637	615,787	283,572,636	
	U.S. Total (Tons)	61,501,523	17,678,811	10,920,171	60,880,899	182,980,995	207,832,115	6,371,597	2,157,116	615,787	550,939,013	
2019	Circular Ingredient ¹ (Tons)	24,066,361	6,152,730	4,738,238	21,649,631	24,254,946	23,397,410	5,322,441	23,495	476,352	110,081,604	
	Circular Ingredient (% of Species Total without Harvest Forages)	40%	32%	45%	35%	49%	36%	69%	17%	83%	40%	
	Non-Circular Ingredient ¹ (Tons)	36,724,326	13,079,649	5,836,004	40,194,182	25,574,079	41,083,160	2,335,748	115,288	94,192	165,036,629	
	Non-Circular Ingredient (% of Species Total without Harvest Forages)	60%	68%	55%	65%	51%	64%	31%	83%	17%	60%	
	Unique Ingredients from Aquaculture (Tons)										-	-
	U.S. Total without harvest forages (Tons)	60,790,688	19,232,380	10,574,242	61,843,813	49,829,024	64,480,569	7,658,189	138,783	570,545	275,118,233	
	U.S. Total (Tons)	60,790,688	19,232,380	10,574,242	61,843,813	206,918,734	195,018,422	7,658,189	138,783	570,545	562,745,795	

¹ Circular and Non-circular ingredients in this table do NOT include harvest forages and roughages (i.e., corn silage, alfalfa hay, other hay, legume silage, corn stalks, sorghum silage, and wheat straw)

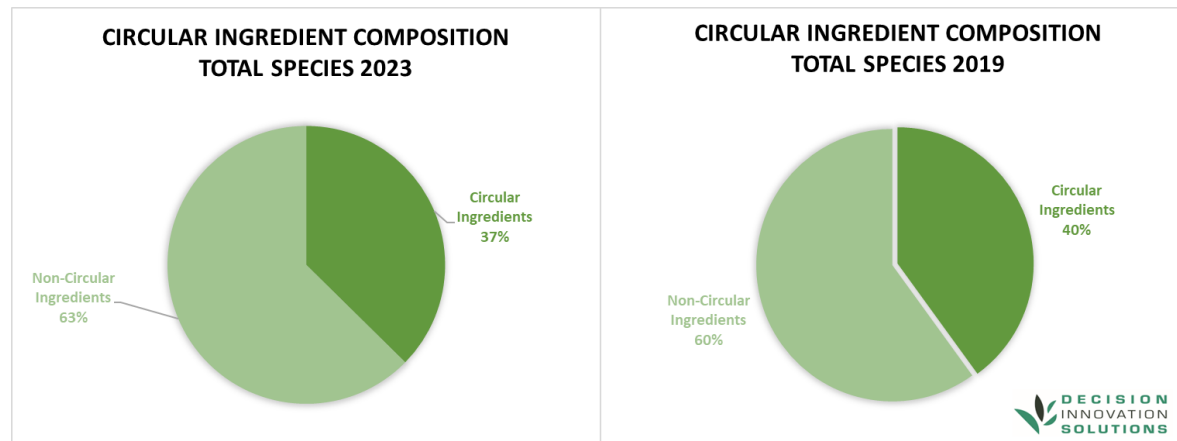


Figure 26. Circular Ingredient Composition Comparison between 2019 and 2023 - Total Species

4.1.2 Broilers

As shown in Figure 27, the total volume of feed consumed by U.S. broilers in 2023 equaled approximately 61.5 million tons. Approximately 61.5% of this amount came from corn-related ingredients, 29.9% of the diet came from soy-related ingredients, while 3.0% of broiler diets came from processed plant co-products. For the full table of ingredient quantities, see Appendix 6.4.2.

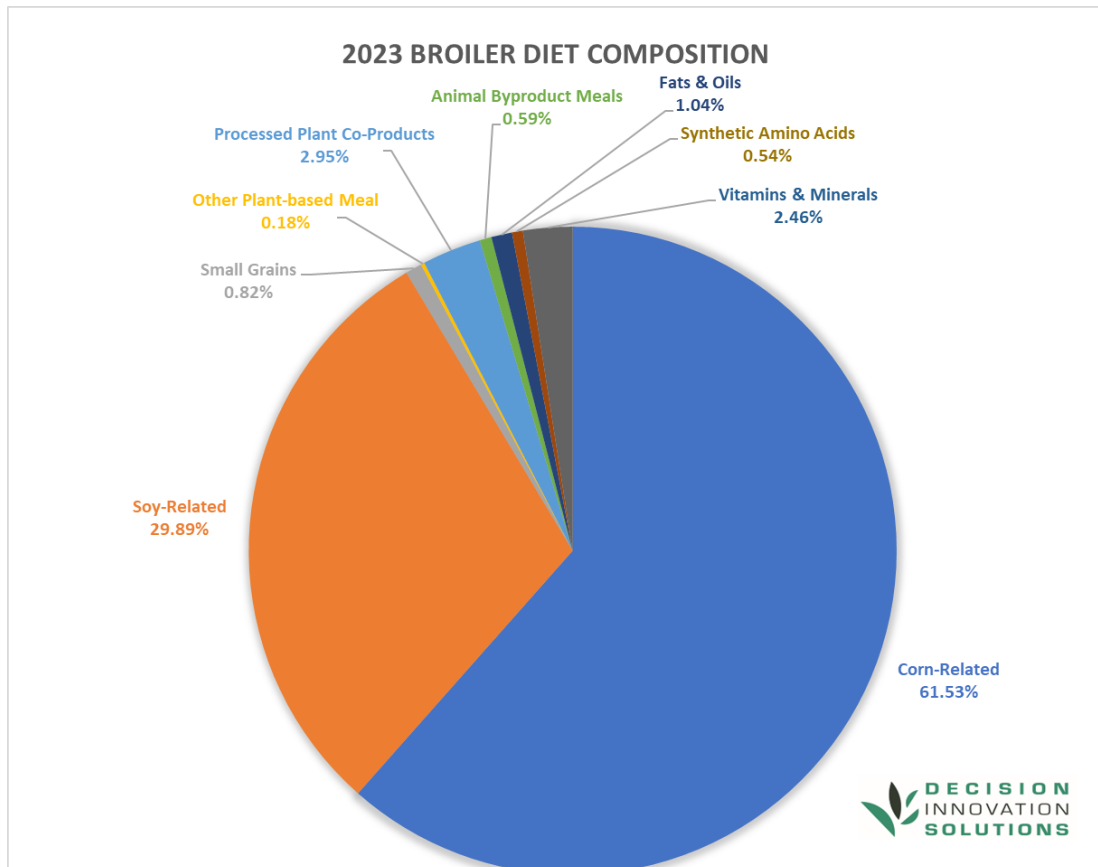


Figure 27. Estimated 2023 Broiler Diet Composition

The map in Figure 28 shows total feed tonnage fed to broilers breaks out by state. The top states are in the southeastern and southern states, including Georgia, Alabama, Arkansas, North Carolina and Texas, which combined fed about 35.0 million tons of feed to broilers in 2023.

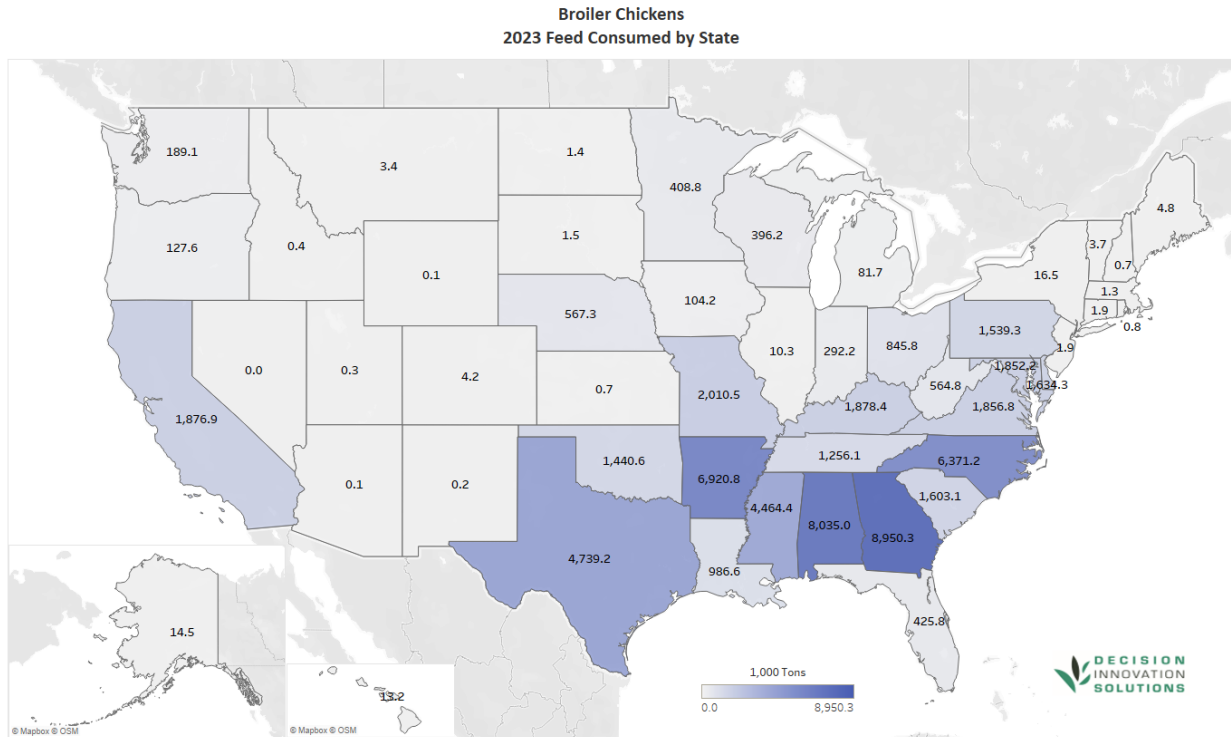


Figure 28. Estimated 2023 Feed Consumption (in 1,000 Tons) by State -- Broilers

4.1.2.1 Broiler Feed Consumption Comparison

Broiler feed consumption comparisons between 2019 and 2023 are shown in Figure 29 and Appendix 6.2. Broiler feed consumption increased by 1.2%, from 60.8 million tons to 61.5 million tons from 2019 to 2023. Total quantities (short tons) of ingredients (see Appendix 6.1 for aggregation scheme) fed in 2023 are corn-related (37.8 million short tons), soy-related (18.4 million short tons), small grain (0.5 million short tons), other plant-based meal (0.1 million short tons), processed plant co-products (1.8 million short tons), animal byproduct meals (0.4 million short tons), fats and oils (0.6 million short tons), synthetic amino acids (0.3 million short tons) and vitamins and minerals (1.5 million short tons), shown in

Table 6.

Table 6. Broiler Feed Consumption Comparison (2019 and 2023)

Ingredient	2023	2019	Percent Change
Corn-Related	37.8 million	37.0 million	2.3%
Soy-Related	18.4 million	17.0 million	8.1%
Small Grain	502,989	469,873	7.1%
Other Plant-Based Meal	111,850	1.5 million	(92.6%)
Processed Plant Co-Products	1.8 million	1.2 million	57.2%
Animal Byproduct Meals	363,098	1.0 million	(62.2%)
Fats and Oils	637,879	880,370	(27.7%)
Synthetic Amino Acids	333,145	327,388	1.8%
Vitamins and Minerals	1.51 million	1.49 million	1.9%

Other plant-based meal decreased by 92.6% mainly because of changes in cottonseed meal, after consultation with nutritionist, cottonseed meal was removed from all poultry diets, in this case broiler diets, after 2020. Processed plant co-products increased by 57.2% due to ration change or new added ingredients on wheat middlings, wheat flour, miscellaneous byproduct feeds, and molasses. Animal byproduct meals decreased by 62.2% because of lower utilizations on meat and bone meal, meat meal, and bloodmeal. Some of the animal byproduct meals were replaced by soybean meal.

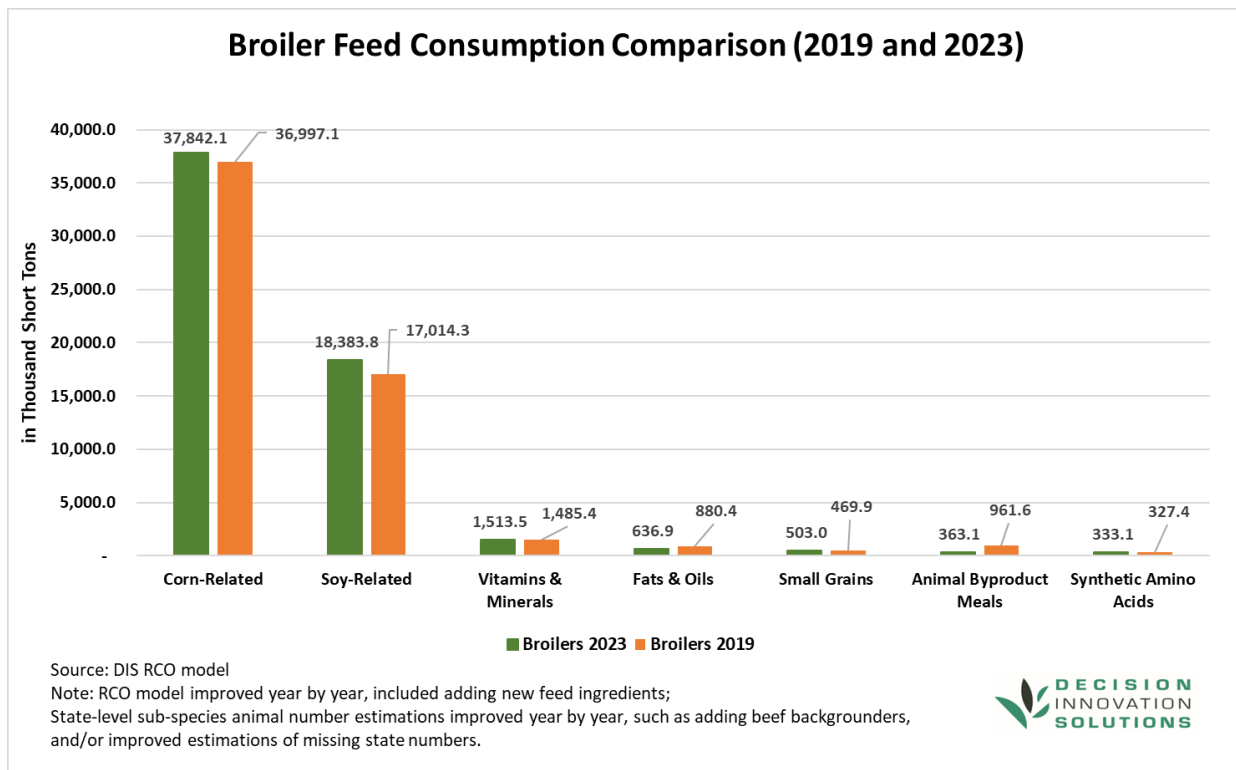


Figure 29. Broiler Feed Consumption Comparison (2019 and 2023)

Figure 30 and Table 5 show the circular ingredient consumption comparison between 2019 and 2023 for broilers. In 2019, the composition of circular versus non-circular ingredient utilization was 40% and 60%, respectively, while in 2023, the composition of circular ingredients utilization was 36% and 40% for non-circular ingredients. The decreasing trend of using circular ingredients from 2019 to 2023, was because of the significant reduction of other plant-based meals and animal byproduct meals usages in broiler diets.

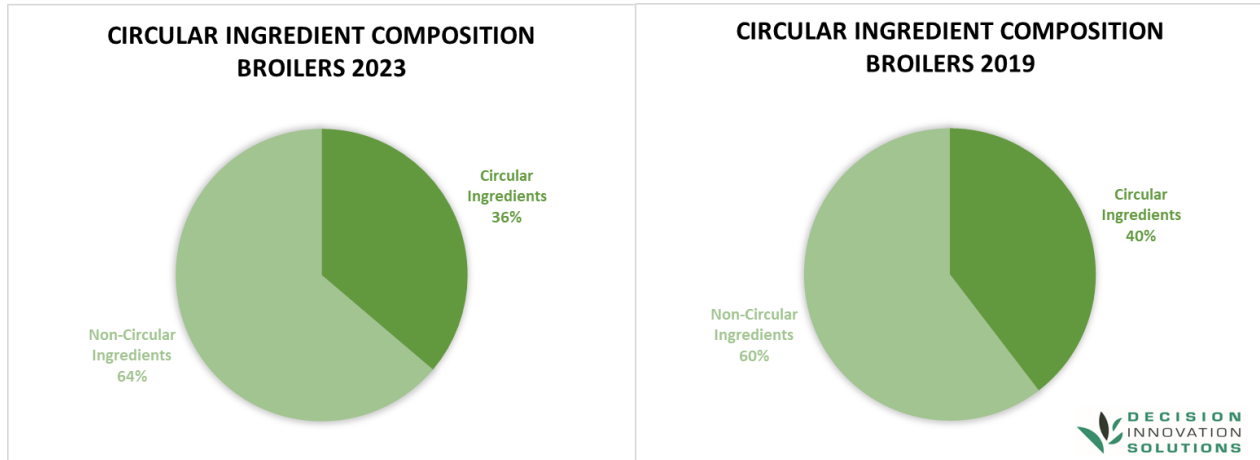


Figure 30. Circular Ingredient Composition Comparison between 2019 and 2023 -- Broilers

4.1.3 Layers

As shown in Figure 31, the total amount of feed fed to U.S. layers in 2023 equaled approximately 17.7 million tons. Nearly 61.2% of this amount came from corn-related ingredients. Other commodity groups comprising at least 1% of tonnage fed to layers include 19.6% of soy-related ingredients, 11.0% of vitamins and minerals, and 6.6% of processed plant co-products. For the full table of ingredient quantities, see Appendix 6.4.3.

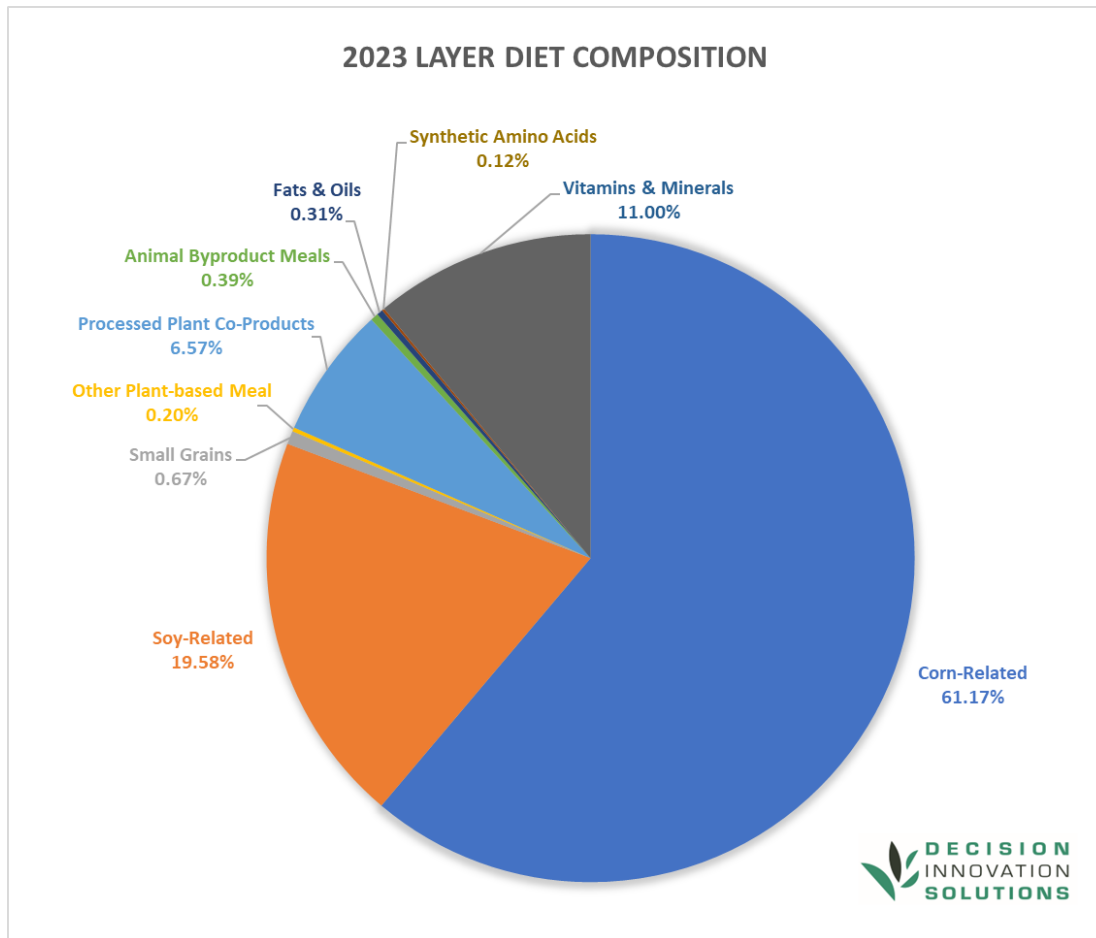


Figure 31. Estimated 2023 Layer Diet Composition

The map in Figure 32 shows how the total feed tonnage fed to egg-laying hens is broken out by state. The top states are in the midwestern United States and include Iowa, Ohio, Indiana, Pennsylvania and Texas, which combined fed about 7.8 million tons of feed to egg-laying hens in 2023.

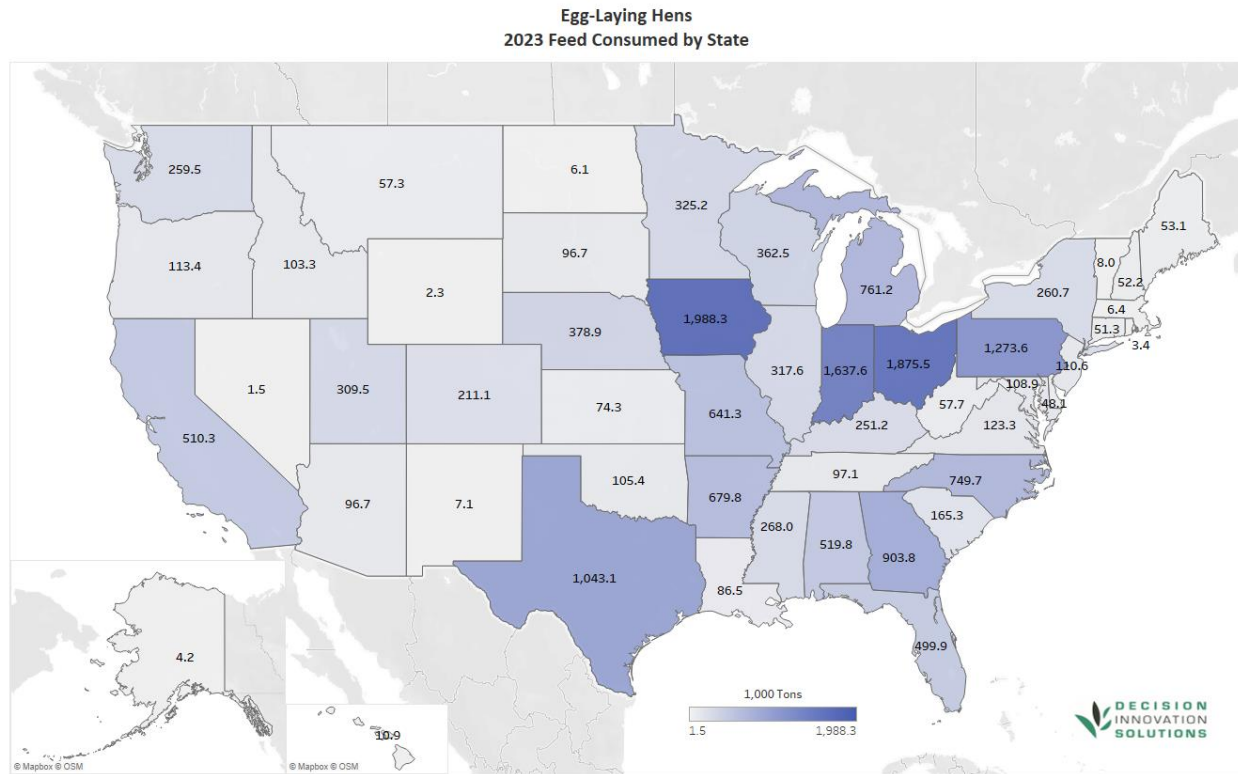


Figure 32. Estimated 2023 Feed Consumption (in 1,000 Tons) by State -- Layers

4.1.3.1 Layer Feed Consumption Comparison

Layer feed consumption comparisons between 2019 and 2023 are shown in Figure 33 and Appendix 6.2. Layer feed consumption decreased by 8.1%, from 19.2 million tons to 17.7 million tons from 2019 to 2023. Total quantities (short tons) of ingredients (see Appendix 6.1 for aggregation scheme) fed in 2023 are corn-related (10.8 million short tons), soy-related (3.5 million short tons), small grain (0.1 million short tons), other plant-based meal (34.8 thousand short tons), processed plant co-products (1.2 million short tons), animal byproduct meals (69.4 thousand short tons), fats and oils (54.0 thousand short tons), synthetic amino acids (22.0 thousand short tons) and vitamins and minerals (1.9 million short tons), shown in Table 7.

Table 7. Layer Feed Consumption Comparison (2019 and 2023)

Ingredient	2023	2019	Percent Change
Corn-Related	10.8 million	12.5 million	(13.3%)
Soy-Related	3.5 million	3.1 million	12.9%
Small Grain	117,619	1,611	----
Other Plant-Based Meal	34,809	189,152	(81.6%)
Processed Plant Co-Products	1.2 million	1.0 million	17.7%
Animal Byproduct Meals	69,376	269,102	(74.2%)
Fats and Oils	54,012	144,485	(62.6%)
Synthetic Amino Acids	21,965	21,356	2.9%
Vitamins and Minerals	1.9 million	2.1 million	(6.2%)

Other plant-based meal decreased by 81.6% mainly because of changes in cottonseed meal, after consultation with nutritionist, cottonseed meal was removed from all poultry diets, in this case layer diets, after 2020. Animal byproduct meals decreased by 74.2% mainly due to ration change on meat and bone meal, which was replaced by soybean meal. Fats and oils decreased by 62.6% mainly from soybean oil. This could result from multiple factors, including increases in biofuels and renewable fuels production, increased export of products, and steep price increases in fats and oils prices, etc.

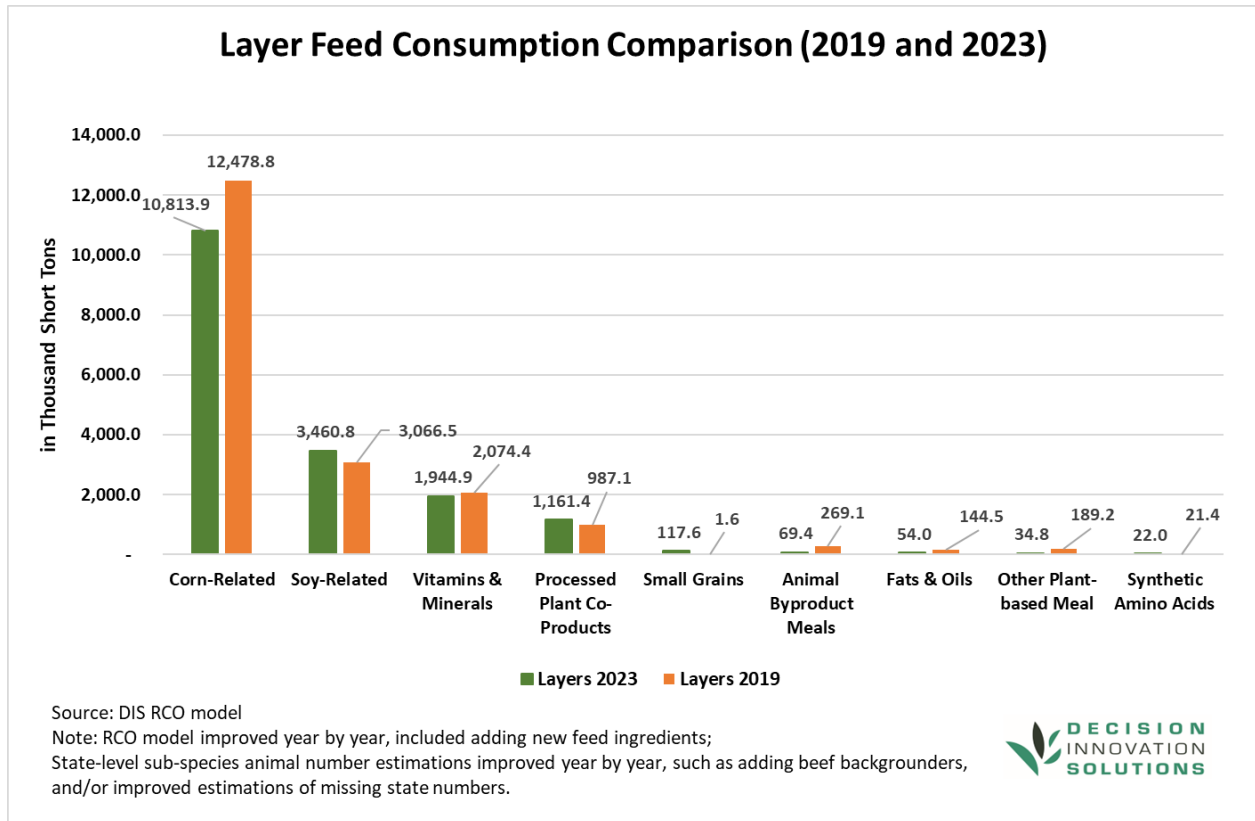


Figure 33. Layer Feed Consumption Comparison (2019 and 2023)

Figure 34 and Table 5 show the circular ingredient consumption comparison between 2019 and 2023 for layers. In both 2019 and 2023, the composition of circular versus non-circular ingredient utilization was 32% and 68%.

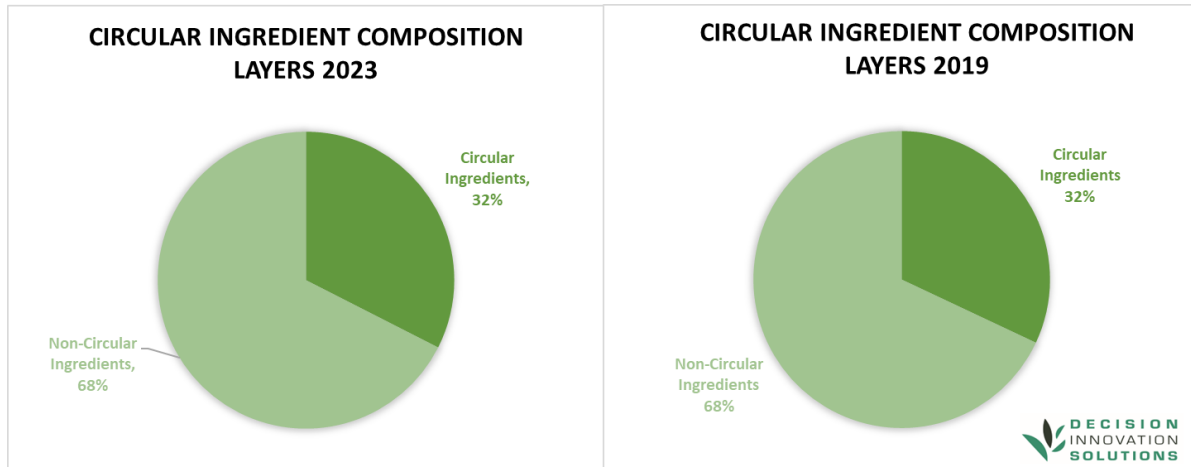


Figure 34. Circular Ingredient Composition Comparison between 2019 and 2023 -- Layers

4.1.4 Turkeys

As shown in Figure 35, the total amount of feed fed to U.S. turkeys in 2023 equaled approximately 10.9 million tons. About 67.8% of this amount came from corn-related ingredients. Other commodity groups comprising at least 1% of tonnage fed to turkeys include 22.9% of soy-related ingredients, 2.9% of animal byproduct meals, 2.8% of processed plant co-products, and 2.1% of fats and oils. For the full table of ingredient quantities, see Appendix 6.4.4.

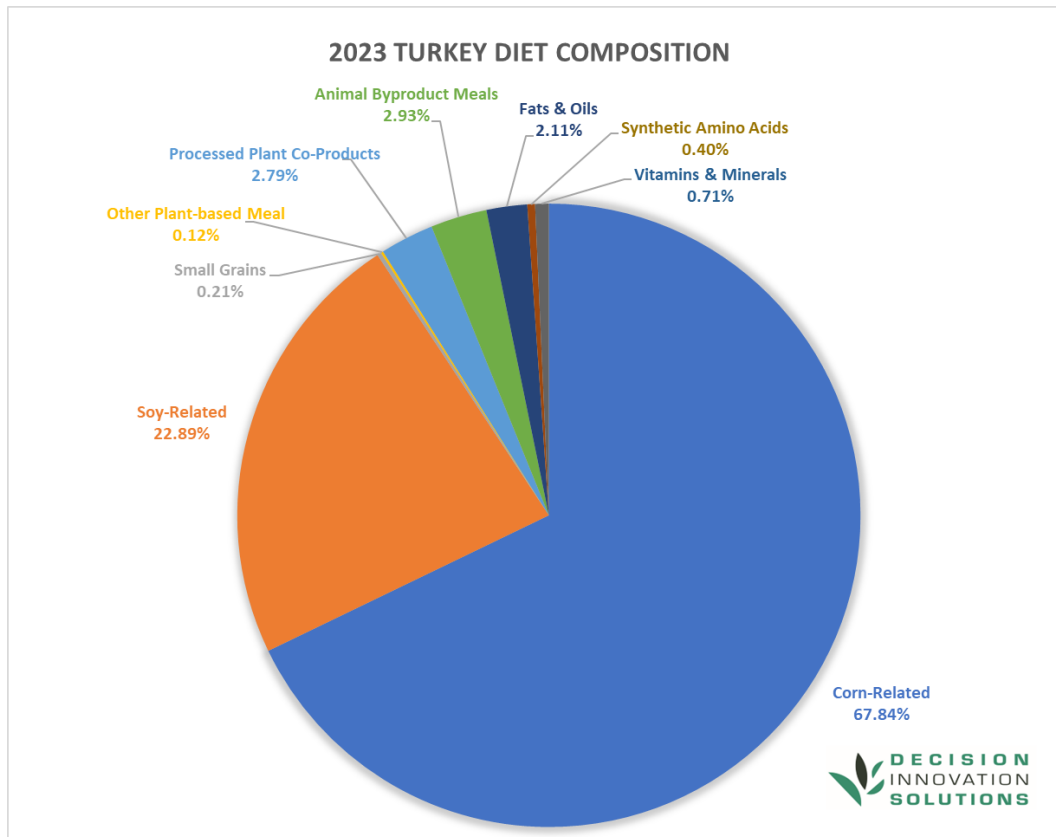


Figure 35. Estimated 2023 Turkey Diet Composition

The map in Figure 36 shows how the total feed tonnage fed to turkeys is broken out by state. The top states are in the midwestern and southeastern United States and include Minnesota, North Carolina, Arkansas, Indiana and Missouri, which combined fed about 6.6 million tons of feed to turkeys in 2023.

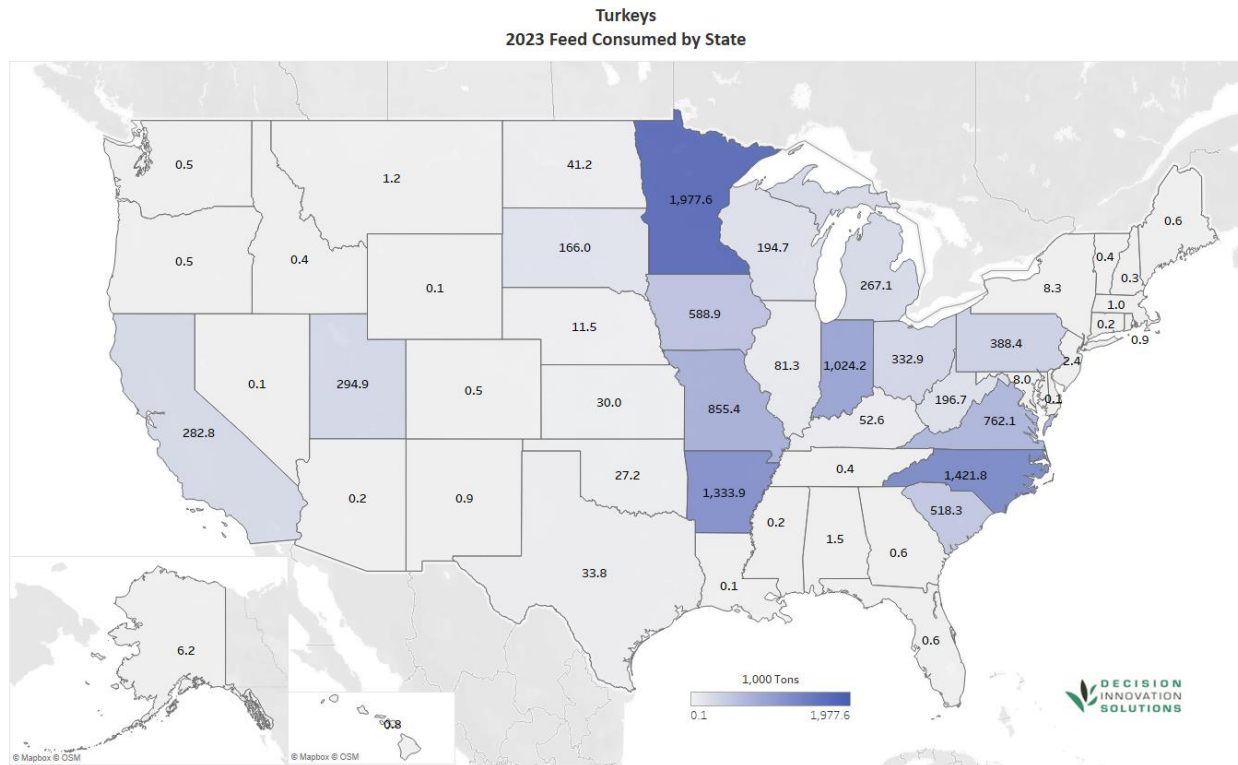


Figure 36. Estimated 2023 Feed Consumption (in 1,000 Tons) by State -- Turkeys

4.1.4.1 Turkey Feed Consumption Comparison

Turkey feed consumption comparisons between 2019 and 2023 are shown in Figure 37 and Appendix 6.2. Turkey feed consumption increased by 3.3%, from 10.6 million tons to 10.9 million tons from 2019 to 2023. Total quantities (short tons) of ingredients (see Appendix 6.1 for aggregation scheme) fed in 2023 are corn-related (7.4 million short tons), soy-related (2.5 million short tons), small grain (22.8 thousand short tons), other plant-based meal (13.5 thousand short tons), processed plant co-products (0.3 million short tons), animal byproduct meals (0.3 million short tons), fats and oils (0.2 million short tons), synthetic amino acids (43.6 thousand short tons) and vitamins and minerals (77.5 thousand short tons), shown in Table 8.

Table 8. Turkey Feed Consumption Comparison (2019 and 2023)

Ingredient	2023	2019	Percent Change
Corn-Related	7.4 million	6.0 million	23.0%
Soy-Related	2.5 million	3.3 million	(23.9%)
Small Grain	22,815	18	---
Other Plant-Based Meal	13,452	8,535	57.6
Processed Plant Co-Products	304,835	39,197	677.7%
Animal Byproduct Meals	319,525	1.0 million	(66.5%)
Fats and Oils	230,600	147,586	56.3%
Synthetic Amino Acids	43,565	43,944	(0.9%)
Vitamins and Minerals	77,469	73,918	4.8%

Processed plant co-products increased by 677.7% due to ration change on wheat middlings and miscellaneous byproduct feeds, and a new added ingredient, molasses. Animal byproduct meals decreased by 66.5% because of lower utilizations on meat and bone meal, which was replaced by plant based meals and/or processed plant co-products. Fats and oils increased by 56.3% mainly due to the new added fats and oils ingredients¹⁴, also, lower inclusion rates on animal byproduct meals and miscellaneous byproduct feeds leads fat requirement unsatisfied in turkey diets, so slightly higher fats and oils inclusion rates were adjusted by the RCO model.

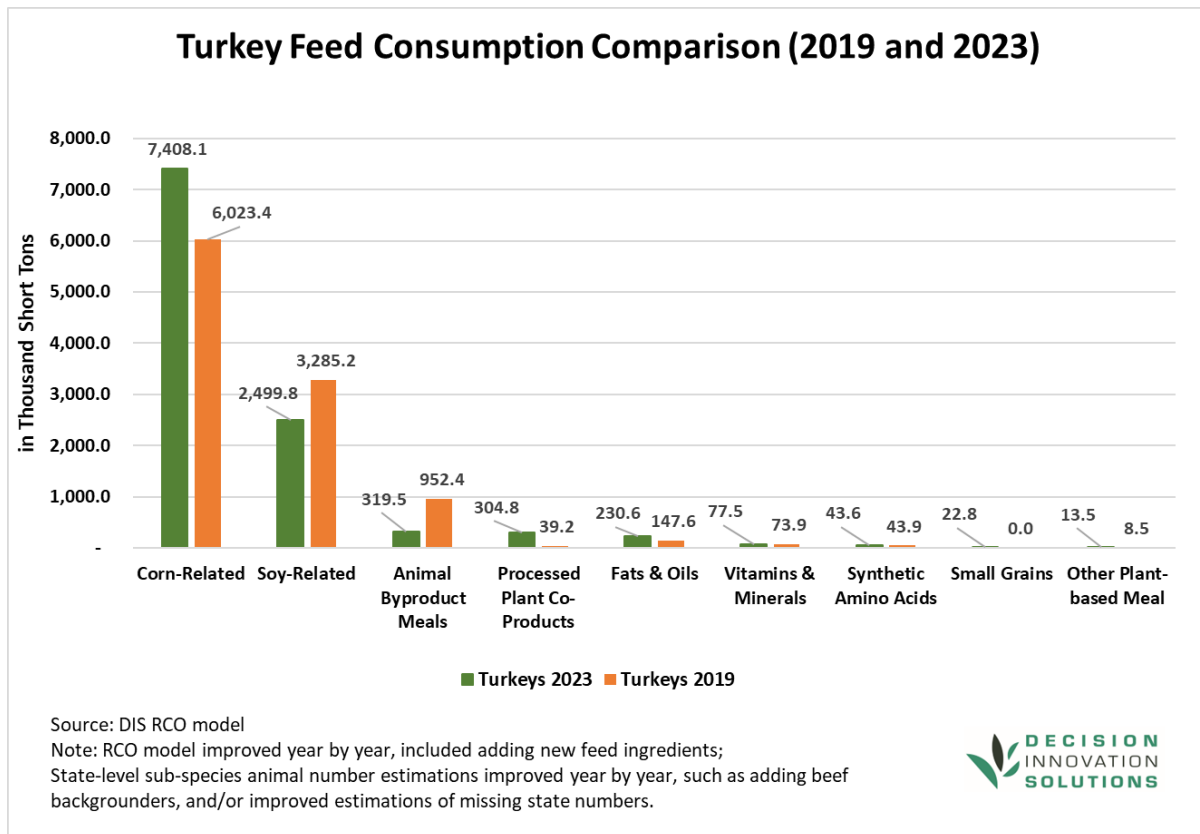


Figure 37. Turkey Feed Consumption Comparison (2019 and 2023)

Figure 38 and Table 5 show the circular ingredient consumption comparison between 2019 and 2023 for turkeys. In 2019, the composition of circular versus non-circular ingredient utilization was 45% and 55%, respectively; while in 2023, the composition of circular ingredients utilization was 33%, and 67% for non-circular ingredients. The decreasing trend of using circular ingredients from 2019 to 2023 was because of the significant decrease in animal byproduct meal's usage in turkey diets.

¹⁴ Full list of new added feed ingredients is in Appendix 6.

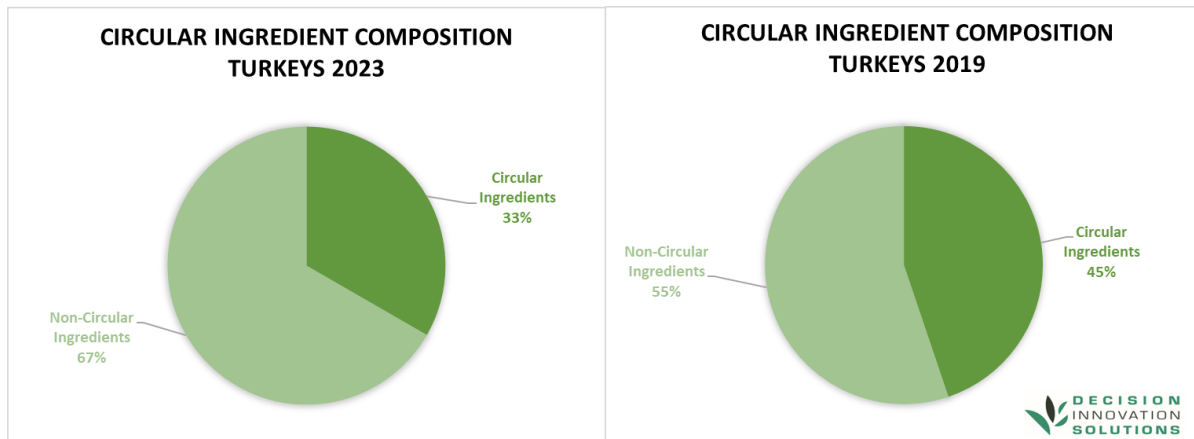


Figure 38. Circular Ingredient Composition Comparison between 2019 and 2023 -- Turkeys

4.1.5 Hogs

As shown in Figure 39, the total amount of feed fed to U.S. hogs in 2023 equaled approximately 60.9 million tons. More than 77.8% of this amount came from corn-related ingredients. Other commodity groups comprising at least 1% of tonnage fed to hogs include 10.8% of soy-related ingredients, 5.2% of processed plant co-products, 2.8% of small grains, and 1.8% of vitamins and minerals. For the full table of ingredient quantities, see Appendix 6.4.5.

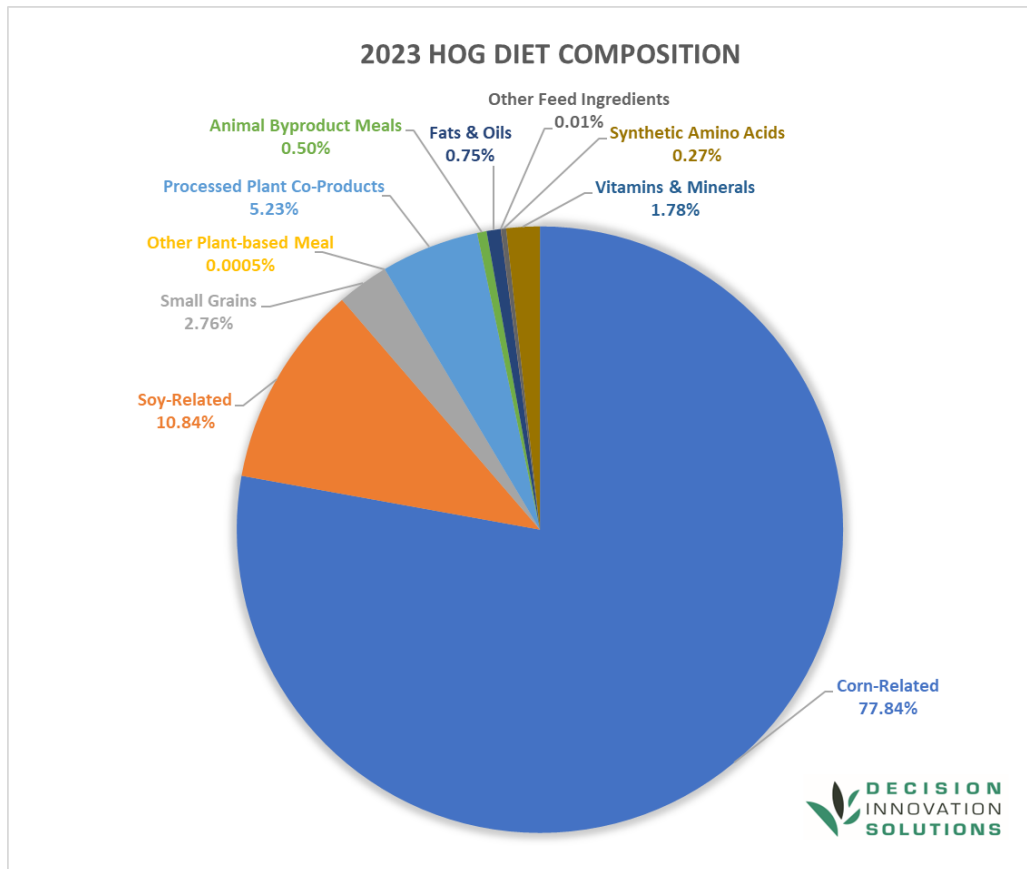


Figure 39. Estimated 2023 Hog Diet Composition

The map in Figure 40 shows how the total feed tonnage fed to hogs is broken out by state. The top states include Iowa, Minnesota, North Carolina, Illinois and Indiana, which combined fed about 41.2 million tons of feed to hogs in 2023.

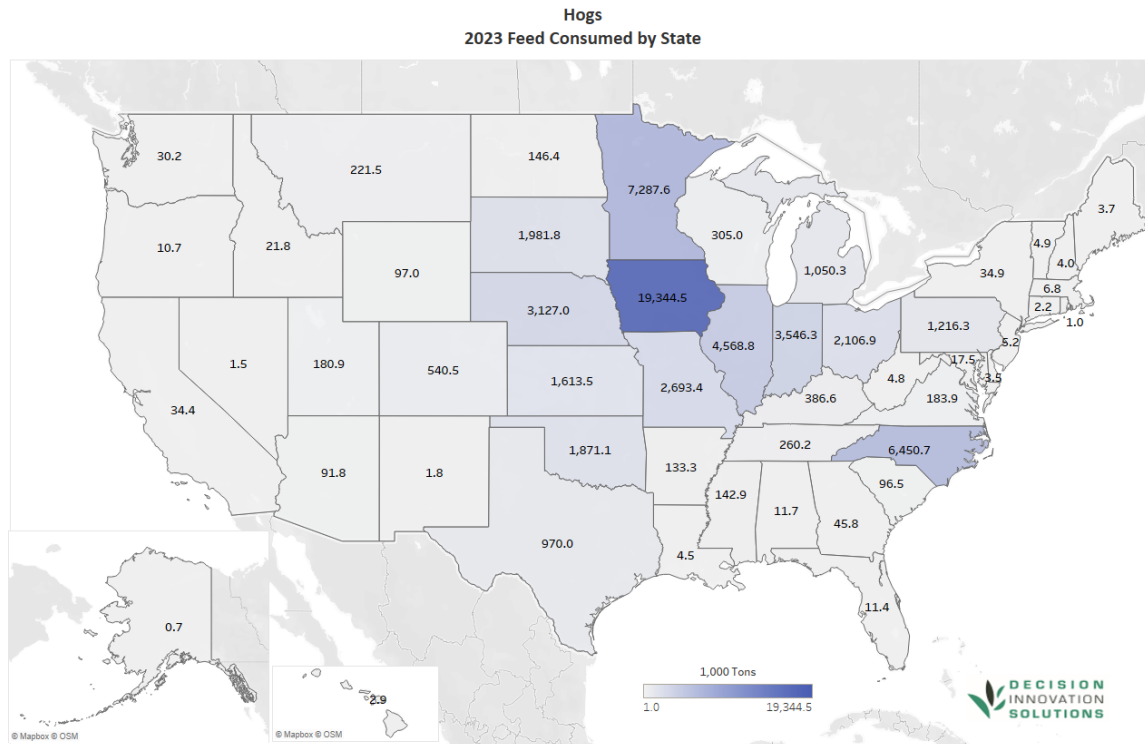


Figure 40. Estimated 2023 Feed Consumption (in 1,000 Tons) by State -- Hogs

4.1.5.1 Hog Feed Consumption Comparison

Hog feed consumption comparisons between 2019 and 2023 are shown in Figure 41 and Appendix 6.2. Hog feed consumption decreased by 1.6%, from 61.8 million tons to 60.9 million tons from 2019 to 2023. Total quantities (short tons) of ingredients (see Appendix 6.1 for aggregation scheme) fed in 2023 are corn-related (47.4 million short tons), soy-related (6.6 million short tons), small grain (1.7 million short tons), other plant-based meal (315 short tons), processed plant co-products (3.2 million short tons), animal byproduct meals (0.3 million short tons), fats and oils (0.5 million short tons), synthetic amino acids (0.2 million short tons) and vitamins and minerals (1.1 million short tons), shown in Table 9.

Table 9. Hog Feed Consumption Comparison (2019 and 2023)

Ingredient	2023	2019	Percent Change
Corn-Related	47.4 million	45.1 million	5.1%
Soy-Related	6.6 million	7.3 million	(9.3%)
Small Grain	1.7 million	1.6 million	4.2%
Other Plant-Based Meal	315	223,170	(99.9%)
Processed Plant Co-Products	3.2 million	3.5 million	(10.2%)
Animal Byproduct Meals	305,260	1.4 million	(77.6%)
Fats and Oils	457,223	1.4 million	(68.4%)
Synthetic Amino Acids	166,003	164,156	1.1%
Vitamins and Minerals	1.08 million	1.12 million	(3.1%)

Other plant-based meal decreased by 99.9% mainly because of changes in cottonseed meal, after consultation with nutritionist, cottonseed meal was removed from hog diets after 2020, also inclusion rate of canola meal was down in 2023 hog diets compared to 2019 hog diets. Animal byproduct meals decreased by 77.6% mainly due to ration change on meat and bone meal, meat meal, and bloodmeal. Fats and oils decreased by 68.4% mainly from soybean oil and choice white grease. This could result from multiple factors, including increases in biofuels and renewable fuels production, increased export of products, and steep price increases in fats and oils prices, etc.

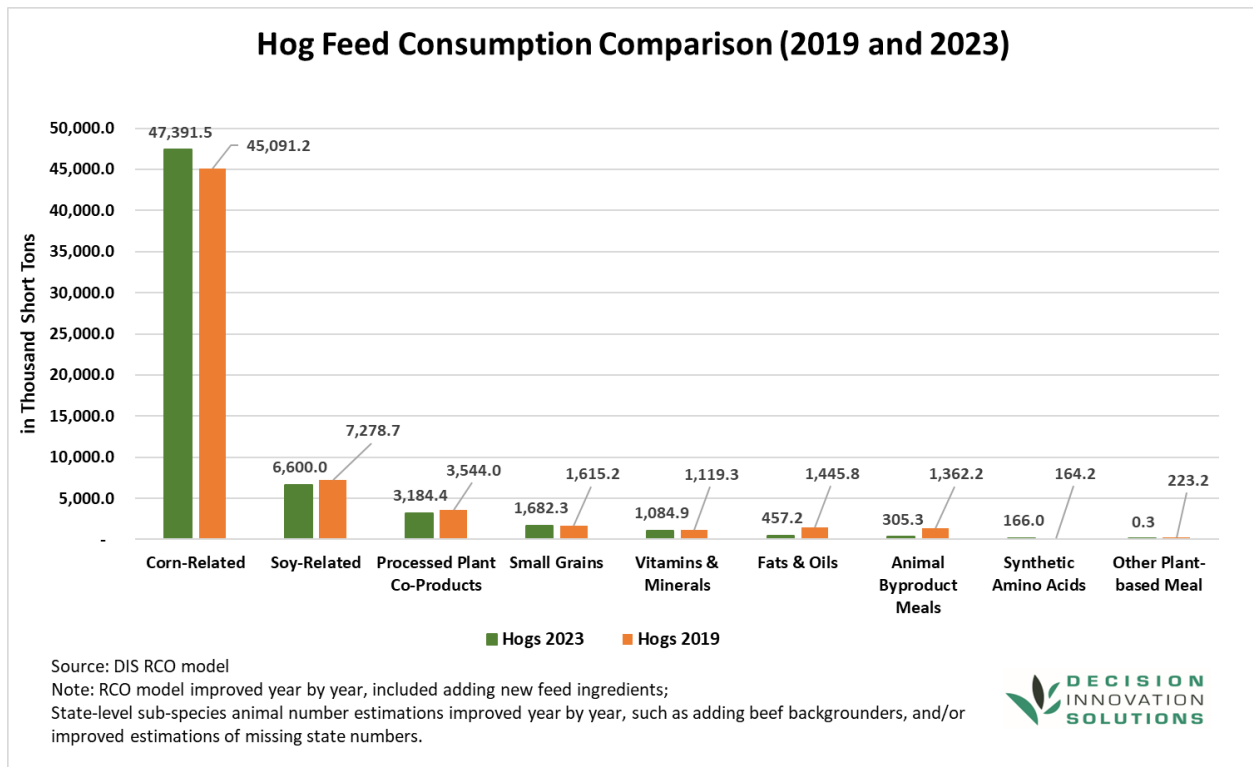


Figure 41. Hog Feed Consumption Comparison (2019 and 2023)

Figure 42 and Table 5 show the circular ingredient consumption comparison between 2019 and 2023 for hogs. In 2019, the composition of circular versus non-circular ingredient utilization was 35% and 65%, respectively; while in 2023, the composition of circular ingredients utilization was 28%, and 72% for non-circular ingredients. The decreasing trend of using circular ingredients from 2019 to 2023 was because of the significant decrease in the use of other plant-based meals, processed plant co-products, and animal byproduct meals usage in hog diets.

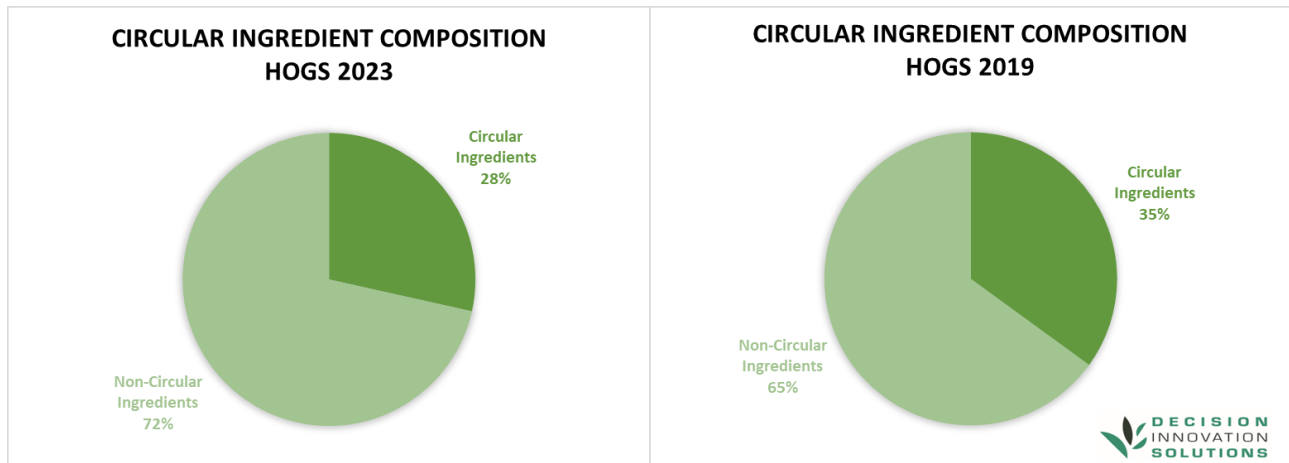


Figure 42. Circular Ingredient Composition Comparison between 2019 and 2023 -- Hogs

4.1.6 Dairy Cattle

As shown in Figure 43, the total amount of feed fed to U.S. dairy cattle in 2023 equaled approximately 183.0 million tons. The total amount of feed (without harvested forages and roughages) fed to dairy cattle was approximately 48.0 million tons. About 52.5% of this amount came from corn-related ingredients. Other commodity groups comprising at least 1% of tonnage fed to dairy cattle include 14.2% of soy-related ingredients, 12.7% of other plant-based meals, 4.9% of processed plant co-products, 4.8% of animal byproduct meals, 4.4% of fats and oils, 4.1% of vitamins and minerals, and 1.8% of other feed ingredients. For the full table of ingredient quantities, see Appendix 6.4.6.

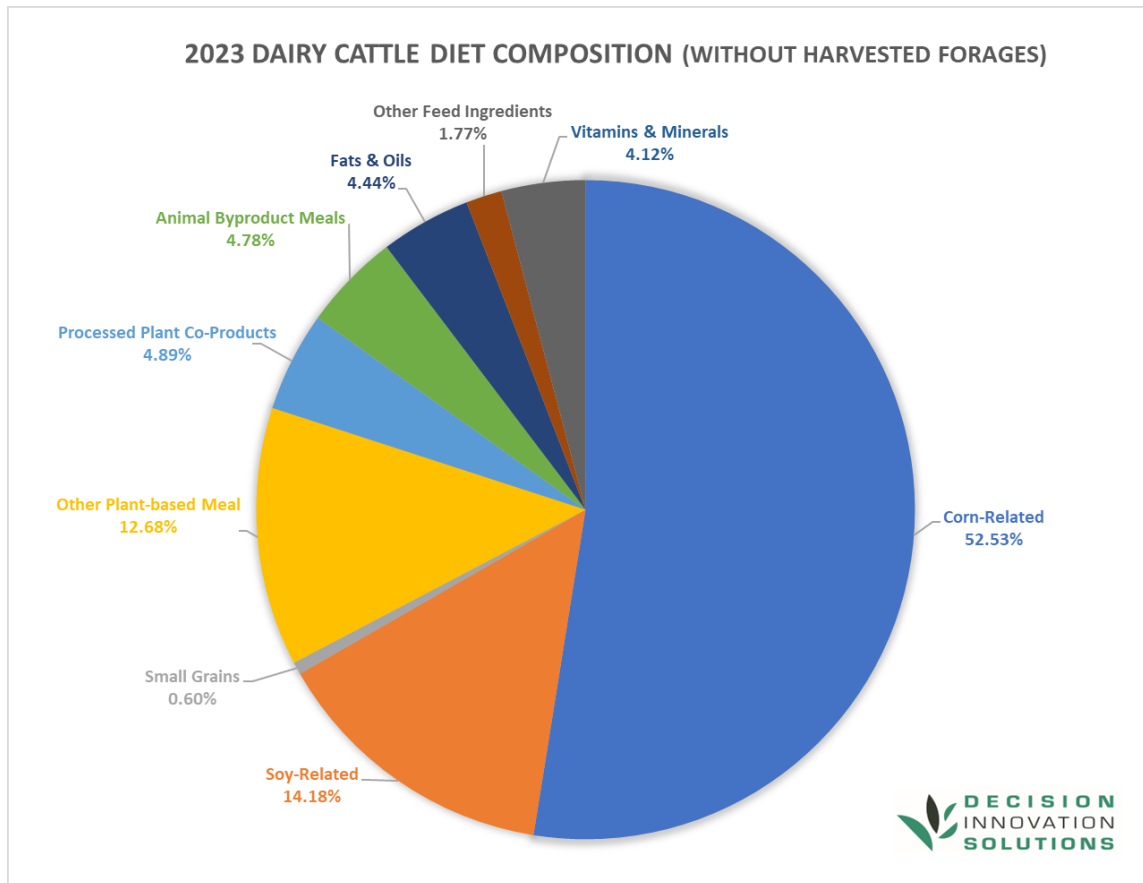


Figure 43. Estimated 2023 Dairy Cattle Diet Composition

The map in Figure 44 shows how the total feed tonnage fed to dairy cattle is broken out by state. The top states include California, Wisconsin, New York, Texas, and Idaho, which combined fed about 95.3 million tons of feed to dairy cattle in 2023.

The map in Figure 45 shows how the total feed tonnage (without harvested forages) fed to dairy cattle is broken out by state. The top states include California, Wisconsin, Texas, New York, and Idaho, which combined fed about 24.8 million tons of feed to dairy cattle in 2023.

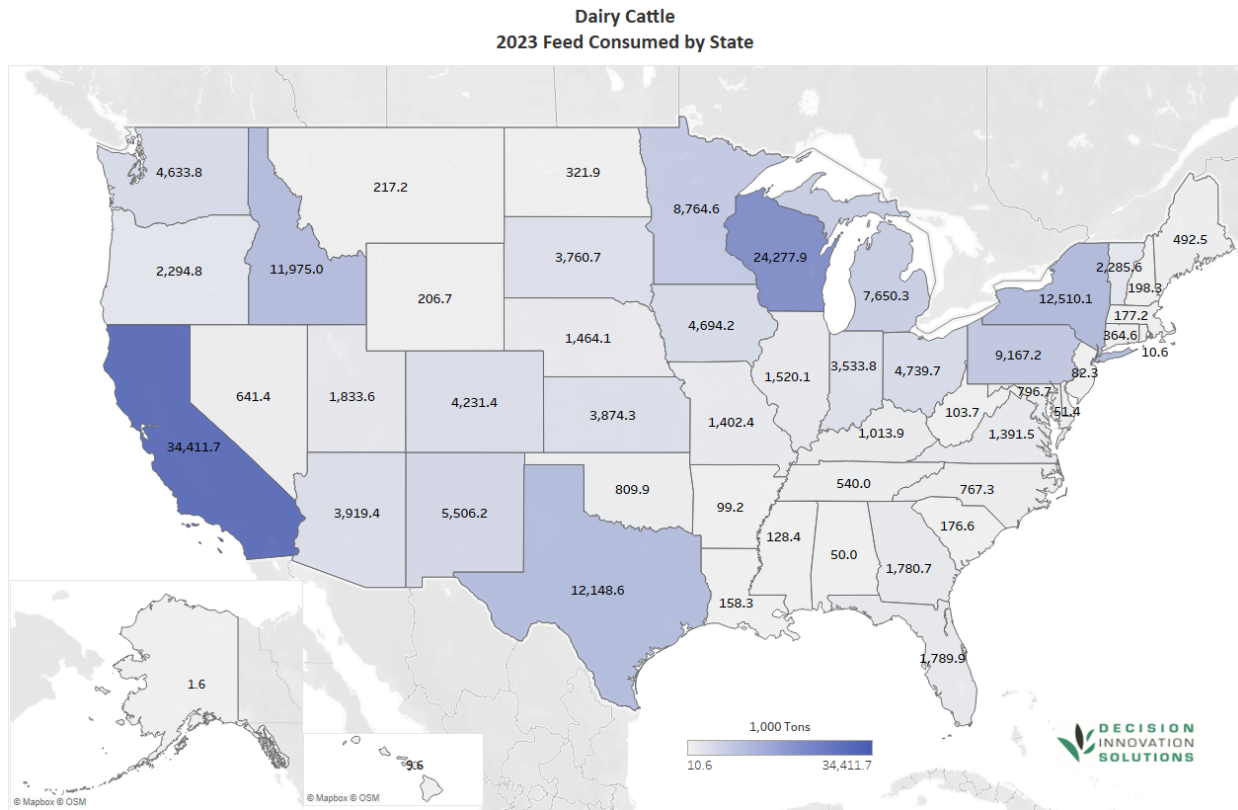


Figure 44. Estimated 2023 Feed Consumption (in 1,000 Tons) by State -- Dairy Cattle

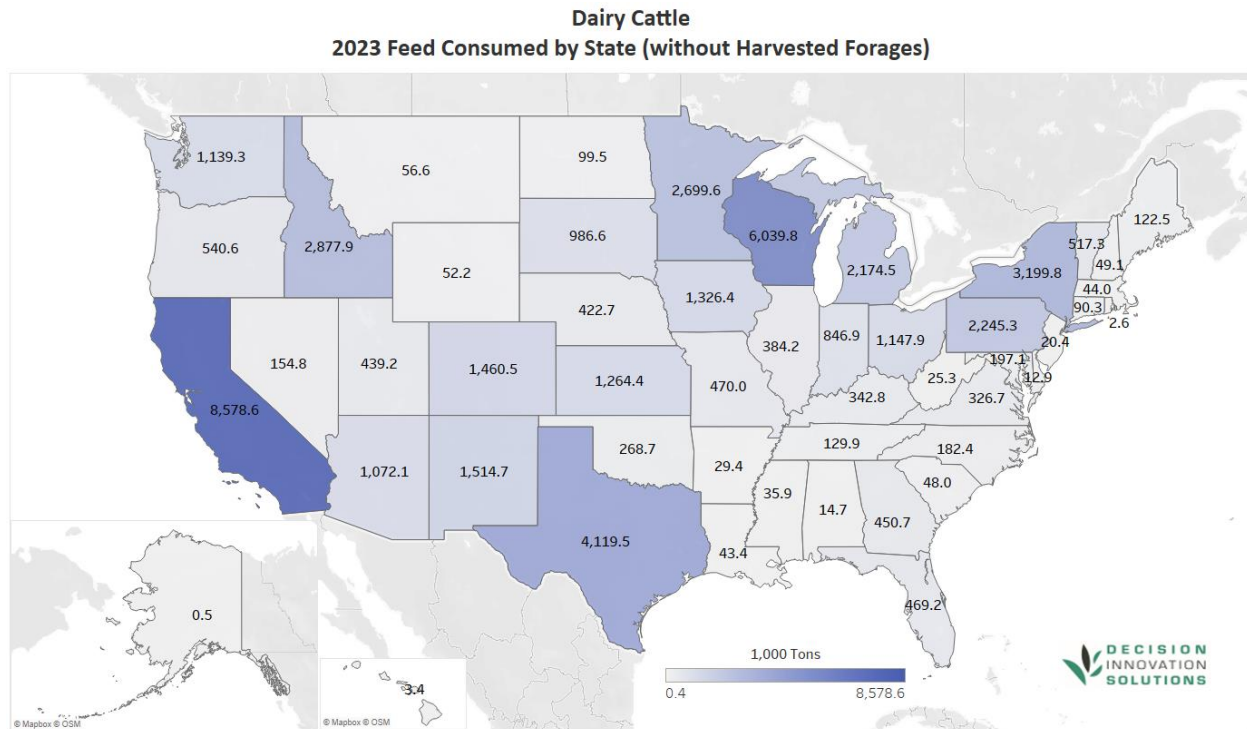


Figure 45. Estimated 2023 Feed Consumption without Harvested Forages and Roughages (in 1,000 Tons) by State -- Dairy Cattle

4.1.6.1 Dairy Cattle Feed Consumption Comparison

Dairy cattle feed consumption comparisons between 2019 and 2023 are shown in Figure 46 and Appendix 6.2. Dairy cattle feed consumption decreased by 11.6%, from 206.9 million tons to 183.0 million tons from 2019 to 2023. Total quantities (short tons) of ingredients (see Appendix 6.1 for aggregation scheme) fed in 2023 are corn-related (25.6 million short tons), soy-related (6.9 million short tons), small grain (0.3 million short tons), other plant-based meal (6.2 million short tons), processed plant co-products (2.4 million short tons), animal byproduct meals (2.3 million short tons), fats and oils (2.2 million short tons), harvested forage and roughage (134.2 million short tons) and vitamins and minerals (2.0 million short tons), shown in Table 10.

Table 10. Dairy Cattle Feed Consumption Comparison (2019 and 2023)

Ingredient	2023	2019	Percent Change
Corn-Related	25.6 million	28.2 million	(9.1%)
Soy-Related	6.9 million	7.6 million	(8.6%)
Small Grain	294,669	----	----
Other Plant-Based Meal	6.2 million	4.1 million	51.4%
Processed Plant Co-Products	2.4 million	2.6 million	(9.2%)
Animal Byproduct Meals	2.3 million	2.0 million	17.9%
Fats and Oils	2.2 million	3.4 million	(35.7%)
Harvested Forage and Roughage	134.2 million	157.1 million	(14.6%)
Vitamins and Minerals	2.00 million	2.04 million	(1.8%)

Other plant-based meal increased by 51.4% mainly because of increasing on canola meal utilization. Fats and oils decreased by 35.7% mainly from soybean oil and inedible tallow. This could result from multiple factors, including increases in biofuels and renewable fuels production, increased export of products, and steep price increases in fats and oils prices, etc.

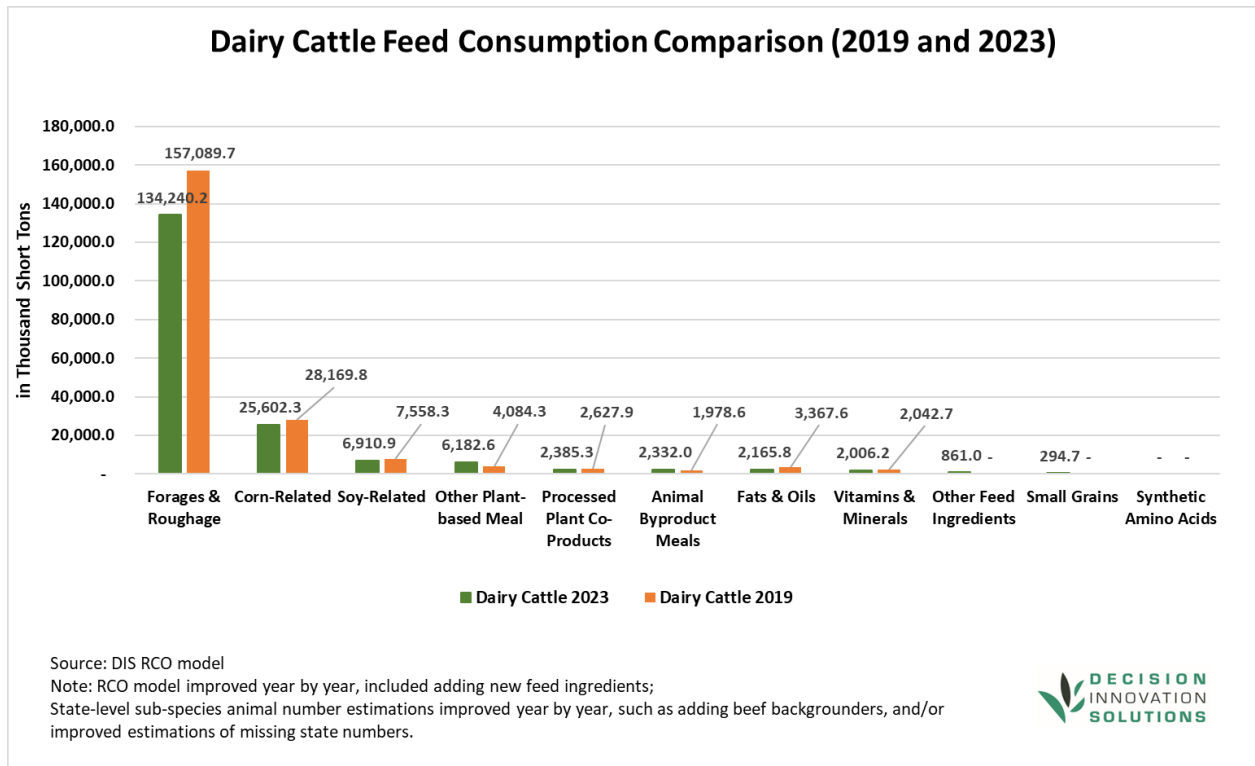


Figure 46. Dairy Cattle Feed Consumption Comparison (2019 and 2023)

Figure 47 and Table 5 show the circular ingredient consumption comparison between 2019 and 2023 for dairy cattle. In 2019, the composition of circular versus non-circular ingredient utilization was 49% and 51%, respectively; while in 2023, the composition of circular ingredients utilization was 50% and 50% for non-circular ingredients. The increasing trend of using circular ingredients from 2019 to 2023 was because of the significant increase in other plant-based meals, processed plant co-products, and animal byproduct meals usage in dairy cattle diets.

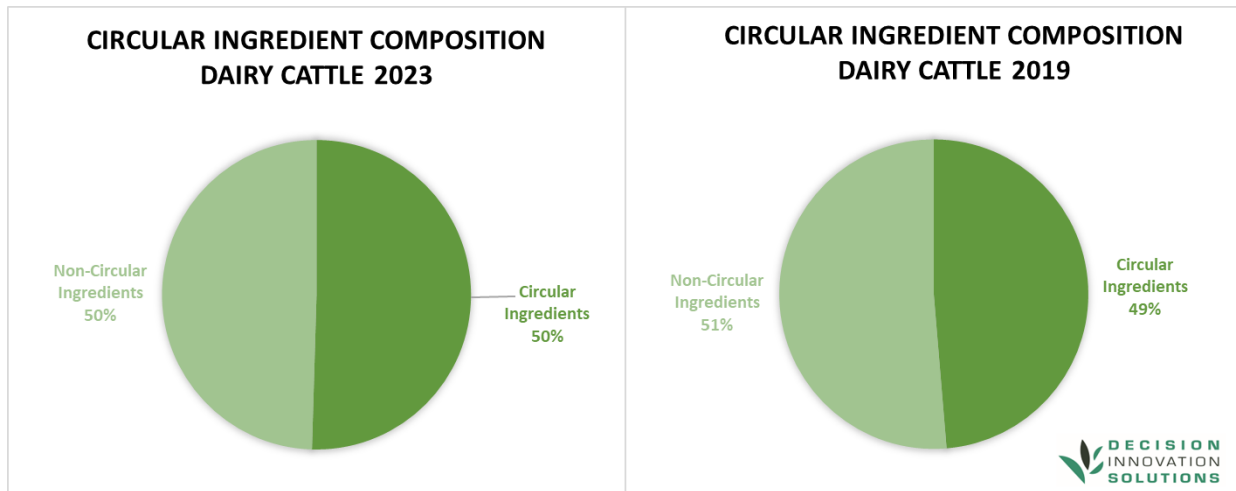


Figure 47. Circular Ingredient Composition Comparison between 2019 and 2023 -- Dairy Cattle

4.1.7 Beef Cattle

As shown in Figure 48, the total amount of feed fed to U.S. beef cattle in 2023 equaled approximately 207.8 million tons. The total amount of feed (without harvested forages and roughages) fed to beef cattle was approximately 75.8 million tons. Nearly 90% of this amount came from corn-related ingredients. Other commodity groups comprising at least 1% of tonnage fed to beef cattle include 4.1% of processed plant co-products, 2.7% of vitamins and minerals, 2.3% of other plant-based meals, 1.4% of soy-related ingredients, and 1.2% of small grains. For the full table of ingredient quantities, see Appendix 6.4.7.

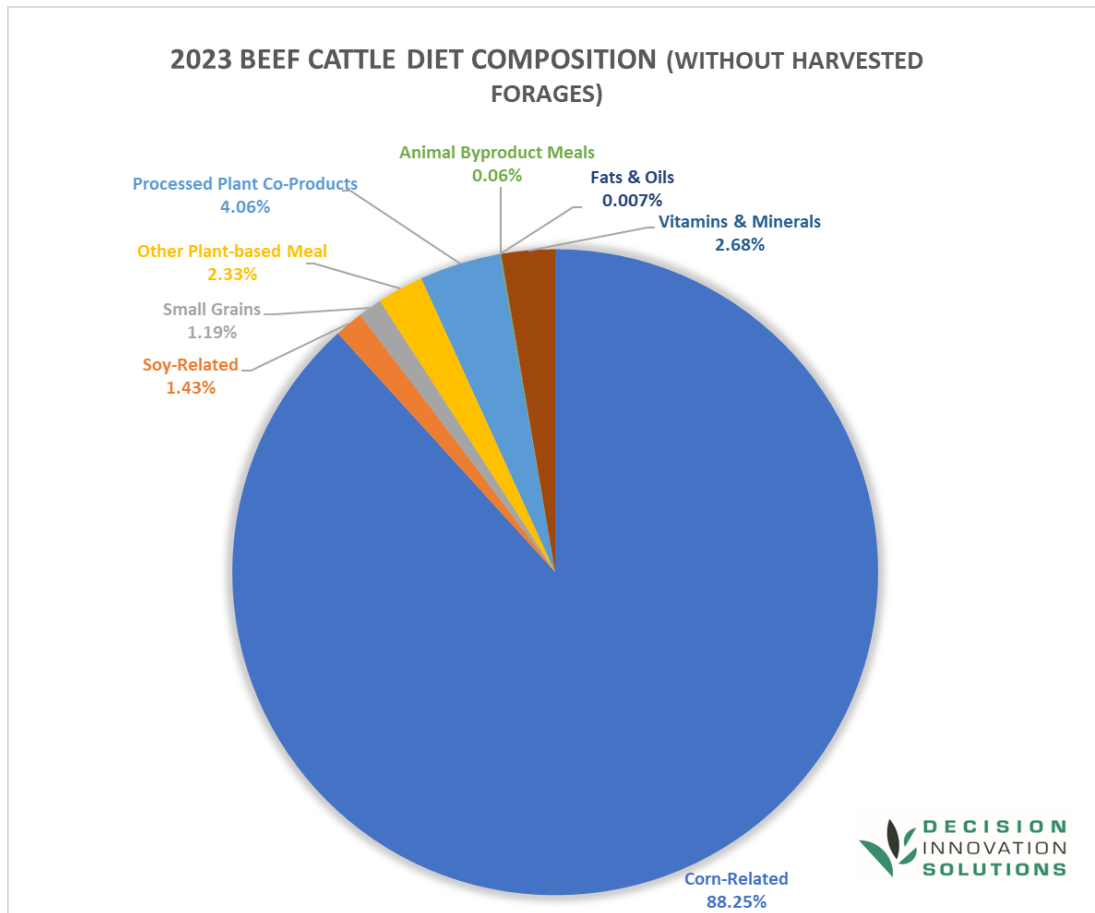


Figure 48. Estimated 2023 Beef Cattle Diet Composition

The map in Figure 49 shows how the total feed tonnage fed to beef cattle is broken out by state. The top states are in the midwestern and southern plains United States and include Texas, Nebraska, Kansas, Iowa and Colorado, which combined fed about 114.4 million tons of feed to beef cattle in 2023.

The map in Figure 50 shows how the total feed tonnage fed (without harvested forages) to beef cattle is broken out by state. The top states are in the midwestern and southern plains United States and include Nebraska, Texas, Kansas, Iowa and Colorado, which combined fed about 48.6 million tons of feed to beef cattle in 2023.

Beef Cattle
2023 Feed Consumed by State

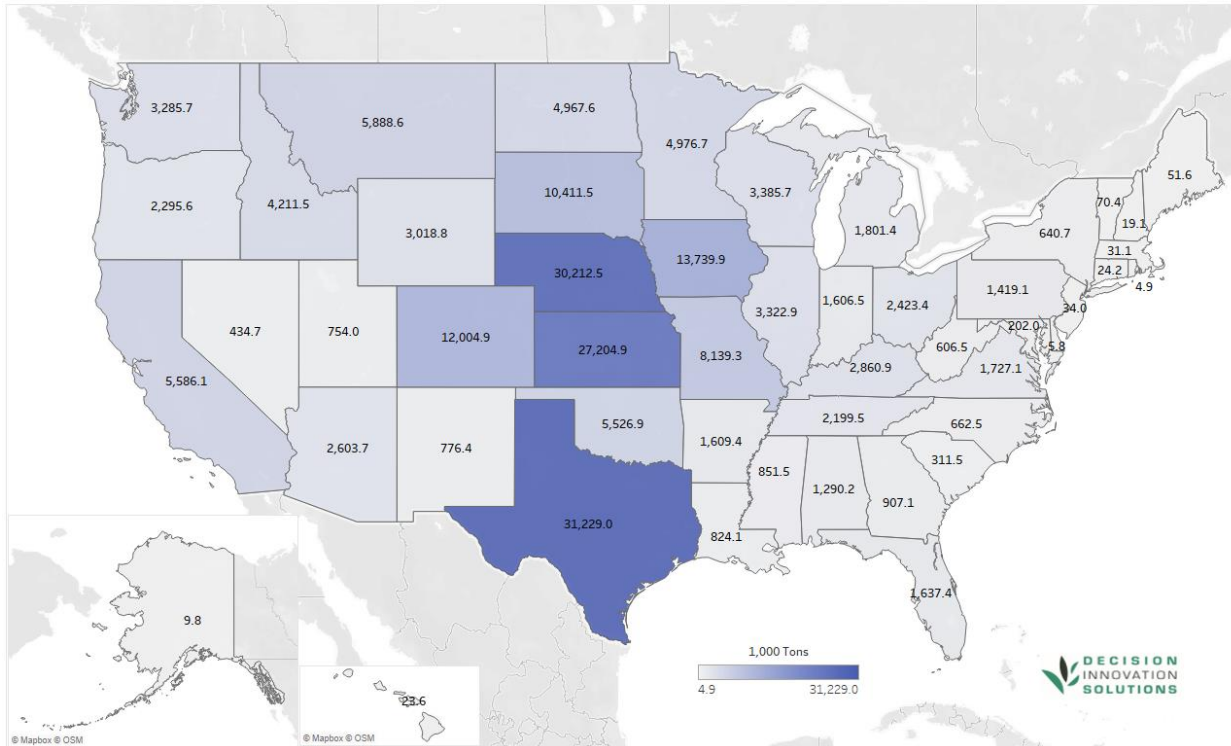


Figure 49. Estimated 2023 Feed Consumption (in 1,000 Tons) by State -- Beef Cattle

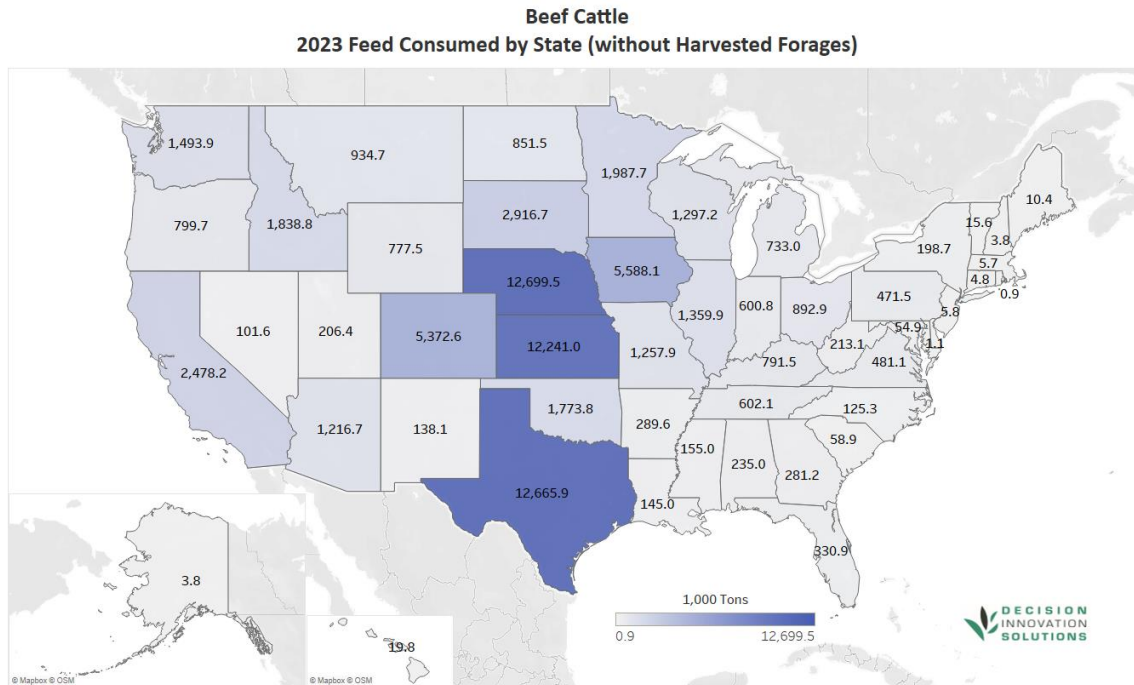


Figure 50. Estimated 2023 Feed Consumption without Harvested Forages and Roughages (in 1,000 Tons) by State -- Beef Cattle

4.1.7.1 Beef Cattle Feed Consumption Comparison

Beef cattle feed consumption comparisons between 2019 and 2023 are shown in Figure 51 and Appendix 6.2. Beef cattle feed consumption increased by 6.6%, from 195.0 million tons to 207.8 million tons from 2019 to 2023. Total quantities (short tons) of ingredients (see Appendix 6.1 for aggregation scheme) fed in 2023 are corn-related (67.7 million short tons), soy-related (1.1 million short tons), small grain (0.9 million short tons), other plant-based meal (1.8 million short tons), processed plant co-products (3.1 million short tons), animal byproduct meals (42.5 thousand short tons), fats and oils (5.0 thousand short tons), harvested forage and roughage (131.1 million short tons) and vitamins and minerals (2.1 million short tons), shown in Table 11.

Table 11. Beef Cattle Feed Consumption Comparison (2019 and 2023)

Ingredient	2023	2019	Percent Change
Corn-Related	67.7 million	54.1 million	25.3%
Soy-Related	1.1 million	2.6 million	(58.3%)
Small Grain	910,699	852,969	6.8%
Other Plant-Based Meal	1.8 million	3.9 million	(53.7%)
Processed Plant Co-Products	3.1 million	612,446	409.0%
Animal Byproduct Meals	42,544	Unreported	---
Fats and Oils	4,989	4,745	5.1%
Harvested Forage and Roughage	131.1 million	130.5 million	0.4%
Vitamins and Minerals	2.1 million	2.5 million	(16.6%)

Corn-related ingredients increase by 25.3% due to changes in corn and corn DDGs. Soy-related ingredients decreased by 58.3% mainly because of changes in soybean hulls. Other plant-based meal decreased by 53.7% mainly because of decreasing on canola meal and cottonseed utilization. Processed plant co-products increased by 409% mainly because of new added feed ingredients, sugar beet pulp and molasses. Also, another reason is we expanded the scope of coverage of beef cattle sub species, including beef bulls, beef cows, backgrounding cattle, beef replacement heifers, cattle on feed, calves, and current year calf crop, compared to in 2019 feed consumption data. More details are available in Appendix 6.5.

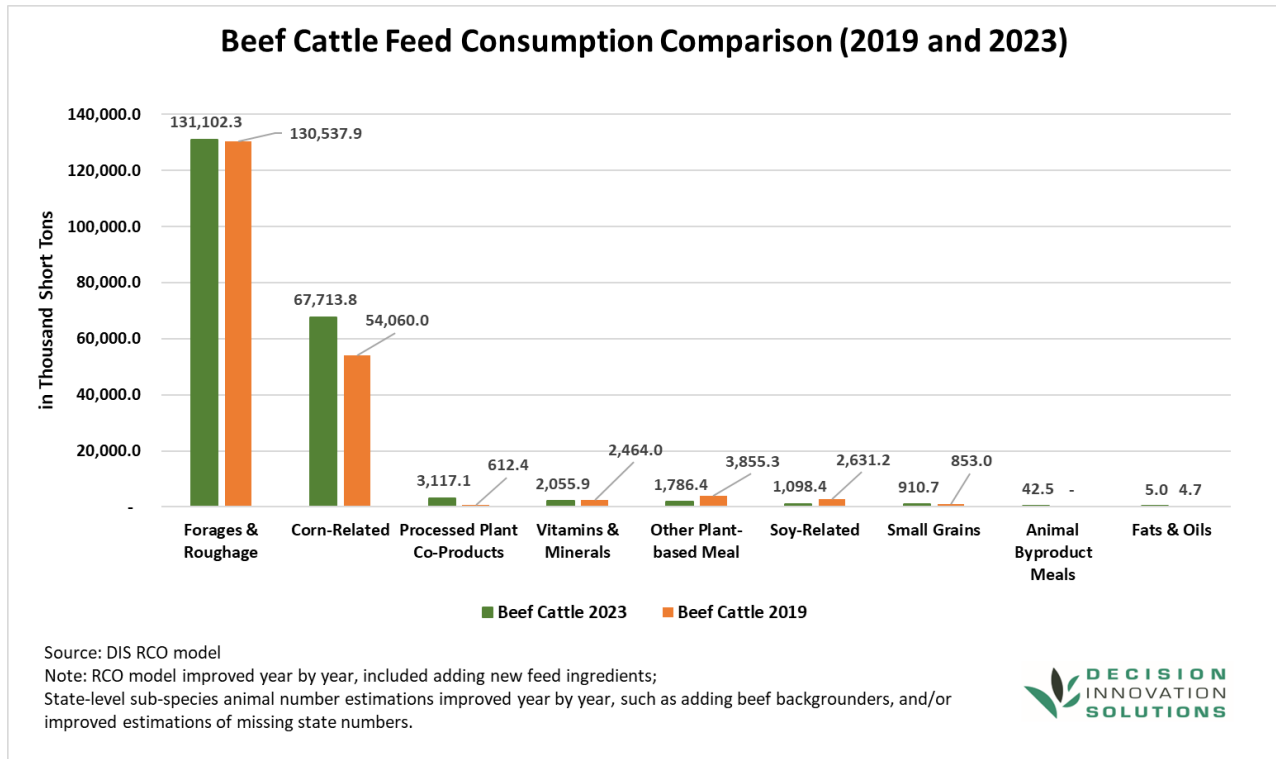


Figure 51. Beef Cattle Feed Consumption Comparison (2019 and 2023)

Figure 52 and Table 5 show the circular ingredient consumption comparison between 2019 and 2023 for beef cattle. In 2019, the composition of circular versus non-circular ingredient utilization was 36% and 64%, respectively; while in 2023, the composition of circular ingredients utilization was 35%, and 65% for non-circular ingredients. In both years, the composition of circular versus non-circular ingredient utilization in beef cattle diets remained the same.

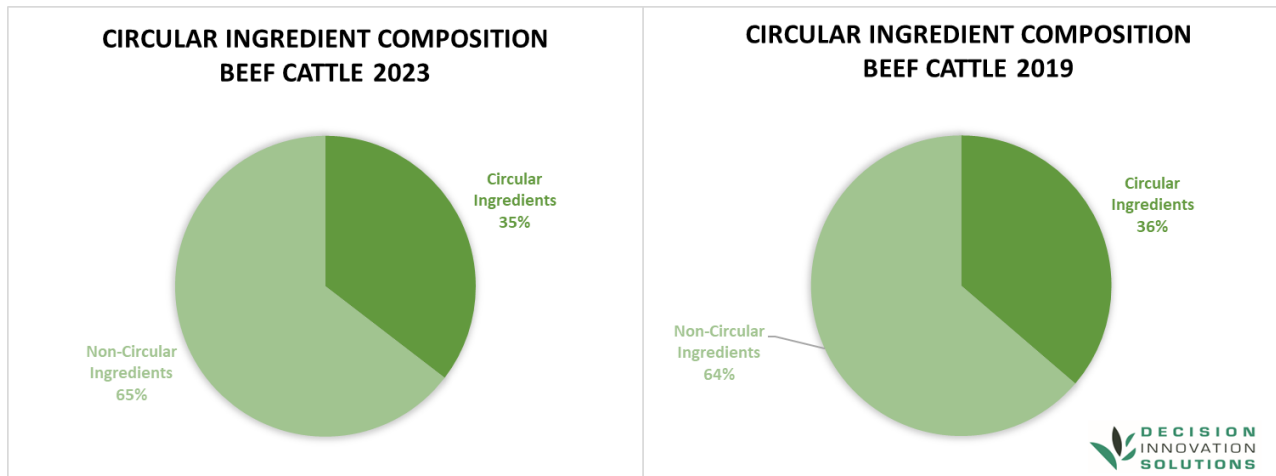


Figure 52. Circular Ingredient Composition Comparison between 2019 and 2023 -- Beef Cattle

4.1.8 Sheep and Goats

As shown in Figure 53, the total amount of feed fed to U.S. sheep and goats in 2023 equaled approximately 2.2 million tons. The total amount of feed (without harvested forages and roughages) fed to sheep and goats was approximately 1.0 million tons. About 43.0% of this amount came from corn-related ingredients. Other commodity groups comprising at least 1% of tonnage fed to sheep and goats include 32.8% of processed plant co-products, 17.2% of small grains, 4.4% of soy-related ingredients and 2.6% of other plant-based meals. For the full table of ingredient quantities, see Appendix 6.4.8 and 6.4.9.

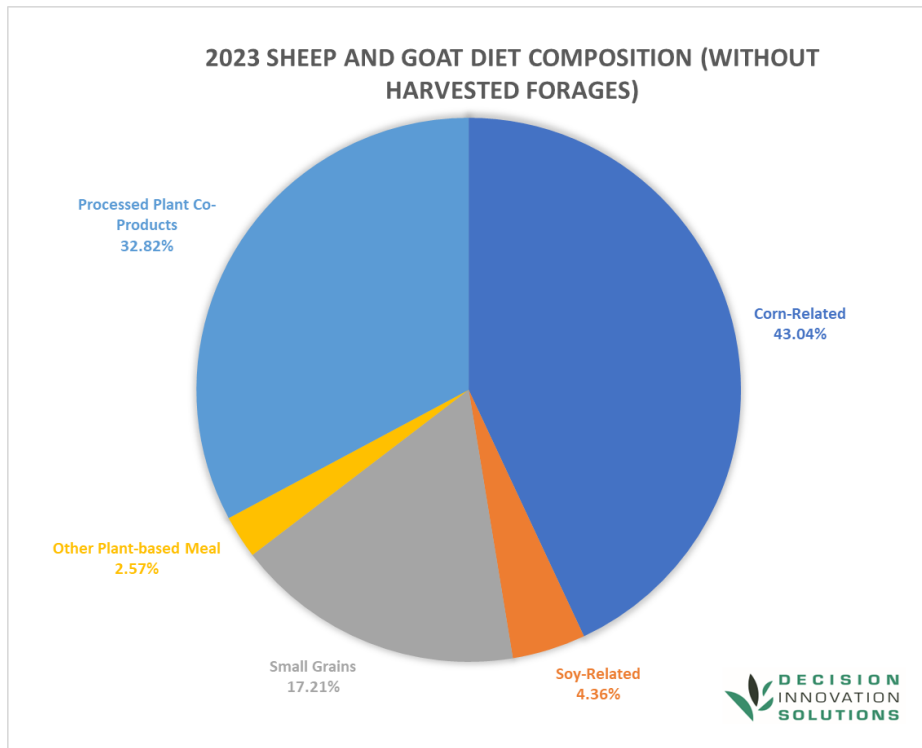


Figure 53. Estimated 2023 Sheep and Goat Diet Composition

The map in Figure 54 shows how the total feed tonnage fed to sheep and goats is broken out by state. The top states are in the midwestern and western United States and include Texas, California, Colorado, Wyoming, and Utah, which combined fed about 894.9 thousand tons of feed to sheep and goats in 2023.

The map in Figure 55 shows how the total feed tonnage (without harvested forages and roughages) fed to sheep and goats is broken out by state. The top states are in the midwestern and western United States and include Texas, California, Colorado, Wyoming and Utah, which combined fed about 526.5 thousand tons of feed to sheep and goats in 2023.

Sheep and Goats
2023 Feed Consumed by State

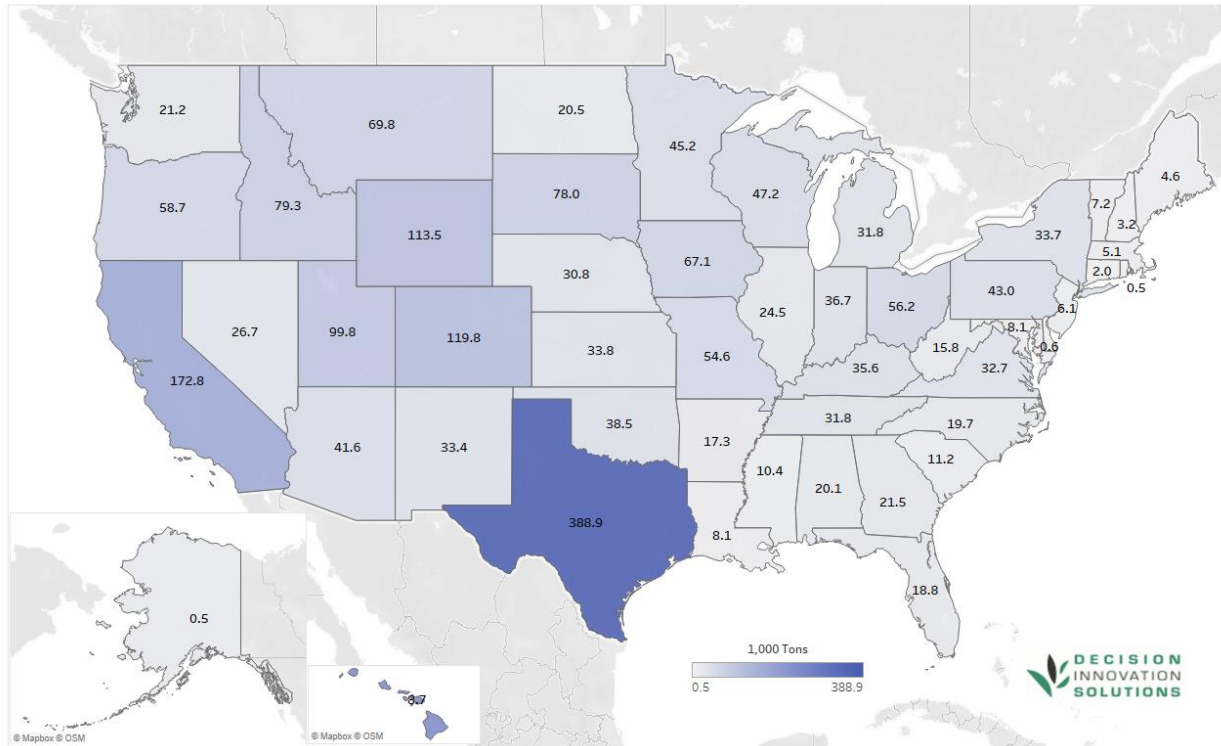


Figure 54. Estimated 2023 Feed Consumption (in 1,000 Tons) by State -- Sheep and Goats

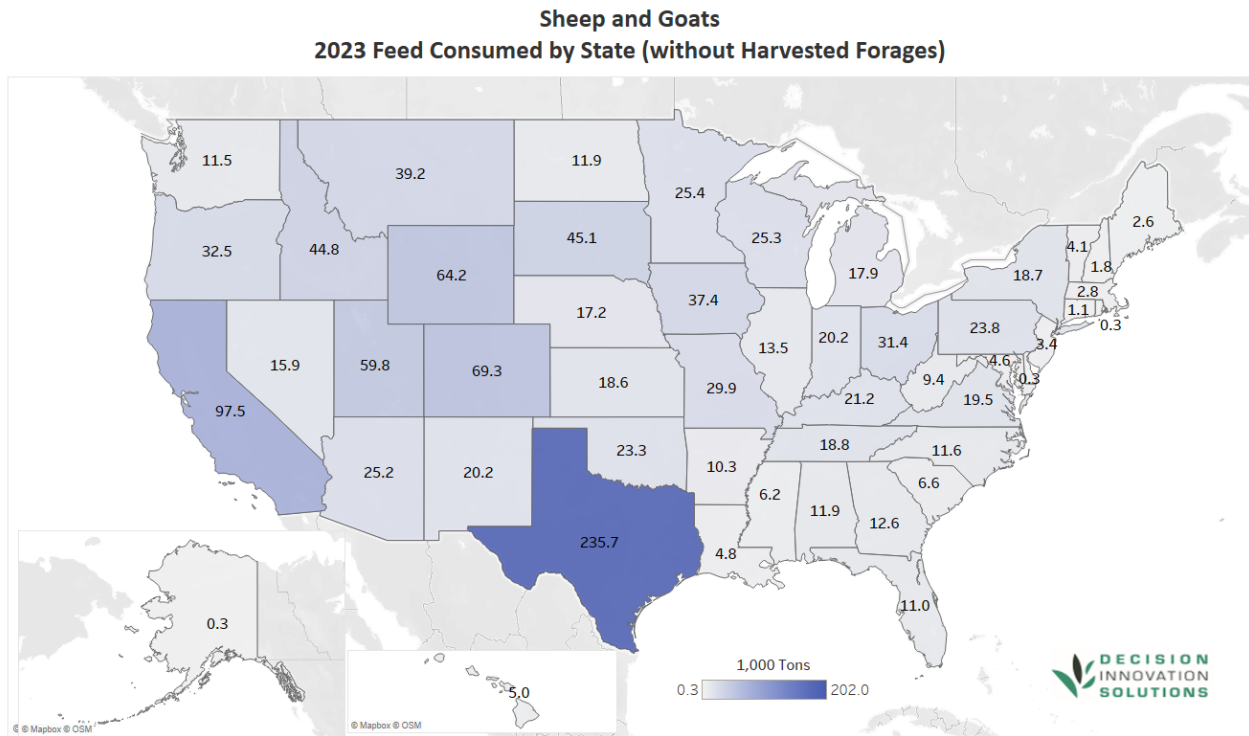


Figure 55. Estimated 2023 Feed Consumption without Harvested Forages and Roughages (in 1,000 Tons) by State -- Sheep and Goats

4.1.8.1 Sheep and Goat Feed Consumption Comparison

Sheep and Goat feed consumption comparisons between 2019 and 2023 are shown in Figure 56 and Appendix 6.2. Sheep and goat feed consumption increased by 1,454.3%, from 138.8 thousand tons to 2.2 million tons from 2019 to 2023. The significant increase was because in the 2019 study, only corn and soybean meal were analyzed, while in the 2023 study, the feed ingredients were expanded. The comparison of sheep and goat feed consumption between the two studies could only be done for corn and soybean meal consumption, shown in Table 12.

Table 12. Sheep and Goat Feed Consumption Comparison (2019 and 2023)

Ingredient	2023	2019	Percent Change
Corn	274,445	115,289	138.1%
Soybean Meal	25,466	23,495	8.4%

Corn consumption increased by 138% is mainly because of expanded the coverage of all segments of sheep and goat production, including meat and dairy goats. More details are available in Appendix 6.5.

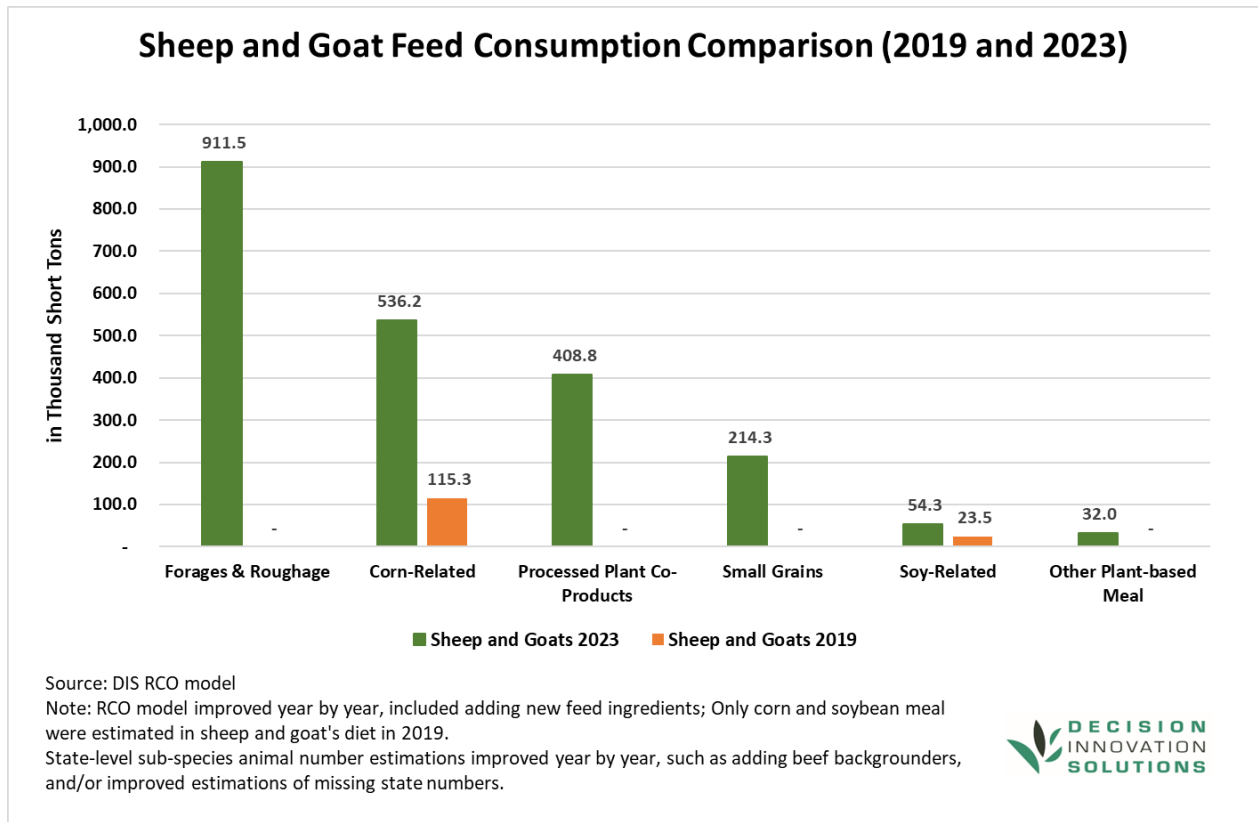


Figure 56. Sheep and Goat Feed Consumption Comparison (2019 and 2023)

Figure 57 and Table 5 show the circular ingredient consumption comparison between 2019 and 2023 for sheep and goats. In 2019, the composition of circular versus non-circular ingredient utilization was 17% and 83%, respectively; while in 2023, the composition of circular ingredients utilization was 52%, and 48% for non-circular ingredients. In the 2019 study, only corn and soybean meal were included in the study.

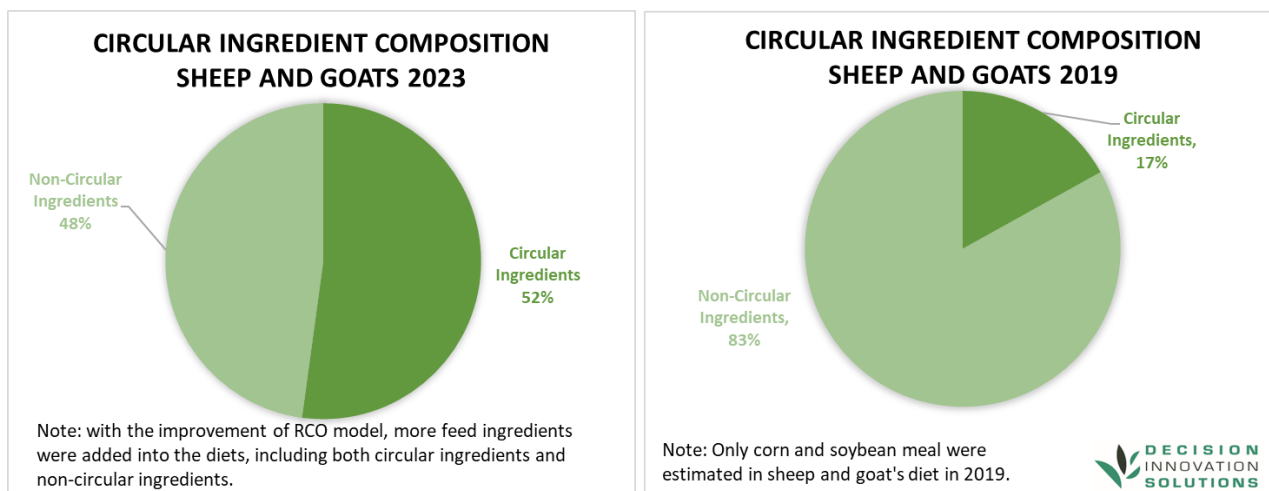


Figure 57. Circular Ingredient Composition Comparison between 2019 and 2023 -- Sheep and Goats

4.1.9 Horses

As shown in Figure 58, the total amount of feed fed to U.S. horses in 2023 equaled approximately 6.4 million tons. The total amount of feed (without harvested forages and roughages) fed to horses was approximately 3.7 million tons. About 17.8% of this amount came from corn-related ingredients. Other commodity groups comprising at least 1% of tonnage fed to horses include 61.9% of processed plant co-products, 11.8% of small grains, and 8.5% of soy-related ingredients. For the full table of ingredient quantities, see Appendix 6.4.10.

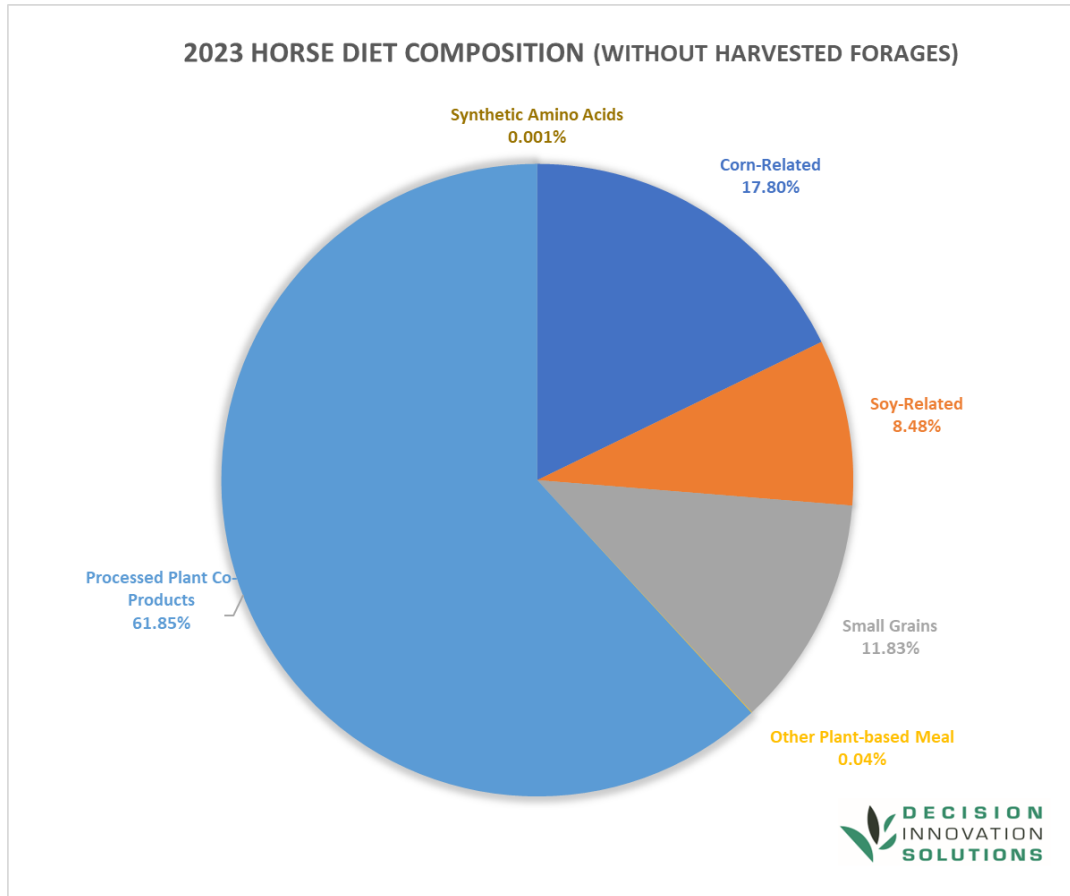


Figure 58. Estimated 2023 Horses Diet Composition

The map in Figure 59 shows how the total feed tonnage fed to horses is broken out by state. The top states include Texas, California, Florida, Ohio, and Oklahoma which combined fed about 2.0 million tons of feed to horses in 2023.

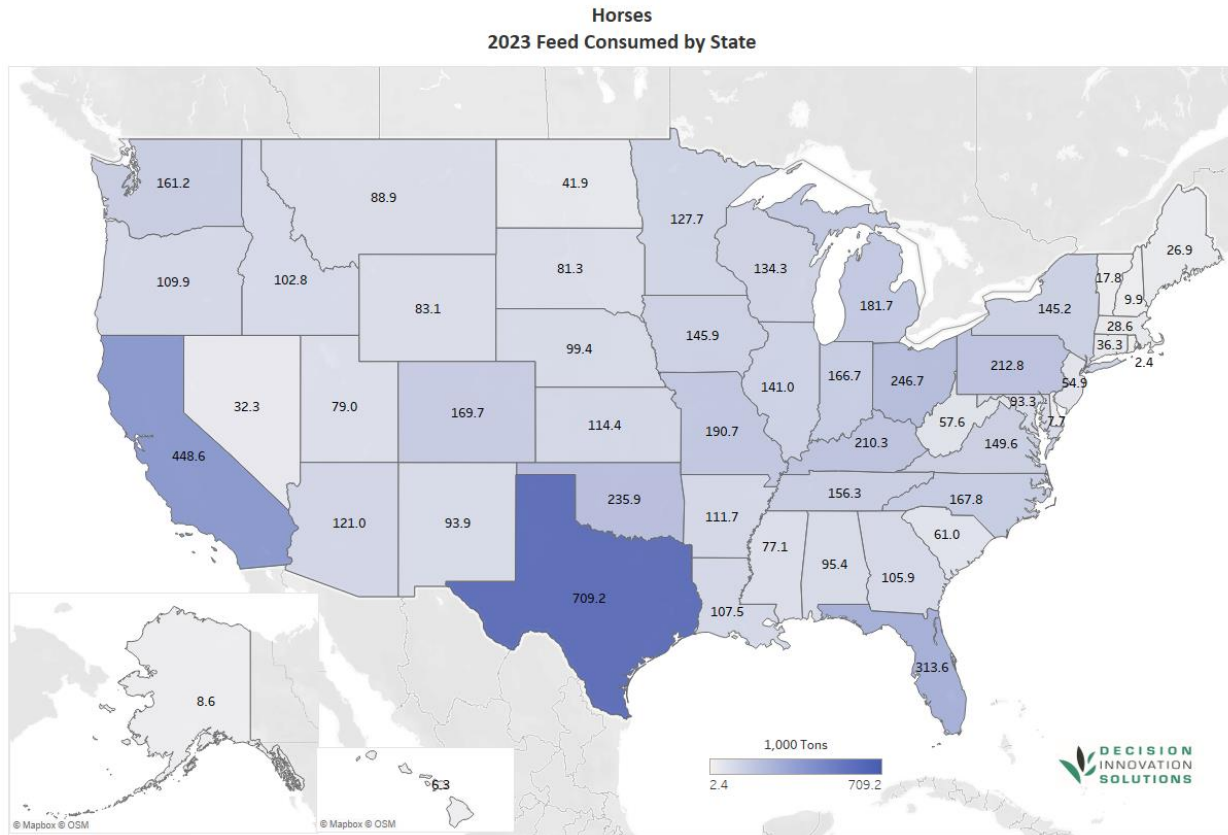


Figure 59. Estimated 2023 Feed Consumption (in 1,000 Tons) by State -- Horses

The map in Figure 60 shows how the total feed tonnage (without harvested forages) fed to horses is broken out by state. The top states include Texas, California, Florida, Oklahoma, and Ohio, which combined fed about 1.6 million tons of feed to horses in 2023.

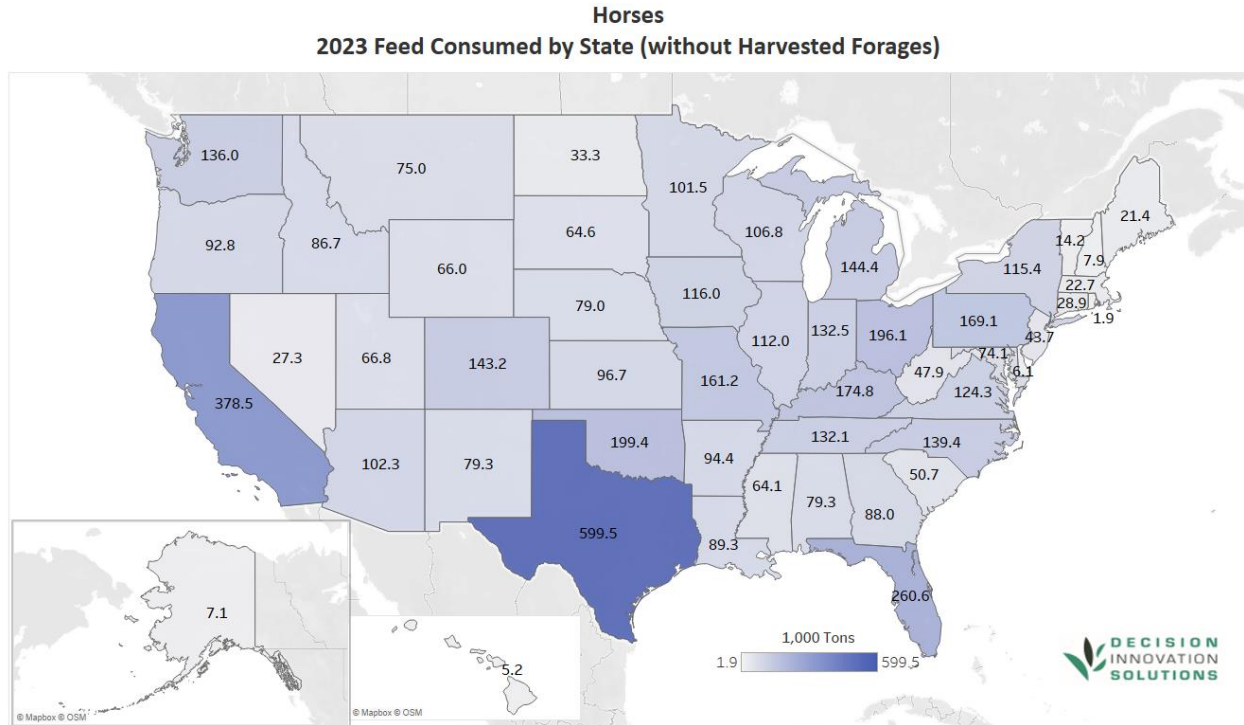


Figure 60. Estimated 2023 Feed Consumption without Harvested Forages and Roughages (in 1,000 Tons) by State -- Horses

4.1.9.1 Horse Feed Consumption Comparison

Horse feed consumption comparisons between 2019 and 2023 are shown in Figure 61 and Appendix 6.2. Horse feed consumption decreased by 16.8%, from 7.7 million tons to 6.4 million tons from 2019 to 2023. Total quantities (short tons) of ingredients (see Appendix 6.1 for aggregation scheme) fed in 2023 are corn-related (0.9 million short tons), soy-related (0.4 million short tons), small grain (0.6 million short tons), other plant-based meal (1.9 thousand short tons), processed plant co-products (1.7 million short tons), harvested forage and roughage (2.7 million short tons) and synthetic amino acids (76 short tons) shown in Table 13.

Table 13. Horse Feed Consumption Comparison (2019 and 2023)

Ingredient	2023	2019	Percent Change
Corn-Related	936,163	1.1 million	(14.2%)
Soy-Related	446,242	191,455	133.1%
Small Grain	622,256	2.3 million	(73.4%)
Other Plant-Based Meal	1,944	306,328	(99.4%)
Processed Plant Co-Products	3.3 million	3.7 million	(12.9%)
Harvested Forage and Roughage	1.1 million	unreported	---
Synthetic Amino Acids	76	unreported	---

The change in sources of horse inventory data resulted in a significant increase in the number of horses included in the analysis (155% more horses). However, based on changes to horse diets with input from the industry nutrition experts, soybean meal calculated for horse consumption declined by 43% and DDGs consumed by horses declined by 59%. While these numbers represent large percentage changes of feed consumption by horses¹⁵. More details are available in Appendix 6.5.

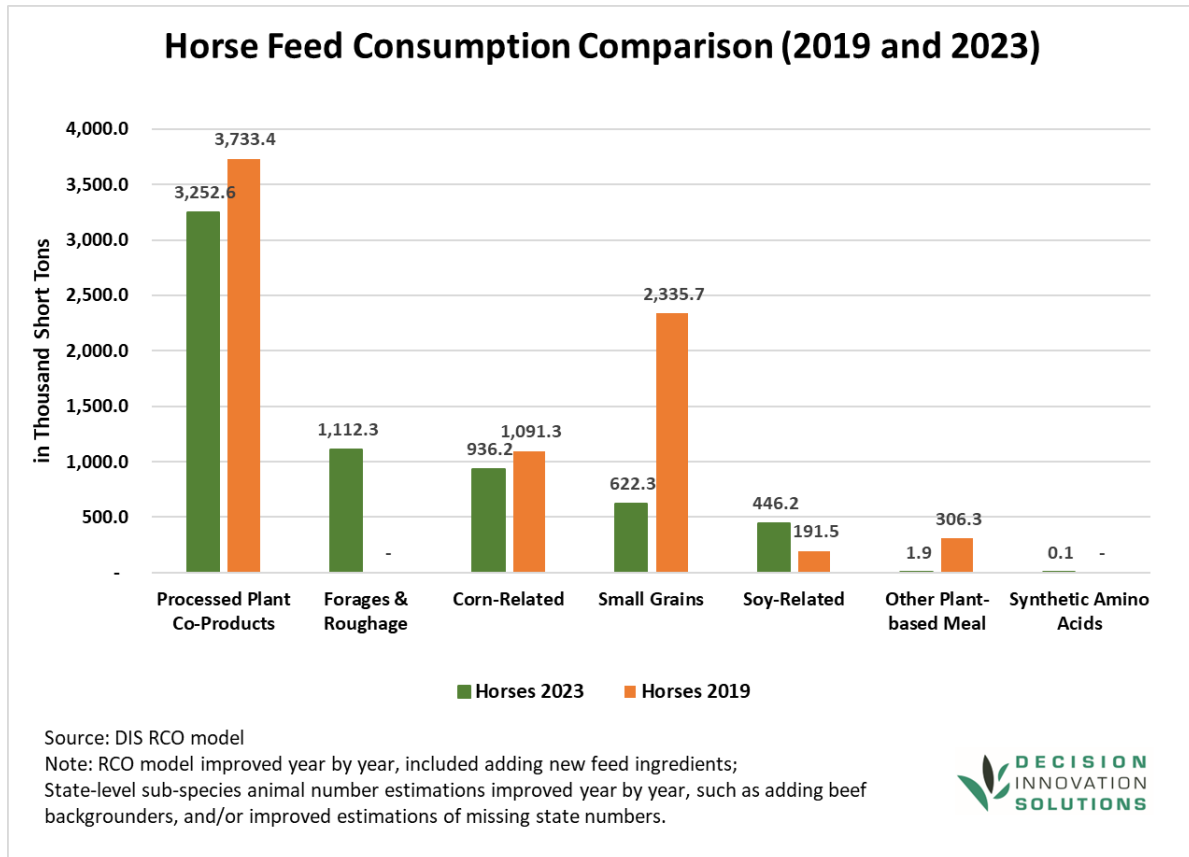


Figure 61. Horse Feed Consumption Comparison (2019 and 2023)

Figure 62 and Table 5 show the circular ingredient consumption comparison between 2019 and 2023 for horses. In 2019, the composition of circular versus non-circular ingredient utilization was 69% and 31%, respectively; while in 2023, the composition of circular ingredients utilization was 77%, and 23% for non-circular ingredients.

¹⁵ Soy hulls were not included in the 2019 data. In 2023 data, there were 336,789 tons of soy hulls in horse diets. Soybean meal in horse diets dropped from 191,455 tons to 109,453 tons. So, the total quantity of soy-related ingredients in horse diets increased by 133% while soybean meal in horse diets decreased by 43%. Corn DDGs in horse diets dropped from 765,819 tons to 312,775 tons, a 59% reduction.

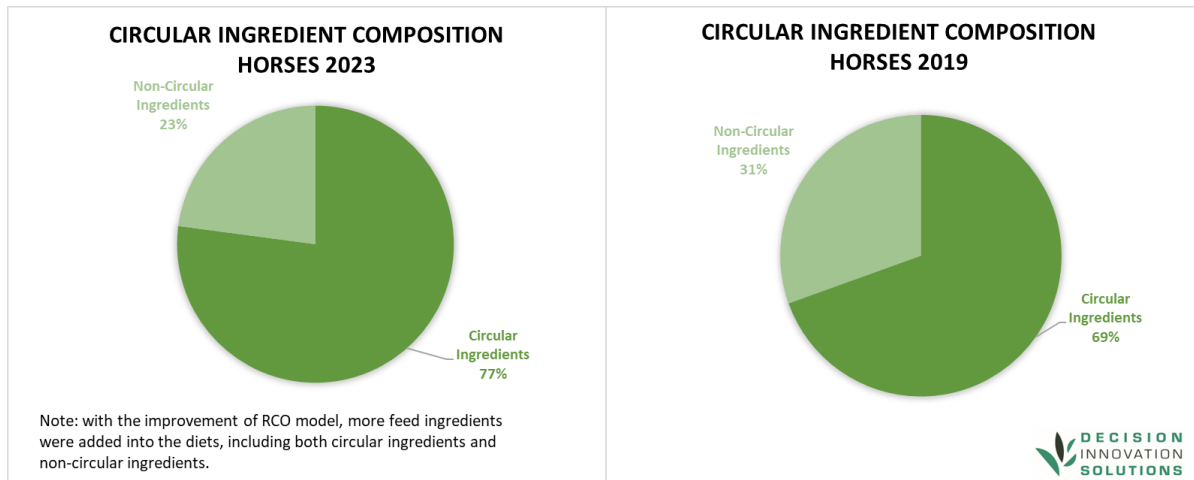


Figure 62. Circular Ingredient Composition Comparison between 2019 and 2023 -- Horses

4.1.10 Aquaculture

As shown in Figure 63, the total amount of feed fed to U.S. aquaculture in 2023 equaled approximately 615.8 thousand tons. About 25% of this amount came from corn-related ingredients. Other commodity groups comprising at least 1% of tonnage fed to aquaculture include 33.5% of soy-related ingredients, 15.0% of other plant-based meals, 13.6% of processed plant co-products, 6.0% of animal byproduct meals, 4.0% of fats and oils, and 3.0% of other feed ingredients. For the full table of ingredient quantities, see Appendix 6.4.11.

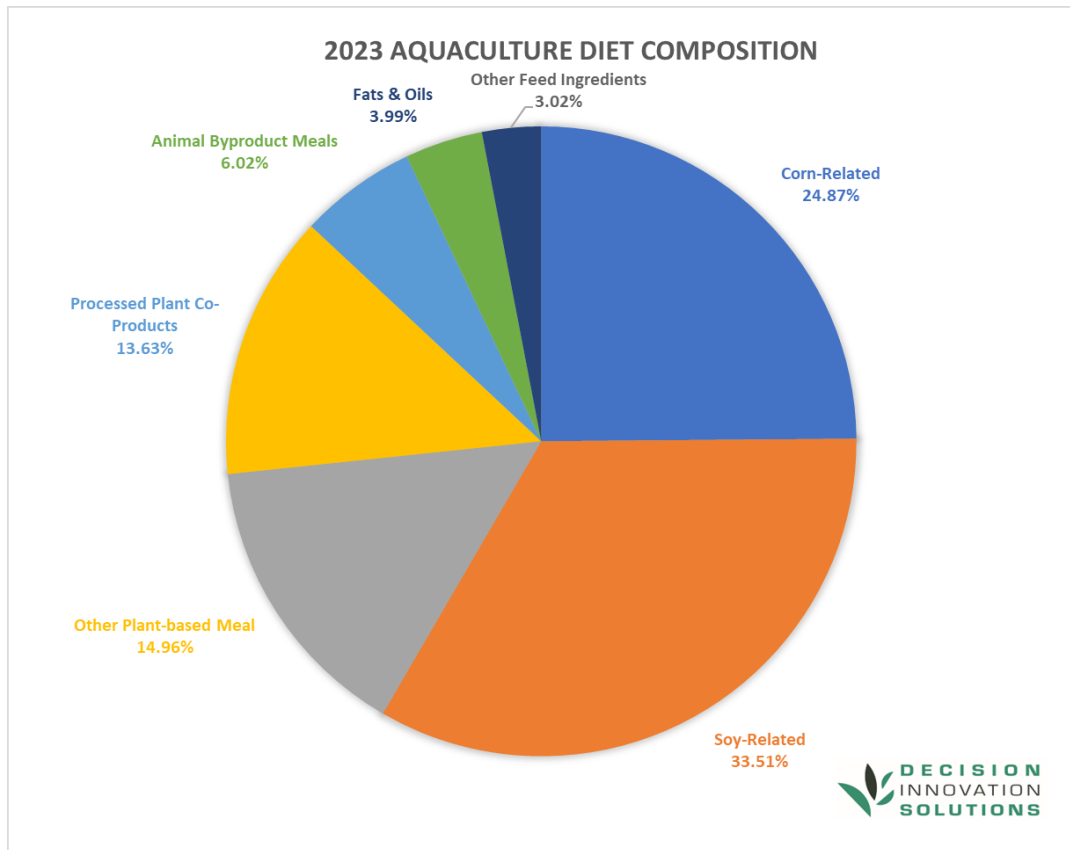


Figure 63. Estimated 2023 Aquaculture Diet Composition

The map in Figure 64 shows how the total feed tonnage fed to aquaculture is broken out by state. The top states include Mississippi, Alabama, Arkansas, California, and Idaho, which combined fed nearly 470 thousand tons of feed to aquaculture in 2023.

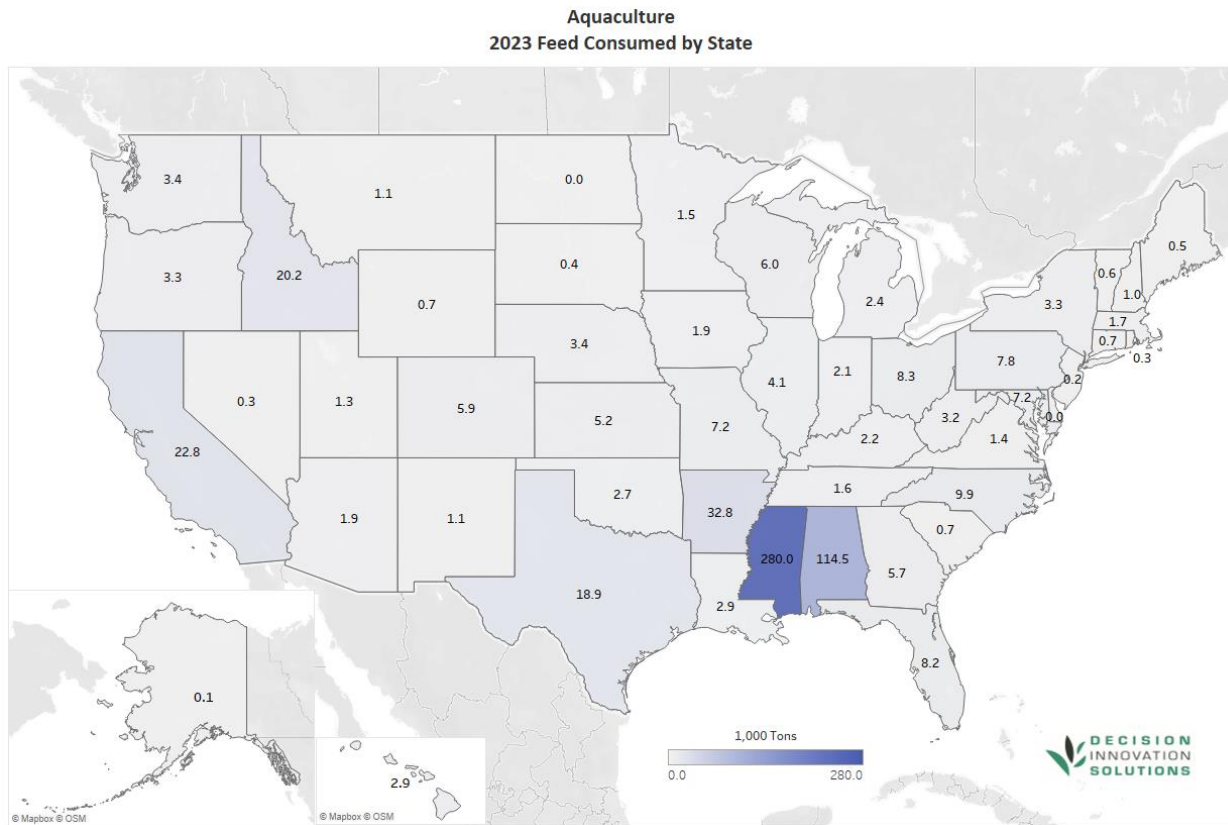


Figure 64. Estimated 2023 Feed Consumption (in 1,000 Tons) by State -- Aquaculture

4.1.10.1 Aquaculture Feed Consumption Comparison

Aquaculture feed consumption comparisons between 2019 and 2023 are shown in Figure 65 and Appendix 6.2. Aquaculture feed consumption increased by 7.9%, from 570.5 thousand tons to 615.8 thousand tons from 2019 to 2023. Total quantities (short tons) of ingredients (see Appendix 6.1 for aggregation scheme) fed in 2023 are corn-related (0.1 million short tons), soy-related (0.2 million short tons), other plant-based meal (92.1 thousand short tons), processed plant co-products (84.0 thousand short tons), animal byproduct meals (37.0 thousand short tons) and fats and oils (24.6 thousand short tons), shown in Table 14.

Table 14. Aquaculture Feed Consumption Comparison (2019 and 2023)

Ingredient	2023	2019	Percent Change
Corn-Related	153,139	148,977	2.8%
Soy-Related	206,358	202,672	1.8%
Small Grain	---	16,633	(100.0%)
Other Plant-Based Meal	92,110	88,611	4.0%
Processed Plant Co-Products	83,956	63,343	32.5%
Animal Byproduct Meals	37,046	45,293	(18.2%)
Fats and Oils	24,551	5,017	389.4%

Small grain was dropped in 2023 aquaculture diet and the processed plant co-products increased by 32.5%, both of them was because of ration change from wheat to wheat flour. Fats and oils increased by 389.4% because of new added fats and oils ingredients¹⁶.

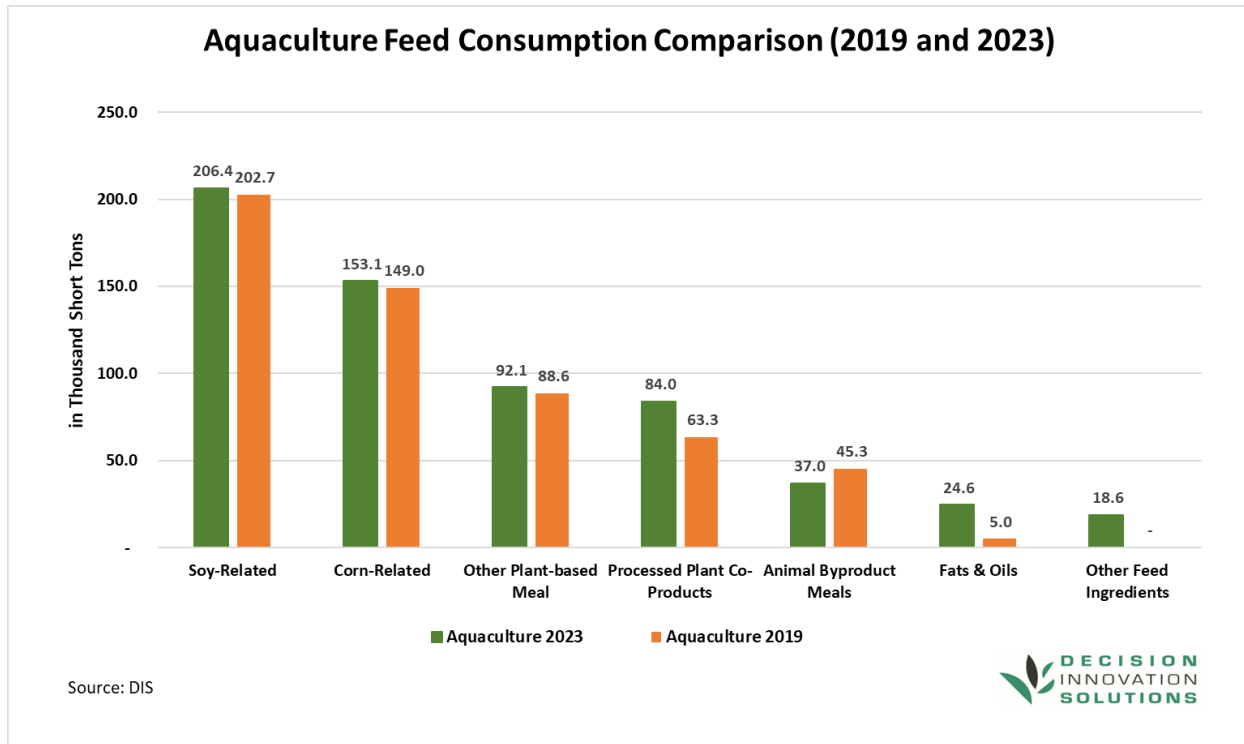


Figure 65. Aquaculture Feed Consumption Comparison (2019 and 2023)

Figure 66 and Table 5 show the circular ingredient consumption comparison between 2019 and 2023 for aquaculture. In 2019, the composition of circular versus non-circular ingredient utilization was 83% and 17%, respectively; while in 2023, the composition of circular ingredients utilization was 84%, and 16% for non-circular ingredients. In both years, the composition of circular versus non-circular ingredient utilization in aquaculture’s diet remained the same.

¹⁶ Full list of new added feed ingredients is in Appendix 6.

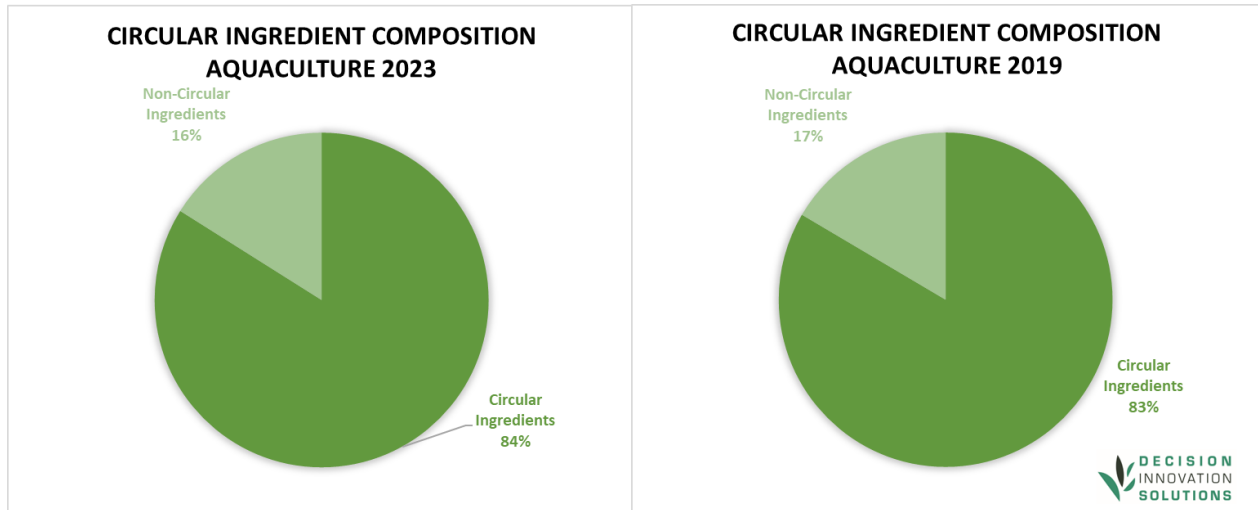


Figure 66. Circular Ingredient Composition Comparison between 2019 and 2023 -- Aquaculture


4.2 Inclusion of Molasses in Animal Diets

Molasses was a new ingredient added into RCO in the 2023 study. There is no RCO molasses data from the 2019 analysis. The RCO estimated utilization of molasses by species is shown in Table 15. Total molasses consumption from RCO in 2023 was 2.2 million tons, the top consumer was beef cattle, with 1.1 million tons, followed by dairy cattle with 0.7 million tons, and 0.25 million tons used for hogs. The remaining 0.20 million tons were consumed by poultry, horses, sheep and goats. There was no molasses used in aquaculture diets.

Table 15. Molasses Utilization by Livestock and Poultry from Different Sources

Species from RCO	Molasses from RCO 2023	Molasses from Industry Report 2023	Molasses from Industry Report 2019	Species from Industry Report
Broilers	35,704			
Layers	-	84,989	86,189	Poultry
Turkeys	46,110			
Hogs	249,666	259,382	259,435	Swine
Dairy Cattle	655,646	579,856	561,098	Dairy Cattle
Beef Cattle	1,131,019	1,164,072	1,136,626	Beef Cattle
Horses	84,792			
Sheep	17,878	119,205	127,655	Animal Feed from Others
Goats	16,682			
Total	2,237,497	2,207,505	2,171,003	Total

Sources: DIS RCO model;
U.S. Animal Feed and Pet Food Molasses Market Report, from Global Market Insights



In an industry report¹⁷ on the molasses market, one analysis reported that total molasses consumption in 2023 was 2.3 million tons. Similar results were obtained from the RCO. Beef cattle consumed the most molasses in 2023, with 1.2 million tons, followed by dairy cattle with 0.6 million tons, and 0.25 million

¹⁷ U.S. Animal Feed and Pet Food Molasses Market Report, from Global Market Insights.

tons used for hogs. The results are shown in Table 16 and Figure 67. Also, shown in Figure 67, the report compared the molasses utilization by species between 2019 and 2023.

Table 16. Molasses Consumption Comparison by Species (2019 and 2023)

Species	2019	2023	Percent Change
Beef Cattle	1.1 million	1.2 million	2.4%
Dairy Cattle	561,000	580,000	3.3%
Hogs	259,440	259,380	(0.02%)
Other	127,700	119,200	(6.6%)
Poultry	86,200	85,000	(1.4%)
Total	2.17 million	2.21 million	1.7%

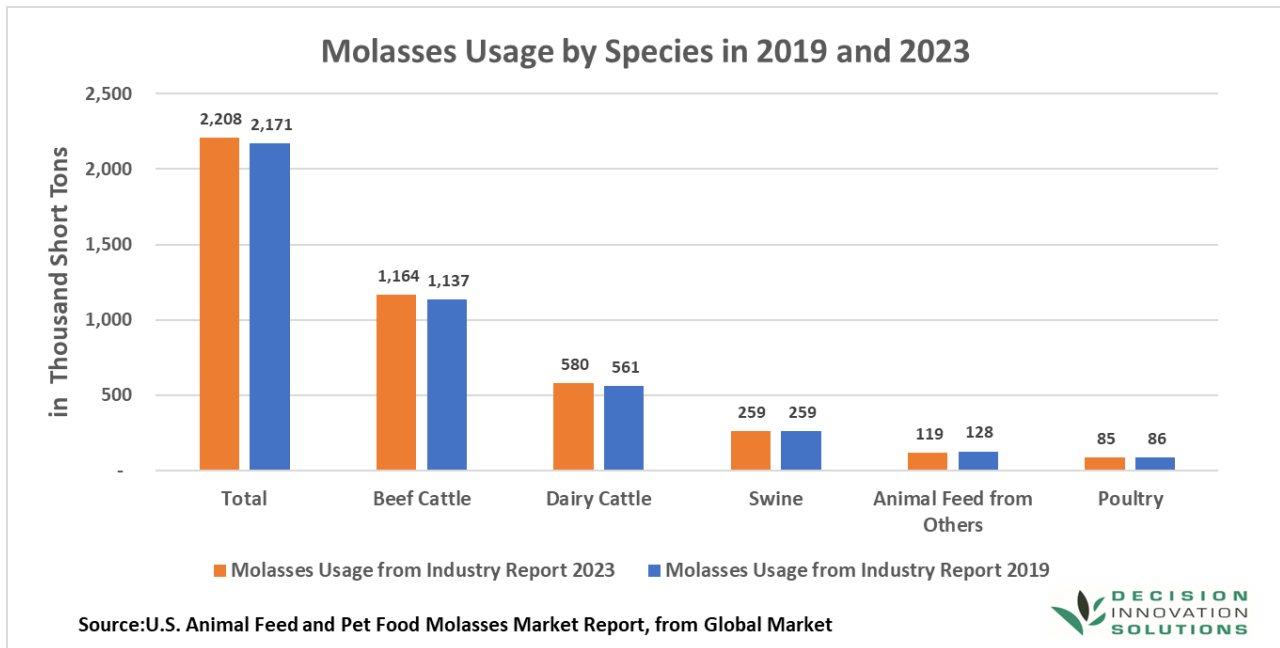


Figure 67. Molasses Utilization by Species in 2019 and 2023

5 References

2023 Economic Impact Study of the U.S. Horse Industry published by the American Horse Council: <https://horsecouncil.org/economic-impact-study/>

Guidelines on the role of livestock in circular bioeconomy systems report, published by the Food and Agriculture Organization of the United Nations (FAO):

<https://openknowledge.fao.org/server/api/core/bitstreams/cfb89e72-76cf-449c-b8b8-7e2a37f2c89d/content>

<https://www.netmeds.com/health-library/post/molasses-in-dog-food-what-is-it-uses-benefits-and-side-effects-in-pet-diet>

Meeker DL and Hamilton CR, 2006. An overview of the Rendering Industry.

https://www.researchgate.net/profile/Dominique-Bureau/publication/242411975_Rendered_products_in_fish_aquaculture_feeds/links/00b4952d0597b2f575000000/Rendered-products-in-fish-aquaculture-feeds.pdf#page=12

Mordenti AL, Giaretta E, Campidonico L, Parazza P, and Formigoni A, 2021, A Review Regarding the Use of Molasses in Animal Nutrition, *Animals (Basel)*, Jan 7;11(1):115.

Ndelekwute EK, Uzegbu HO, Igwe IR, Nosike RJ, Odoemelam VU, and Inyang UO, 2010, Effects of Administration of Molasses Through Drinking Water on Growth and Conformation Parameters of Meat-type Chicken, *Animal Production Research Advances*, 6(1):30-34.

Preston TR, Molasses as Animal Feed: An Overview, FAO, <https://www.fao.org/4/s8850e/S8850E19.htm>;

U.S. Animal Feed and Pet Food Molasses Market Report, from Global Market Insights

6 Appendix

Summary tables for a given species:

Ingredient aggregation in 2023 diets:

- **Total corn-related ingredients:** corn, corn DDGs, corn gluten feed, corn gluten meal, hominy feed, and grain sorghum.
- **Total soy-related ingredients:** soybean meal, soybean hulls and soybean seeds.
- **Total small grains:** barley, oats, millet, rye and wheat.
- **Total other plant-based meals:** canola meal, cottonseed meal, sunflower meal, cottonseed, non-corn brewer's products and wheat gluten meal.
- **Total processed plant co-products:** potato tubers, potato peels, potato pulp, almond hulls, citrus pulp, sugar beet pulp, peanut hulls, wheat middlings, wheat flour, miscellaneous byproduct feeds, rice mill feed, alfalfa meal and molasses.
- **Total animal byproduct meals:** meat and bone meal, meat meal, feather meal, blood meal, poultry byproduct meal and fishmeal.
- **Total fats and oils:** corn crude oil, distiller corn oil, canola oil, soybean oil, used cooking oil, inedible tallow, yellow grease, choice white grease, lecithin, fish oil, and poultry fat.
- **Total synthetic amino acid:** lysine, threonine, DL-methionine, tryptophan and valine.
- **Total harvested forages and roughage:** corn silage, legume silage, sorghum silage, alfalfa hay, other hay, corn stalks (stover), and wheat straw.
- **Other feed ingredients:** whey, milk replacer, and soy protein concentrate.
- **Vitamins and minerals:** dicalcium phosphate, limestone, monocalcium phosphate, potassium chloride, salt, sodium bicarbonate, minerals, vitamins and phytase.

New Added Feed Ingredients Compared to 2020 report (2019 diets) are:

- ❖ **Small grains:** rye.
- ❖ **Other plant-based meals:** non-corn brewer's products and wheat gluten meal.
- ❖ **Processed plant co-products:** wheat flour, sugar beef pulp, citrus pulp, peanut hulls, alfalfa meal, and molasses.
- ❖ **Animal byproduct meals:** poultry byproduct meal.
- ❖ **Fats and oils:** corn crude oil, distiller corn oil, poultry fat, used cooking oil and canola oil.
- ❖ **Synthetic amino acid:** valine.
- ❖ **Harvested forages and roughage:** legume silage, sorghum silage, corn stalks and wheat straw.
- ❖ **Other feed ingredients:** whey and milk replacer.
- ❖ **Vitamins and minerals:** sodium bicarbonate.

Ingredient Circularity Aggregation

Circular Ingredient Aggregation	Ingredient Aggregation	Ingredient
Circular Ingredient	Animal Byproduct Meals	Poultry Byproduct Meal
Circular Ingredient	Animal Byproduct Meals	Meat and Bone Meal
Circular Ingredient	Animal Byproduct Meals	Meat Meal
Circular Ingredient	Animal Byproduct Meals	Feather Meal
Circular Ingredient	Animal Byproduct Meals	Fishmeal
Circular Ingredient	Animal Byproduct Meals	Bloodmeal
Circular Ingredient	Corn-Related	Corn DDGs
Circular Ingredient	Corn-Related	Corn Gluten Feed
Circular Ingredient	Corn-Related	Corn Gluten Meal
Circular Ingredient	Corn-Related	Hominy Feed
Circular Ingredient	Fats & Oils	Poultry Fat
Circular Ingredient	Fats & Oils	Inedible Tallow
Circular Ingredient	Fats & Oils	Yellow Grease
Circular Ingredient	Fats & Oils	Choice White Grease
Circular Ingredient	Fats & Oils	Distiller Corn Oil
Circular Ingredient	Fats & Oils	Used Cooking Oil
Circular Ingredient	Fats & Oils	Lecithin
Circular Ingredient	Forages & Roughage	Corn Stalks
Circular Ingredient	Forages & Roughage	Wheat Straw
Circular Ingredient	Other Feed Ingredients	Whey
Circular Ingredient	Other Feed Ingredients	Soy Protein Conc
Circular Ingredient	Other Plant-based Meal	Canola Meal
Circular Ingredient	Other Plant-based Meal	Cottonseed
Circular Ingredient	Other Plant-based Meal	Cottonseed Meal
Circular Ingredient	Other Plant-based Meal	Sunflower Meal
Circular Ingredient	Other Plant-based Meal	Non-corn Brewers Products
Circular Ingredient	Other Plant-based Meal	Wheat Gluten Meal
Circular Ingredient	Processed Plant Co-Products	Wheat Middlings
Circular Ingredient	Processed Plant Co-Products	Sugar Beet Pulp
Circular Ingredient	Processed Plant Co-Products	Molasses
Circular Ingredient	Processed Plant Co-Products	Miscellaneous Byproduct Feeds
Circular Ingredient	Processed Plant Co-Products	Almond Hulls
Circular Ingredient	Processed Plant Co-Products	Wheat Flour
Circular Ingredient	Processed Plant Co-Products	Rice Mill Feed
Circular Ingredient	Processed Plant Co-Products	Potato Pulp
Circular Ingredient	Processed Plant Co-Products	Potato Tubers
Circular Ingredient	Processed Plant Co-Products	Potato Peels
Circular Ingredient	Processed Plant Co-Products	Alfalfa Meal
Circular Ingredient	Processed Plant Co-Products	Citrus Pulp
Circular Ingredient	Processed Plant Co-Products	Peanut Hulls
Circular Ingredient	Soy-Related	Soybean Meal
Circular Ingredient	Soy-Related	Soybean Hulls

Circular Ingredient Aggregation	Ingredient Aggregation	Ingredient
Non-Circular Ingredient	Corn-Related	Corn
Non-Circular Ingredient	Corn-Related	Sorghum
Non-Circular Ingredient	Fats & Oils	Soybean Oil
Non-Circular Ingredient	Fats & Oils	Corn Crude Oil
Non-Circular Ingredient	Fats & Oils	Canola Oil
Non-Circular Ingredient	Fats & Oils	Fish Oil
Non-Circular Ingredient	Forages & Roughage	Corn Silage
Non-Circular Ingredient	Forages & Roughage	Other Hay
Non-Circular Ingredient	Forages & Roughage	Alfalfa Hay
Non-Circular Ingredient	Forages & Roughage	Legume Silage
Non-Circular Ingredient	Forages & Roughage	Sorghum Silage
Non-Circular Ingredient	Other Feed Ingredients	Milk Replacer
Non-Circular Ingredient	Small Grains	Wheat
Non-Circular Ingredient	Small Grains	Barley
Non-Circular Ingredient	Small Grains	Oats
Non-Circular Ingredient	Small Grains	Millet
Non-Circular Ingredient	Small Grains	Rye
Non-Circular Ingredient	Soy-Related	Soybean Seeds
Non-Circular Ingredient	Synthetic Amino Acids	Lysine
Non-Circular Ingredient	Synthetic Amino Acids	DL Methionine
Non-Circular Ingredient	Synthetic Amino Acids	Threonine
Non-Circular Ingredient	Synthetic Amino Acids	Valine
Non-Circular Ingredient	Synthetic Amino Acids	Tryptophan
Non-Circular Ingredient	Vitamins & Minerals	Minerals
Non-Circular Ingredient	Vitamins & Minerals	Limestone
Non-Circular Ingredient	Vitamins & Minerals	Dicalcium Phosphate
Non-Circular Ingredient	Vitamins & Minerals	Salt
Non-Circular Ingredient	Vitamins & Minerals	Vitamins
Non-Circular Ingredient	Vitamins & Minerals	Sodium Bicarbonate
Non-Circular Ingredient	Vitamins & Minerals	Potassium Chloride
Non-Circular Ingredient	Vitamins & Minerals	Phytase

6.1 Ingredient Aggregations by Species -- 2023 (in Short Tons)

Circular Ingredient Aggregation	Ingredient Aggregation	Ingredient	Broilers	Layers	Turkeys	Hogs
Circular Ingredient	Animal Byproduct Meals	Poultry Byproduct Meal	188,290	63,768	188,285	183,199
Circular Ingredient	Animal Byproduct Meals	Meat and Bone Meal	27,033	5,608	122,002	122,060
Circular Ingredient	Animal Byproduct Meals	Meat Meal	-	-	171	1
Circular Ingredient	Animal Byproduct Meals	Feather Meal	147,775	-	9,067	-
Circular Ingredient	Animal Byproduct Meals	Fishmeal	-	-	-	-
Circular Ingredient	Animal Byproduct Meals	Bloodmeal	-	-	-	-
Circular Ingredient	Corn-Related	Corn DDGs	1,199,525	1,017,452	341,206	5,835,307
Circular Ingredient	Corn-Related	Corn Gluten Feed	-	-	-	87,624
Circular Ingredient	Corn-Related	Corn Gluten Meal	-	-	-	-
Circular Ingredient	Corn-Related	Hominy Feed	-	-	-	1,045,909
Non-Circular Ingredient	Corn-Related	Corn	36,476,482	9,715,828	7,054,148	40,005,993
Non-Circular Ingredient	Corn-Related	Sorghum	166,092	80,630	12,783	416,653
Circular Ingredient	Fats & Oils	Poultry Fat	54,904	-	48,650	-
Circular Ingredient	Fats & Oils	Inedible Tallow	-	-	-	-
Circular Ingredient	Fats & Oils	Yellow Grease	258,250	-	89,291	-
Circular Ingredient	Fats & Oils	Choice White Grease	-	-	9,027	280,654
Circular Ingredient	Fats & Oils	Distiller Corn Oil	34,433	-	9,823	-
Circular Ingredient	Fats & Oils	Used Cooking Oil	40,162	-	2,963	-
Circular Ingredient	Fats & Oils	Lecithin	-	-	-	-
Non-Circular Ingredient	Fats & Oils	Soybean Oil	249,130	54,012	70,839	176,569
Non-Circular Ingredient	Fats & Oils	Corn Crude Oil	-	-	6	-
Non-Circular Ingredient	Fats & Oils	Canola Oil	-	-	-	-
Circular Ingredient	Other Feed Ingredients	Whey	-	-	-	8,932
Circular Ingredient	Other Plant-based Meal	Canola Meal	111,850	34,809	13,452	315
Circular Ingredient	Processed Plant Co-Products	Wheat Middlings	813,158	1,098,739	258,725	2,012,131
Circular Ingredient	Processed Plant Co-Products	Molasses	35,704	-	46,110	249,666
Circular Ingredient	Processed Plant Co-Products	Miscellaneous Byproduct Feeds	762,065	62,679	-	195,706
Circular Ingredient	Processed Plant Co-Products	Wheat Flour	203,290	-	-	503,033
Circular Ingredient	Processed Plant Co-Products	Rice Mill Feed	-	-	-	223,868
Non-Circular Ingredient	Small Grains	Wheat	487,800	101,101	21,676	1,136,305
Non-Circular Ingredient	Small Grains	Barley	15,189	16,518	1,139	523,615
Non-Circular Ingredient	Small Grains	Oats	-	-	-	10,908
Non-Circular Ingredient	Small Grains	Millet	-	-	-	10,946
Non-Circular Ingredient	Small Grains	Rye	-	-	-	545
Circular Ingredient	Soy-Related	Soybean Meal	18,383,756	3,460,796	2,499,772	6,069,968
Circular Ingredient	Soy-Related	Soybean Hulls	-	-	-	530,041
Non-Circular Ingredient	Soy-Related	Soybean Seeds	-	-	-	-
Non-Circular Ingredient	Synthetic Amino Acids	Lysine	148,772	-	17,078	119,969
Non-Circular Ingredient	Synthetic Amino Acids	DL Methionine	168,185	20,002	23,034	16,691
Non-Circular Ingredient	Synthetic Amino Acids	Threonine	8,739	-	2,111	25,043
Non-Circular Ingredient	Synthetic Amino Acids	Valine	7,449	1,962	1,343	-
Non-Circular Ingredient	Synthetic Amino Acids	Tryptophan	-	-	-	4,299
Non-Circular Ingredient	Vitamins & Minerals	Minerals	31,307	9,878	-	-
Non-Circular Ingredient	Vitamins & Minerals	Limestone	639,709	1,627,700	49,048	544,018
Non-Circular Ingredient	Vitamins & Minerals	Dicalcium Phosphate	365,859	190,015	4,105	352,055
Non-Circular Ingredient	Vitamins & Minerals	Salt	253,031	51,747	13,412	188,874
Non-Circular Ingredient	Vitamins & Minerals	Vitamins	156,525	49,374	4,457	-
Non-Circular Ingredient	Vitamins & Minerals	Sodium Bicarbonate	35,755	9,419	6,448	-
Non-Circular Ingredient	Vitamins & Minerals	Potassium Chloride	-	-	-	-
Non-Circular Ingredient	Vitamins & Minerals	Phytase	31,305	6,774	-	-
		Total	61,501,523	17,678,811	10,920,171	60,880,899

Circular Ingredient Aggregation	Ingredient Aggregation	Ingredient	Dairy Cattle	Beef Cattle	Horses	Sheep and Goats
Circular Ingredient	Animal Byproduct Meals	Poultry Byproduct Meal	1,331,400	-	-	-
Circular Ingredient	Animal Byproduct Meals	Meat and Bone Meal	830,294	36,461	-	-
Circular Ingredient	Animal Byproduct Meals	Meat Meal	-	-	-	-
Circular Ingredient	Animal Byproduct Meals	Feather Meal	118,266	6,082	-	-
Circular Ingredient	Animal Byproduct Meals	Fishmeal	-	-	-	-
Circular Ingredient	Animal Byproduct Meals	Bloodmeal	51,991	-	-	-
Circular Ingredient	Corn-Related	Corn DDGs	4,967,357	18,731,816	312,775	83,731
Circular Ingredient	Corn-Related	Corn Gluten Feed	803,574	2,250,485	40,973	70,834
Circular Ingredient	Corn-Related	Corn Gluten Meal	781,408	150,428	182	3
Circular Ingredient	Corn-Related	Hominy Feed	-	-	-	-
Non-Circular Ingredient	Corn-Related	Corn	18,960,924	46,323,600	537,912	274,445
Non-Circular Ingredient	Corn-Related	Sorghum	89,061	257,440	44,320	107,145
Circular Ingredient	Fats & Oils	Poultry Fat	827,927	-	-	-
Circular Ingredient	Fats & Oils	Inedible Tallow	218,274	-	-	-
Circular Ingredient	Fats & Oils	Distiller Corn Oil	143,959	-	-	-
Non-Circular Ingredient	Fats & Oils	Soybean Oil	563,270	4,989	-	-
Non-Circular Ingredient	Fats & Oils	Corn Crude Oil	234,671	-	-	-
Non-Circular Ingredient	Fats & Oils	Canola Oil	177,679	-	-	-
Circular Ingredient	Forages & Roughage	Corn Stalks	1,907,564	5,581,861	-	-
Circular Ingredient	Forages & Roughage	Wheat Straw	437,719	1,652,777	-	-
Non-Circular Ingredient	Forages & Roughage	Corn Silage	62,100,377	56,031,190	-	236,220
Non-Circular Ingredient	Forages & Roughage	Other Hay	14,415,867	47,538,109	599,856	392,376
Non-Circular Ingredient	Forages & Roughage	Alfalfa Hay	33,971,422	13,799,912	512,454	282,884
Non-Circular Ingredient	Forages & Roughage	Legume Silage	21,039,802	2,102,157	-	-
Non-Circular Ingredient	Forages & Roughage	Sorghum Silage	367,494	4,396,338	-	-
Non-Circular Ingredient	Other Feed Ingredients	Milk Replacer	861,044	-	-	-
Circular Ingredient	Other Plant-based Meal	Canola Meal	4,685,006	367,740	159	587
Circular Ingredient	Other Plant-based Meal	Cottonseed	1,117,081	1,250,422	-	9,757
Circular Ingredient	Other Plant-based Meal	Cottonseed Meal	334,922	119,559	1,785	21,673
Circular Ingredient	Other Plant-based Meal	Sunflower Meal	45,636	4,319	-	-
Circular Ingredient	Other Plant-based Meal	Non-corn Brewers Products	-	44,353	-	-
Circular Ingredient	Processed Plant Co-Products	Wheat Middlings	281,950	-	892,663	156,927
Circular Ingredient	Processed Plant Co-Products	Sugar Beet Pulp	44,784	926,291	1,434,680	180,351
Circular Ingredient	Processed Plant Co-Products	Molasses	655,646	1,131,019	84,792	34,560
Circular Ingredient	Processed Plant Co-Products	Miscellaneous Byproduct Feeds	660,778	-	-	-
Circular Ingredient	Processed Plant Co-Products	Almond Hulls	741,150	-	119,994	36,950
Circular Ingredient	Processed Plant Co-Products	Wheat Flour	-	-	-	-
Circular Ingredient	Processed Plant Co-Products	Rice Mill Feed	-	-	450,581	-
Circular Ingredient	Processed Plant Co-Products	Potato Pulp	-	392,911	-	-
Circular Ingredient	Processed Plant Co-Products	Potato Tubers	-	328,362	-	-
Circular Ingredient	Processed Plant Co-Products	Potato Peels	-	328,362	-	-
Circular Ingredient	Processed Plant Co-Products	Alfalfa Meal	-	-	269,896	-
Circular Ingredient	Processed Plant Co-Products	Citrus Pulp	987	10,172	-	0
Circular Ingredient	Processed Plant Co-Products	Peanut Hulls	-	-	-	-
Non-Circular Ingredient	Small Grains	Wheat	3,854	514,913	-	126,846
Non-Circular Ingredient	Small Grains	Barley	290,815	383,192	-	-
Non-Circular Ingredient	Small Grains	Oats	-	-	622,256	87,487
Non-Circular Ingredient	Small Grains	Millet	-	12,594	-	-
Non-Circular Ingredient	Small Grains	Rye	-	-	-	-
Circular Ingredient	Soy-Related	Soybean Meal	4,127,010	549,018	109,453	25,466
Circular Ingredient	Soy-Related	Soybean Hulls	1,830,961	549,345	336,789	28,874
Non-Circular Ingredient	Soy-Related	Soybean Seeds	952,891	-	-	-
Non-Circular Ingredient	Synthetic Amino Acids	Lysine	-	-	76	-
Non-Circular Ingredient	Synthetic Amino Acids	DL Methionine	-	-	-	-
Non-Circular Ingredient	Synthetic Amino Acids	Threonine	-	-	-	-
Non-Circular Ingredient	Synthetic Amino Acids	Valine	-	-	-	-
Non-Circular Ingredient	Synthetic Amino Acids	Tryptophan	-	-	-	-
Non-Circular Ingredient	Vitamins & Minerals	Minerals	1,560,752	1,919,631	-	-
Non-Circular Ingredient	Vitamins & Minerals	Limestone	63,116	54,687	-	-
Non-Circular Ingredient	Vitamins & Minerals	Dicalcium Phosphate	147,272	13,322	-	-
Non-Circular Ingredient	Vitamins & Minerals	Salt	214,090	41,118	-	-
Non-Circular Ingredient	Vitamins & Minerals	Vitamins	1	1	-	-
Non-Circular Ingredient	Vitamins & Minerals	Sodium Bicarbonate	-	-	-	-
Non-Circular Ingredient	Vitamins & Minerals	Potassium Chloride	20,948	27,138	-	-
Non-Circular Ingredient	Vitamins & Minerals	Phytase	-	-	-	-
		Total	182,980,995	207,832,115	6,371,597	2,157,116

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Circular Ingredient Aggregation	Ingredient Aggregation	Ingredient	Aquaculture	Total
Circular Ingredient	Animal Byproduct Meals	Poultry Byproduct Meal	-	1,954,941
Circular Ingredient	Animal Byproduct Meals	Meat and Bone Meal	1,279	1,144,737
Circular Ingredient	Animal Byproduct Meals	Meat Meal	7,580	7,752
Circular Ingredient	Animal Byproduct Meals	Feather Meal	4,347	285,538
Circular Ingredient	Animal Byproduct Meals	Fishmeal	21,834	21,834
Circular Ingredient	Animal Byproduct Meals	Bloodmeal	2,006	53,998
Circular Ingredient	Corn-Related	Corn DDGs	70,350	32,559,519
Circular Ingredient	Corn-Related	Corn Gluten Feed	-	3,253,490
Circular Ingredient	Corn-Related	Corn Gluten Meal	3,514	935,535
Circular Ingredient	Corn-Related	Hominy Feed	-	1,045,909
Non-Circular Ingredient	Corn-Related	Corn	79,274	159,428,606
Non-Circular Ingredient	Corn-Related	Sorghum	-	1,174,123
Circular Ingredient	Fats & Oils	Poultry Fat	5,814	937,294
Circular Ingredient	Fats & Oils	Inedible Tallow	-	218,274
Circular Ingredient	Fats & Oils	Yellow Grease	-	347,542
Circular Ingredient	Fats & Oils	Choice White Grease	-	289,680
Circular Ingredient	Fats & Oils	Distiller Corn Oil	-	188,215
Circular Ingredient	Fats & Oils	Used Cooking Oil	-	43,125
Circular Ingredient	Fats & Oils	Lecithin	1,521	1,521
Non-Circular Ingredient	Fats & Oils	Soybean Oil	5,893	1,124,702
Non-Circular Ingredient	Fats & Oils	Corn Crude Oil	-	234,677
Non-Circular Ingredient	Fats & Oils	Canola Oil	-	177,679
Non-Circular Ingredient	Fats & Oils	Fish Oil	11,323	11,323
Circular Ingredient	Forages & Roughage	Corn Stalks	-	7,489,425
Circular Ingredient	Forages & Roughage	Wheat Straw	-	2,090,495
Non-Circular Ingredient	Forages & Roughage	Corn Silage	-	118,367,787
Non-Circular Ingredient	Forages & Roughage	Other Hay	-	62,946,208
Non-Circular Ingredient	Forages & Roughage	Alfalfa Hay	-	48,566,671
Non-Circular Ingredient	Forages & Roughage	Legume Silage	-	23,141,959
Non-Circular Ingredient	Forages & Roughage	Sorghum Silage	-	4,763,832
Circular Ingredient	Other Feed Ingredients	Whey	-	8,932
Circular Ingredient	Other Feed Ingredients	Soy Protein Conc	3,424	3,424
Non-Circular Ingredient	Other Feed Ingredients	Milk Replacer	-	861,044
Circular Ingredient	Other Plant-based Meal	Canola Meal	-	5,213,918
Circular Ingredient	Other Plant-based Meal	Cottonseed	-	2,377,259
Circular Ingredient	Other Plant-based Meal	Cottonseed Meal	89,110	567,050
Circular Ingredient	Other Plant-based Meal	Sunflower Meal	-	49,955
Circular Ingredient	Other Plant-based Meal	Non-corn Brewers Products	-	44,353
Circular Ingredient	Other Plant-based Meal	Wheat Gluten Meal	2,999	2,999
Circular Ingredient	Processed Plant Co-Products	Wheat Middlings	69,800	5,584,094
Circular Ingredient	Processed Plant Co-Products	Sugar Beet Pulp	-	2,586,107
Circular Ingredient	Processed Plant Co-Products	Molasses	-	2,237,497
Circular Ingredient	Processed Plant Co-Products	Miscellaneous Byproduct Feeds	-	1,681,228
Circular Ingredient	Processed Plant Co-Products	Almond Hulls	-	898,094
Circular Ingredient	Processed Plant Co-Products	Wheat Flour	14,155	720,478
Circular Ingredient	Processed Plant Co-Products	Rice Mill Feed	-	674,448
Circular Ingredient	Processed Plant Co-Products	Potato Pulp	-	392,911
Circular Ingredient	Processed Plant Co-Products	Potato Tubers	-	328,362
Circular Ingredient	Processed Plant Co-Products	Potato Peels	-	328,362
Circular Ingredient	Processed Plant Co-Products	Alfalfa Meal	-	269,896
Circular Ingredient	Processed Plant Co-Products	Citrus Pulp	-	11,158
Circular Ingredient	Processed Plant Co-Products	Peanut Hulls	-	-
Non-Circular Ingredient	Small Grains	Wheat	-	2,392,496
Non-Circular Ingredient	Small Grains	Barley	-	1,230,469
Non-Circular Ingredient	Small Grains	Oats	-	720,651
Non-Circular Ingredient	Small Grains	Millet	-	23,540
Non-Circular Ingredient	Small Grains	Rye	-	545
Circular Ingredient	Soy-Related	Soybean Meal	206,358	35,431,597
Circular Ingredient	Soy-Related	Soybean Hulls	-	3,276,010
Non-Circular Ingredient	Soy-Related	Soybean Seeds	-	952,891
Non-Circular Ingredient	Synthetic Amino Acids	Lysine	-	285,895
Non-Circular Ingredient	Synthetic Amino Acids	DL Methionine	-	227,913
Non-Circular Ingredient	Synthetic Amino Acids	Threonine	-	35,893
Non-Circular Ingredient	Synthetic Amino Acids	Valine	-	10,755
Non-Circular Ingredient	Synthetic Amino Acids	Tryptophan	-	4,299
Non-Circular Ingredient	Vitamins & Minerals	Minerals	-	3,521,568
Non-Circular Ingredient	Vitamins & Minerals	Limestone	-	2,978,278
Non-Circular Ingredient	Vitamins & Minerals	Dicalcium Phosphate	-	1,072,628
Non-Circular Ingredient	Vitamins & Minerals	Salt	-	762,271
Non-Circular Ingredient	Vitamins & Minerals	Vitamins	-	210,358
Non-Circular Ingredient	Vitamins & Minerals	Sodium Bicarbonate	-	51,622
Non-Circular Ingredient	Vitamins & Minerals	Potassium Chloride	-	48,086
Non-Circular Ingredient	Vitamins & Minerals	Phytase	-	38,079
		Total	615,787	550,939,013

6.2 Ingredient Aggregation Comparison between 2019 and 2023 by Species (in Short Tons)

Ingredient Aggregation	Broilers 2023	Layers 2023	Turkeys 2023	Hogs 2023	Dairy Cattle 2023	Beef Cattle 2023	Horses 2023	Sheep and Goats 2023	Aquaculture 2023	Total 2023
Corn-Related	37,842,098	10,813,910	7,408,137	47,391,485	25,602,324	67,713,769	936,163	536,157	153,139	198,397,183
Soy-Related	18,383,756	3,460,796	2,499,772	6,600,009	6,910,862	1,098,363	446,242	54,341	206,358	39,660,497
Small Grains	502,989	117,619	22,815	1,682,320	294,669	910,699	622,256	214,333	-	4,367,702
Other Plant-based Meal	111,850	34,809	13,452	315	6,182,646	1,786,393	1,944	32,017	92,110	8,255,535
Processed Plant Co-Products	1,814,216	1,161,418	304,835	3,184,404	2,385,296	3,117,117	3,252,606	408,789	83,956	15,712,637
Animal Byproduct Meals	363,098	69,376	319,525	305,260	2,331,951	42,544	-	-	37,046	3,468,800
Fats & Oils	636,879	54,012	230,599	457,223	2,165,780	4,989	-	-	24,551	3,574,033
Forages & Roughage	-	-	-	-	134,240,244	131,102,344	1,112,310	911,479	-	267,366,378
Other Feed Ingredients	-	-	-	8,932	861,044	-	-	-	18,627	888,603
Synthetic Amino Acids	333,145	21,965	43,565	166,003	-	-	76	-	-	564,754
Vitamins & Minerals	1,513,491	1,944,908	77,469	1,084,947	2,006,179	2,055,897	-	-	-	8,682,891
Total	61,501,523	17,678,811	10,920,171	60,880,899	182,980,995	207,832,115	6,371,597	2,157,116	615,786	550,939,013

Ingredient Aggregation	Broilers 2019	Layers 2019	Turkeys 2019	Hogs 2019	Dairy Cattle 2019	Beef Cattle 2019	Horses 2019	Sheep and Goats 2019	Aquaculture 2019	Total 2019
Corn-Related	36,997,050	12,478,756	6,023,424	45,091,218	28,169,769	54,059,964	1,091,292	115,288	148,977	184,175,740
Soy-Related	17,014,277	3,066,463	3,285,199	7,278,696	7,558,252	2,631,161	191,455	23,495	202,672	41,251,668
Small Grains	469,873	1,611	18	1,615,211	-	852,969	2,335,748	-	16,633	5,292,062
Other Plant-based Meal	1,500,397	189,152	8,535	223,170	4,084,346	3,855,257	306,327	-	88,611	10,255,795
Processed Plant Co-Products	1,154,329	987,052	39,197	3,544,007	2,627,853	612,446	3,733,367	-	63,343	12,761,592
Animal Byproduct Meals	961,592	269,102	952,422	1,362,160	1,978,566	-	-	-	45,293	5,569,135
Fats & Oils	880,370	144,485	147,586	1,445,846	3,367,551	4,745	-	-	5,017	5,995,600
Forages & Roughage	-	-	-	-	157,089,710	130,537,852	-	-	-	287,627,562
Other Feed Ingredients	-	-	-	-	-	-	-	-	-	-
Synthetic Amino Acids	327,388	21,356	43,944	164,156	-	-	-	-	-	556,843
Vitamins & Minerals	1,485,412	2,074,402	73,918	1,119,350	2,042,688	2,464,028	-	-	-	9,259,798
Total	60,790,688	19,232,380	10,574,242	61,843,813	206,918,734	195,018,422	7,658,189	138,783	570,545	562,745,795

6.3 Circular Ingredient Consumption Comparison between 2019 and 2023 by Species

Year	Circular Ingredient Aggregation	Broilers	Layers	Turkeys	Hogs	Dairy Cattle	Beef Cattle	Horses	Sheep and Goats	Aquaculture	Total	
2023	Circular Ingredient ¹ (Tons)	22,260,195	5,743,849	3,638,544	17,348,414	24,600,362	27,177,147	4,054,722	649,714	504,093	105,977,041	
	Circular Ingredient (% of Species Total without Harvest Forages)	36%	32%	33%	28%	50%	35%	77%	52%	82%	37%	
	Non-Circular Ingredient ¹ (Tons)	39,241,328	11,934,962	7,281,627	43,532,485	24,140,389	49,552,624	1,204,564	595,923	96,490	177,580,392	
	Non-Circular Ingredient (% of Species Total without Harvest Forages)	64%	68%	67%	72%	50%	65%	23%	48%	16%	63%	
	Unique Ingredients from Aquaculture (Tons)										15,203	15,203
	U.S. Total without harvest forages (Tons)	61,501,523	17,678,811	10,920,171	60,880,899	48,740,751	76,729,771	5,259,287	1,245,637	615,787	283,572,636	
	U.S. Total (Tons)	61,501,523	17,678,811	10,920,171	60,880,899	182,980,995	207,832,115	6,371,597	2,157,116	615,787	550,939,013	
2019	Circular Ingredient ¹ (Tons)	24,066,361	6,152,730	4,738,238	21,649,631	24,254,946	23,397,410	5,322,441	23,495	476,352	110,081,604	
	Circular Ingredient (% of Species Total without Harvest Forages)	40%	32%	45%	35%	49%	36%	69%	17%	83%	40%	
	Non-Circular Ingredient ¹ (Tons)	36,724,326	13,079,649	5,836,004	40,194,182	25,574,079	41,083,160	2,335,748	115,288	94,192	165,036,629	
	Non-Circular Ingredient (% of Species Total without Harvest Forages)	60%	68%	55%	65%	51%	64%	31%	83%	17%	60%	
	Unique Ingredients from Aquaculture (Tons)										-	-
	U.S. Total without harvest forages (Tons)	60,790,688	19,232,380	10,574,242	61,843,813	49,829,024	64,480,569	7,658,189	138,783	570,545	275,118,233	
	U.S. Total (Tons)	60,790,688	19,232,380	10,574,242	61,843,813	206,918,734	195,018,422	7,658,189	138,783	570,545	562,745,795	

¹. Circular and Non-circular ingredients in this table do NOT include harvest forages and roughages (i.e., corn silage, alfalfa hay, other hay, legume silage, corn stalks, sorghum silage, and wheat straw)

6.4 2023 Animal Feed Consumption by States (in Short Tons)

6.4.1 Totals (All Species)

State (All numbers are in ST)	Soybean Meal	Soybean Hulls	Soybean Oil	Soybean Seeds	Corn	Corn DDGs	Sorghum	Corn Gluten Feed	Corn Gluten Meal	Canola Meal	Cottonseed Meal	Sunflower Meal
Alabama	2,798,959	19,798	95,764	164	5,124,857	303,060	-	2,091	126	809	23,343	4
Alaska	6,977	460	225	125	13,939	1,845	85	71	0	0	7	-
Arizona	227,536	64,550	9,490	17,323	1,392,472	420,733	14,609	71,318	2,124	38,065	2,389	-
Arkansas	2,746,488	10,350	90,584	328	5,592,739	306,481	4,294	3,536	350	1,413	7,418	7
California	1,039,130	130,008	56,095	99,190	5,352,261	970,615	314	75,028	121,366	2,462,785	94,172	-
Colorado	314,233	188,401	77,712	44,668	5,718,799	15,390	120,451	49,448	2,427	369,868	12,948	-
Connecticut	18,336	5,678	1,169	2,265	76,200	15,184	-	1,317	2,877	5,329	-	-
Delaware	532,996	989	474	310	987,266	7,423	-	436	405	761	-	-
Florida	268,559	116,634	3,577	6,280	824,005	130,471	-	7,315	9,758	24,425	2,376	270
Georgia	3,175,730	85,613	116,986	6,122	6,079,230	358,373	-	9,855	6,188	21,537	2,055	236
Hawaii	8,296	451	376	593	36,324	3,601	2,875	329	12	2	293	-
Idaho	246,213	101,480	40,962	79,788	2,004,916	774,043	-	35,716	97,243	261,951	1,268	-
Illinois	610,955	93,815	21,868	12,748	4,222,632	810,982	1,471	104,211	3,415	9,262	2,199	416
Indiana	1,141,510	93,638	45,634	35,720	4,725,678	767,591	2,205	24,574	14,450	19,455	0	484
Iowa	2,885,544	300,944	109,527	37,440	17,678,482	4,746,931	4,015	297,169	14,120	27,416	869	4,651
Kansas	410,067	65,644	18,391	10,478	10,007,397	3,133,635	149,525	346,163	17,098	21,916	21,577	1,249
Kentucky	655,795	134,141	5,473	8,659	2,347,489	195,723	-	10,416	7,008	14,036	214	-
Louisiana	289,774	19,953	626	657	774,904	65,458	-	1,717	487	2,327	1,650	15
Maine	21,567	6,589	1,575	3,031	96,000	22,350	-	2,956	3,888	7,264	-	-
Maryland	634,417	14,943	2,952	4,938	1,279,773	50,889	-	7,583	6,369	12,570	-	-
Massachusetts	6,546	3,712	589	1,092	34,570	9,007	-	1,572	1,432	2,637	-	-
Michigan	444,717	127,203	38,826	23,490	2,884,536	682,853	1,898	34,889	74,989	55,398	112	-
Minnesota	1,716,122	166,354	58,529	76,430	8,603,037	1,796,158	2,704	113,411	64,050	229,103	0	-
Mississippi	1,367,773	16,777	4,262	493	3,171,021	189,642	-	2,017	406	1,797	54,333	11
Missouri	1,165,531	85,888	28,721	3,832	4,743,410	835,603	58,296	53,941	7,408	10,772	10,933	637
Montana	67,087	35,207	1,721	930	757,867	189,758	-	11,205	937	4,656	1,164	-
Nebraska	587,106	76,056	4,031	7,410	9,553,155	4,856,969	148,932	392,843	814	8,389	25,407	3,772
Nevada	16,863	5,690	1,836	3,383	139,638	39,919	3,944	10,474	3,408	7,261	737	-
New Hampshire	14,523	2,619	632	1,230	56,239	10,966	-	922	1,555	2,903	-	-
New Jersey	27,230	4,452	273	504	83,421	8,076	-	1,878	640	1,243	-	-
New Mexico	285,569	87,051	12,650	24,121	667,031	190,894	7,495	64,432	2,937	54,640	1,083	-
New York	298,568	140,773	2,230	7,184	1,805,401	438,121	-	103,066	53,322	358,351	-	-
North Carolina	2,730,054	41,649	10,951	3,924	9,763,659	607,037	-	12,748	1,473	25,117	217	-
North Dakota	57,590	28,142	1,622	2,370	501,919	283,638	5,061	83,385	1,181	7,933	1,097	399
Ohio	1,072,586	94,814	37,390	48,255	4,237,014	728,349	3,371	29,141	19,517	26,233	300	730
Oklahoma	705,842	36,844	13,227	3,346	3,464,743	536,681	203,875	95,239	35,047	15,199	21,862	1,456
Oregon	107,938	25,285	7,629	14,550	705,634	232,777	-	13,690	18,080	50,249	964	45
Pennsylvania	1,122,754	111,223	29,968	56,134	3,854,540	639,780	-	84,202	72,509	124,963	198	-
Rhode Island	1,528	315	38	65	5,258	815	-	217	78	154	-	-
South Carolina	587,832	12,352	922	739	1,485,074	59,019	-	2,518	969	2,797	-	16
South Dakota	329,572	57,310	14,524	23,958	3,516,796	1,158,399	62,215	269,252	2,380	23,688	6,812	10,568
Tennessee	413,796	30,205	1,964	2,676	1,532,599	132,140	3,747	4,166	3,932	21,045	241	-
Texas	2,224,854	263,194	31,012	55,771	13,355,819	3,499,045	352,290	514,619	97,863	236,875	263,786	24,990
Utah	188,318	14,604	8,309	9,545	824,597	135,748	17,609	30,281	9,669	20,694	2,798	-
Vermont	44,994	21,831	7,413	14,208	251,795	73,582	-	3,215	18,345	18,521	-	-
Virginia	751,724	49,094	8,375	12,269	2,386,571	180,210	-	3,175	13,650	11,426	2	-
Washington	193,892	45,624	15,878	30,566	1,309,360	481,059	-	29,097	37,336	142,870	263	-
West Virginia	213,652	18,669	738	502	677,804	47,213	-	10,494	425	4,471	61	-
Wisconsin	624,199	197,276	80,070	152,150	4,179,163	1,244,031	2,841	213,010	80,525	439,954	25	-
Wyoming	29,556	21,721	916	939	541,570	171,254	-	13,141	950	3,390	1,876	-
U.S. Total	35,431,597	3,276,010	1,124,702	952,891	159,428,606	32,559,519	1,174,123	3,253,490	935,535	5,213,918	567,050	49,955

State (All numbers are in \$T)	Meat and Bone Meal	Feather Meal	Meat Meal	Poultry Byproduct Meal	Bloodmeal	Fishmeal	Corn Silage	Alfalfa Hay	Other Hay	Legume Silage	Sorghum Silage	Corn Stalks
Alabama	1,093	154	13	6,159	-	151	406,890	132,342	571,912	2,746	-	-
Alaska	919	61	9	-	14	25	1,994	754	6,142	-	-	-
Arizona	31,394	19	103	32,097	9	226	1,931,573	567,007	1,165,193	530,389	75,366	-
Arkansas	42,218	2,260	218	36,408	11	409	523,677	162,972	720,649	5,491	-	-
California	12,194	147	657	65,194	10,940	2,143	9,345,822	13,247,120	3,775,173	2,387,061	-	-
Colorado	39,213	144	309	25,888	67	811	3,793,793	2,385,935	2,603,508	394,530	302,433	-
Connecticut	1,655	44	40	2,935	20	114	159,827	63,302	53,053	25,837	-	-
Delaware	231	-	3	16,839	-	1	23,566	8,965	8,783	3,650	-	-
Florida	14,614	4,813	209	56,064	55	1,161	1,148,832	360,745	1,052,118	126,300	-	-
Georgia	14,243	1,796	57	52,875	26	246	902,009	325,127	629,322	126,300	-	-
Hawaii	557	21	22	-	66	526	10,019	1,662	3,172	-	-	-
Idaho	94,701	1,172	1,143	103,717	541	3,352	4,262,097	3,898,494	1,485,805	1,817,883	-	17,185
Illinois	9,116	8	29	28,278	3,198	115	1,440,539	462,660	827,409	184,676	-	218,783
Indiana	34,627	25	111	55,943	7,572	260	1,758,844	984,140	511,575	273,245	-	215,443
Iowa	32,752	17	32	91,180	879	224	6,069,710	2,436,319	1,311,287	552,451	-	1,209,426
Kansas	33,746	4	73	64,618	637	143	8,460,643	738,786	4,288,998	672,040	2,687,557	748,435
Kentucky	4,562	27,081	64	24,334	6	180	1,263,288	296,461	1,120,531	62,437	-	-
Louisiana	1,743	12,101	32	7,913	-	100	304,347	108,049	391,631	10,983	-	-
Maine	2,225	29	32	3,998	13	79	223,753	82,768	77,303	35,024	-	-
Maryland	3,768	344	453	25,103	159	1,464	404,966	143,396	164,040	56,724	-	-
Massachusetts	816	61	80	1,453	28	255	85,961	32,911	34,969	12,717	-	-
Michigan	38,844	229	116	76,090	841	304	3,517,882	722,570	1,030,287	782,872	-	322,329
Minnesota	41,641	18,481	77	135,901	15	237	4,842,052	1,485,482	1,296,188	695,505	-	365,144
Mississippi	1,532	52,462	75	27,018	0	137	300,746	103,045	393,683	8,237	-	-
Missouri	37,490	58	84	21,525	259	309	2,613,702	743,679	3,986,170	312,541	-	211,927
Montana	7,114	69	66	1,411	32	179	1,676,099	1,359,449	1,930,233	12,355	-	-
Nebraska	45,277	69	173	18,050	32	346	7,747,451	3,541,572	4,239,124	539,694	548,052	1,972,436
Nevada	5,293	19	18	5,121	9	51	377,583	194,797	216,882	45,397	841	-
New Hampshire	900	49	45	1,636	22	217	89,628	33,736	30,653	14,013	-	-
New Jersey	400	9	13	710	4	26	48,453	21,113	28,460	5,961	-	-
New Mexico	43,534	43	51	44,456	20	160	2,059,655	794,895	1,135,871	579,258	64,491	23,326
New York	18,845	85	173	97,595	5,527	426	5,368,974	286,558	1,575,644	2,564,902	-	-
North Carolina	1,213	22,335	733	165,441	6,019	1,140	467,221	293,988	343,174	54,112	-	-
North Dakota	4,049	535	3	2,923	1	8	1,511,671	602,379	1,921,952	40,527	-	139,992
Ohio	28,692	65	418	63,446	10,137	743	2,456,742	1,231,814	828,916	367,316	-	298,187
Oklahoma	25,459	6	106	16,529	3	163	1,379,659	539,474	1,988,754	129,854	185,881	116,864
Oregon	14,350	174	162	19,157	80	456	1,343,050	801,670	789,717	329,377	-	22,382
Pennsylvania	45,585	217	439	94,345	100	891	4,274,534	746,749	1,977,423	920,044	-	10,911
Rhode Island	58	19	18	99	9	51	6,349	2,238	3,410	730	-	-
South Carolina	1,376	6,116	13	26,147	1	68	160,114	55,486	168,171	12,355	-	-
South Dakota	42,005	11	15	57,549	5	48	4,377,175	1,767,595	3,184,598	357,832	95,226	347,710
Tennessee	614	18,123	51	10,305	3,971	154	866,109	268,277	842,915	36,075	-	-
Texas	118,847	15	314	237,499	7	903	12,220,228	1,497,631	9,046,469	1,988,558	798,943	1,213,368
Utah	25,441	66	110	18,505	30	205	950,825	516,961	394,659	126,860	5,043	-
Vermont	10,374	41	38	18,336	19	108	973,701	424,958	243,405	187,728	-	-
Virginia	13,300	24,331	73	38,889	30	220	1,030,456	438,824	752,617	92,961	-	6,568
Washington	40,737	209	194	39,794	97	622	2,207,417	1,432,992	1,010,253	642,275	-	13,342
West Virginia	2,015	7,928	143	7,105	829	500	199,871	68,183	212,987	6,937	-	-
Wisconsin	149,838	83,423	294	6,929	1,635	1,050	11,813,702	1,940,391	1,373,410	4,994,843	-	15,667
Wyoming	3,526	48	44	1,433	22	125	964,593	210,251	1,197,613	12,355	-	-
U.S. Total	1,144,737	285,538	7,752	1,954,941	53,998	21,834	118,367,787	48,566,671	62,946,208	23,141,959	4,763,832	7,489,425

State (All numbers are in ST)	Wheat	Barley	Cottonseed	Oats	Millet	Rye	Wheat Middlings	Wheat Flour	Wheat Straw	Miscellaneous Byproduct Feeds	Rice Mill Feed	Sugar Beet Pulp
Alabama	163,030	-	1,741	5,335	-	-	65,433	88	1,037	110	7,914	25,646
Alaska	29	5,666	2	854	-	-	1,234	32	-	-	605	1,970
Arizona	21,592	-	36,469	15,946	-	-	19,595	368	-	-	8,768	32,807
Arkansas	142,704	-	2,340	14,683	-	-	69,107	1,689	1,228	678	9,920	29,042
California	3,471	-	669,766	60,727	-	-	193,276	9,213	331,326	700,858	31,880	131,400
Colorado	35,884	10,366	14,466	29,969	27	-	70,931	5,706	-	4,616	12,060	91,956
Connecticut	2,196	123	-	3,630	-	1	11,571	173	9	3,094	2,257	6,792
Delaware	1,891	142	-	774	-	1	5,936	49	2	77,533	480	1,460
Florida	7,222	-	2,601	17,183	-	-	137,135	6,451	-	9,242	25,691	171,243
Georgia	192,987	-	2,281	5,912	-	-	85,127	502	-	453	8,621	28,465
Hawaii	514	-	40	958	-	-	1,706	45	-	-	446	2,157
Idaho	13,794	15,400	-	18,326	-	-	50,620	3,867	38,881	2,095	7,771	90,110
Illinois	133,543	-	-	14,527	-	-	212,779	40,215	4,647	46,987	8,757	26,882
Indiana	104,629	-	-	17,320	-	-	317,268	31,082	-	36,546	10,356	32,239
Iowa	337,948	-	19,704	15,954	-	-	796,360	151,959	-	-	9,065	29,830
Kansas	328,115	-	54,693	15,569	-	-	60,298	8,602	10,294	5	8,287	29,735
Kentucky	19,549	-	492	11,703	-	-	98,187	11,522	47,679	38,613	17,119	55,480
Louisiana	930	-	3,054	5,903	-	-	43,062	4,916	482	14,152	8,831	27,396
Maine	545	192	-	2,731	-	1	10,927	148	14	4,296	1,673	5,351
Maryland	5,225	988	-	9,359	-	7	28,704	1,350	247	93,880	5,793	17,738
Massachusetts	851	358	-	2,902	-	2	6,718	292	7	1,575	1,777	5,702
Michigan	3,971	152,780	668	18,824	-	-	149,525	15,129	219,360	-	11,285	34,504
Minnesota	11,626	509,199	2,380	13,681	-	-	458,235	100,163	415,652	-	7,933	25,402
Mississippi	7,454	-	2,619	4,272	-	-	153,145	23,355	606	65,292	7,959	20,127
Missouri	6,971	-	19,171	25,903	-	-	355,869	60,588	-	14,686	37,191	49,558
Montana	9,736	37,533	1,519	15,739	-	-	35,686	3,057	180,798	1,208	6,317	29,772
Nebraska	76,998	-	6,033	10,565	-	-	63,822	2,584	-	4,144	6,174	686,494
Nevada	3,754	75	5,883	4,272	-	-	3,545	67	-	-	2,370	9,684
New Hampshire	381	214	-	1,026	-	2	7,421	213	7	1,680	615	2,122
New Jersey	4,940	285	-	5,528	-	2	20,137	101	5	789	3,413	10,585
New Mexico	4,109	85	51,420	12,372	-	-	17,922	143	-	-	6,840	25,415
New York	4,937	1,691	-	14,832	-	-	73,209	693	989	817	9,022	29,871
North Carolina	269,478	-	1,043	9,265	-	-	667,662	126,977	-	201,858	156,995	51,543
North Dakota	13,343	17,674	56	5,394	6,241	-	12,083	601	139,287	-	2,601	10,875
Ohio	70,426	-	-	25,740	-	-	266,163	20,677	14,705	21,761	15,325	47,660
Oklahoma	71,896	-	15,264	30,839	-	-	46,694	5,500	5,457	15,832	17,089	61,126
Oregon	18,112	19,273	-	16,354	-	-	36,396	1,333	7,235	4,131	8,046	75,642
Pennsylvania	5,720	69,593	-	21,587	-	525	249,221	17,370	2,679	153,152	13,216	43,149
Rhode Island	195	56	-	242	-	0	818	77	1	122	148	479
South Carolina	5,790	-	2,674	3,394	-	-	138,510	23,025	-	35,323	4,962	33,101
South Dakota	75,238	-	19,187	20,356	17,271	-	69,680	6,869	188,326	11	5,049	18,577
Tennessee	13,893	-	1,057	20,599	-	-	54,498	7,811	31,328	20,588	11,320	42,498
Texas	76,937	-	1,420,649	93,591	-	-	95,194	48	89,919	53,784	100,179	207,100
Utah	38,861	8,554	17,391	10,630	-	-	10,768	569	-	-	9,392	25,927
Vermont	852	263	-	1,857	-	2	8,217	203	40	2,051	1,107	3,966
Virginia	10,703	-	337	8,372	-	-	75,964	10,323	27,917	33,115	12,180	40,105
Washington	51,752	25,634	-	16,987	-	-	56,397	2,165	14,941	7,971	11,453	87,273
West Virginia	14,166	242	234	3,232	-	2	25,516	3,349	-	8,133	4,688	16,041
Wisconsin	2,942	258,075	463	14,139	-	-	113,774	7,821	238,132	-	8,345	26,932
Wyoming	664	96,008	1,563	20,793	-	-	32,051	1,398	77,258	49	5,160	27,177
U.S. Total	2,392,496	1,230,469	2,377,259	720,651	23,540	545	5,584,094	720,478	2,090,495	1,681,228	674,448	2,586,107

<u>State</u> (All numbers are in ST)	<u>Citrus Pulp</u>	<u>Peanut Hulls</u>	<u>Almond Hulls</u>	<u>Hominy Feed</u>	<u>Potato Pulp</u>	<u>Potato Peels</u>	<u>Potato Tubers</u>	<u>Non-corn Brewers Products</u>	<u>Alfalfa Meal</u>
Alabama	0	-	-	-	-	-	-	-	2,060
Alaska	0	-	169	-	-	-	-	-	363
Arizona	-	-	-	-	-	-	-	-	7,290
Arkansas	0	-	-	5	-	-	-	-	6,726
California	-	-	800,840	713	-	-	-	-	4,270
Colorado	-	-	25,674	-	-	-	-	-	1,615
Connecticut	-	-	-	-	-	-	-	-	2,070
Delaware	-	-	-	-	-	-	-	-	440
Florida	6,941	-	-	-	-	-	-	-	6,770
Georgia	0	-	-	129	-	-	-	-	2,286
Hawaii	0	-	265	-	-	-	-	-	267
Idaho	-	-	15,982	845	178,681	149,469	149,469	-	979
Illinois	-	-	-	161,131	-	-	-	1,498	8,033
Indiana	-	-	-	125,022	-	-	-	803	9,500
Iowa	-	-	-	331,975	-	-	-	3,076	8,315
Kansas	-	-	-	32,169	-	-	-	6,420	6,891
Kentucky	0	-	-	380	-	-	-	-	4,540
Louisiana	0	-	-	-	-	-	-	-	2,321
Maine	-	-	-	-	-	-	-	-	1,534
Maryland	-	-	-	-	-	-	-	-	5,314
Massachusetts	-	-	-	-	-	-	-	-	1,630
Michigan	-	-	-	1,552	-	-	-	-	10,351
Minnesota	-	-	-	11,511	-	-	-	-	7,277
Mississippi	0	-	-	-	-	-	-	-	1,666
Missouri	-	-	-	7,536	-	-	-	8,025	11,483
Montana	-	-	13,895	849	-	-	-	-	846
Nebraska	-	-	-	160,956	-	-	-	8,025	5,664
Nevada	-	-	-	63	-	-	-	-	1,945
New Hampshire	-	-	-	-	-	-	-	-	564
New Jersey	-	-	-	-	-	-	-	-	3,131
New Mexico	-	-	-	66	-	-	-	-	5,653
New York	-	-	-	-	-	-	-	-	8,276
North Carolina	2,008	-	-	-	-	-	-	-	3,622
North Dakota	562	-	-	6,824	-	-	-	4,200	2,386
Ohio	-	-	-	74,484	-	-	-	1,471	14,058
Oklahoma	-	-	-	-	-	-	-	-	14,210
Oregon	-	-	15,597	423	68,621	57,184	57,184	2,675	1,047
Pennsylvania	-	-	-	-	-	-	-	-	12,123
Rhode Island	-	-	-	-	-	-	-	-	135
South Carolina	1,320	-	-	61	-	-	-	-	1,316
South Dakota	-	-	-	91,090	-	-	-	8,159	4,631
Tennessee	259	-	-	236	-	-	-	-	9,413
Texas	-	-	-	29,893	-	-	-	-	42,716
Utah	-	-	-	6,989	-	-	-	-	4,758
Vermont	-	-	-	-	-	-	-	-	1,015
Virginia	0	-	-	30	-	-	-	-	3,230
Washington	-	-	19,093	74	145,610	121,709	121,709	-	1,534
West Virginia	68	-	-	-	-	-	-	-	1,243
Wisconsin	-	-	-	410	-	-	-	-	7,655
Wyoming	-	-	6,578	492	-	-	-	-	4,733
U.S. Total	11,158	-	898,094	1,045,909	392,911	328,362	328,362	44,353	269,896

State (All numbers are in ST)	Inedible Tallow	Yellow Grease	Corn Crude Oil	Distiller Corn Oil	Poultry Fat	Used Cooking Oil	Canola Oil	Choice White Grease	Molasses	Whey	Milk Replacer
Alabama	21	22,666	-	3,021	4,903	3,021	12	-	23,940	1	183
Alaska	-	-	-	-	13	-	-	395	290	-	6
Arizona	2,038	2	1,550	1,241	13,054	0	1,456	0	20,393	12	17,868
Arkansas	42	26,569	-	2,602	13,983	2,713	24	-	33,985	12	367
California	12,549	2,833	77,662	62,484	133,351	80	22,591	-	141,080	4	157,601
Colorado	77,215	3	-	-	85,592	3	76,457	1	56,737	59	18,509
Connecticut	270	11	-	3	2,202	1	152	-	1,942	0	1,695
Delaware	38	8,273	-	1,104	2,053	1,103	21	-	1,299	0	238
Florida	797	2,827	-	376	4,736	376	448	1	33,218	1	8,430
Georgia	776	25,242	-	3,365	10,644	3,365	437	-	25,887	3	8,430
Hawaii	-	-	-	-	18	-	-	124	579	-	35
Idaho	9,415	4	18,762	11,187	86,611	2	8,017	-	64,892	2	60,566
Illinois	1,552	841	-	-	7,607	48	873	18,170	44,666	623	7,239
Indiana	4,463	10,601	-	-	25,799	600	2,510	15,782	45,375	541	17,134
Iowa	4,389	6,095	-	-	20,377	345	2,469	160,747	160,925	3,113	21,991
Kansas	1,341	343	-	273	4,363	13	754	16,701	90,915	233	16,035
Kentucky	1,045	11,772	-	1,534	7,711	1,538	588	-	48,539	54	4,123
Louisiana	84	6,044	-	806	1,576	806	47	-	14,050	1	733
Maine	365	29	-	4	2,919	4	205	-	2,539	0	2,291
Maryland	584	9,446	-	1,308	7,142	1,252	328	-	6,252	2	3,665
Massachusetts	131	15	-	8	1,119	1	74	-	1,357	1	825
Michigan	8,495	2,761	-	-	37,601	216	4,778	-	43,708	152	39,767
Minnesota	9,404	20,444	-	-	53,431	1,325	5,290	58,075	98,091	1,125	41,691
Mississippi	63	27,348	-	3,646	6,036	3,646	35	-	16,121	11	550
Missouri	490	9,794	-	7,791	1,458	2,893	276	4,216	122,988	347	5,864
Montana	117	12	92	94	798	14	83	-	81,370	23	825
Nebraska	908	132	-	105	2,056	724	511	57	96,857	435	5,131
Nevada	428	1	327	261	2,573	0	306	0	9,223	0	3,024
New Hampshire	146	5	-	1	1,229	1	82	-	1,007	0	916
New Jersey	60	30	-	18	502	2	34	-	1,436	1	376
New Mexico	2,937	9	2,231	1,785	18,150	0	2,098	2	31,272	0	25,748
New York	24,094	128	3,180	3,193	72,095	12	858	-	47,535	6	57,726
North Carolina	474	49,807	563	6,083	27,190	5,633	379	1,990	49,370	911	3,574
North Dakota	289	425	-	-	1,618	18	163	-	63,944	14	1,283
Ohio	5,966	3,445	-	-	34,238	195	3,356	9,178	48,182	315	22,907
Oklahoma	316	10,044	-	1,288	3,991	1,299	178	-	57,375	218	3,574
Oregon	1,752	5	3,418	2,019	15,914	489	1,478	-	26,580	1	11,270
Pennsylvania	6,785	10,205	-	1,126	63,989	1,142	3,817	-	53,656	169	42,607
Rhode Island	7	12	-	7	91	1	4	-	120	0	46
South Carolina	95	13,386	-	1,417	6,501	1,417	53	726	9,436	15	825
South Dakota	3,033	1,901	-	1,512	5,880	69	1,706	818	115,201	251	17,134
Tennessee	316	7,696	375	1,326	6,580	1,026	253	-	35,903	37	2,382
Texas	5,272	32,262	-	4,238	36,833	4,251	2,966	-	158,652	133	59,558
Utah	1,193	2,363	911	729	8,697	86	853	629	19,693	22	8,430
Vermont	1,722	22	-	3	17,113	3	969	-	8,778	1	10,812
Virginia	1,503	15,216	51	1,558	16,243	1,570	856	-	35,429	31	6,139
Washington	3,618	5	7,187	4,283	32,921	724	3,076	-	32,461	4	23,274
West Virginia	61	4,451	72	519	3,265	475	49	-	10,752	0	458
Wisconsin	21,500	2,013	118,207	55,822	23,740	623	25,626	2,068	107,218	40	116,368
Wyoming	117	1	89	73	790	1	83	-	36,280	8	825
U.S. Total	218,274	347,542	234,677	188,215	937,294	43,125	177,679	289,680	2,237,497	8,932	861,044

State (All numbers are in ST)	Lysine	Threonine	DL Methionine	Valine	Dicalcium Phosphate	Limestone	Potassium Chloride	Salt	Minerals	Vitamins	Phytase	Tryptophan	Sodium Bicarbonate
Alabama	19,597	1,173	22,641	1,035	54,125	132,992	173	35,177	16,652	21,974	4,303	3	4,967
Alaska	44	2	60	-	109	481	1	91	114	51	9	0	-
Arizona	176	27	117	11	5,019	11,815	793	5,699	57,857	269	37	3	51
Arkansas	19,226	1,334	22,656	1,084	50,643	143,534	220	33,196	19,515	20,132	3,796	12	5,201
California	5,090	341	6,257	317	45,068	81,403	4,669	51,033	346,346	6,223	1,130	2	1,523
Colorado	1,770	297	398	23	12,540	32,463	2,051	10,909	147,013	586	81	44	112
Connecticut	8	1	62	6	860	4,761	45	592	3,364	144	20	0	28
Delaware	4,001	239	4,559	205	10,418	21,511	7	7,004	1,356	4,322	856	1	983
Florida	1,043	66	1,721	107	9,519	51,448	417	5,652	30,763	2,467	406	0	512
Georgia	21,942	1,338	25,601	1,189	65,614	179,296	322	42,248	28,627	25,392	4,918	6	5,707
Hawaii	39	3	51	-	196	1,128	4	126	313	65	11	1	-
Idaho	64	9	122	12	11,242	15,045	1,920	15,245	141,017	289	40	1	55
Illinois	8,976	1,880	1,828	46	31,439	72,926	611	17,559	44,093	948	127	311	223
Indiana	9,118	1,707	5,755	341	41,638	189,725	615	22,240	46,118	5,743	779	252	1,638
Iowa	39,091	7,885	10,072	305	119,224	350,247	2,329	71,652	167,947	6,067	817	1,591	1,464
Kansas	3,632	681	637	12	15,638	31,739	4,037	15,835	287,288	221	29	127	58
Kentucky	5,258	436	5,556	260	17,238	46,934	488	11,336	36,066	5,465	1,045	17	1,249
Louisiana	2,377	141	2,776	128	6,975	18,433	125	4,644	9,455	2,733	531	0	616
Maine	18	2	75	7	1,033	5,202	63	774	4,712	162	23	0	32
Maryland	4,564	276	5,243	239	13,045	29,628	118	9,033	9,677	5,047	990	1	1,147
Massachusetts	17	4	14	1	280	734	24	261	1,804	21	3	0	5
Michigan	2,354	430	1,888	127	20,366	83,689	1,111	14,988	82,330	2,446	334	66	608
Minnesota	18,403	3,355	8,002	323	50,502	109,740	1,652	37,951	121,041	2,746	335	597	1,552
Mississippi	11,030	720	12,462	567	30,875	72,678	125	19,890	11,310	12,023	2,358	10	2,720
Missouri	12,862	1,877	9,114	422	41,086	117,549	1,219	25,020	88,232	7,312	1,281	242	2,028
Montana	377	61	108	7	2,488	8,810	786	2,210	55,737	169	24	9	33
Nebraska	7,340	1,186	2,857	113	28,295	78,089	4,120	20,700	292,553	2,518	437	204	542
Nevada	3	0	2	0	568	485	130	844	9,448	4	1	0	1
New Hampshire	8	2	62	6	757	4,957	25	404	1,899	149	21	0	29
New Jersey	18	3	131	12	1,270	9,932	14	444	1,078	303	42	0	59
New Mexico	7	1	11	1	4,580	2,790	731	6,627	54,097	21	3	0	4
New York	112	19	364	32	13,284	29,182	1,516	15,718	112,819	780	109	2	155
North Carolina	28,029	3,928	21,922	1,027	89,778	193,213	173	49,221	16,237	18,763	3,503	230	4,932
North Dakota	559	104	171	6	2,118	4,495	681	2,205	48,341	37	3	18	28
Ohio	5,962	903	5,639	352	39,395	201,279	860	20,790	64,395	7,558	1,155	130	1,692
Oklahoma	8,686	1,164	4,431	190	30,316	52,398	813	17,256	58,639	3,985	776	107	913
Oregon	326	19	478	28	4,014	13,214	561	4,011	40,812	641	108	0	135
Pennsylvania	5,981	688	6,680	380	36,674	147,458	1,235	24,353	92,786	7,693	1,281	54	1,823
Rhode Island	5	1	8	1	59	330	2	31	138	12	2	0	3
South Carolina	4,828	368	5,660	276	12,195	34,960	60	8,206	5,255	4,723	873	3	1,325
South Dakota	4,416	819	1,055	31	16,805	33,174	1,791	13,516	128,363	341	38	147	150
Tennessee	3,408	273	3,557	162	10,433	24,449	348	7,128	25,524	3,443	672	10	777
Texas	13,559	1,042	14,351	696	58,676	167,417	5,451	46,473	393,801	15,022	2,820	39	3,341
Utah	1,258	181	1,004	70	8,008	34,708	308	4,965	22,737	980	118	15	337
Vermont	15	2	20	1	1,983	1,626	271	2,739	20,157	32	5	0	7
Virginia	5,931	478	6,833	332	14,693	35,910	384	11,282	28,743	5,350	985	7	1,596
Washington	490	30	812	52	7,937	28,411	959	7,645	70,059	1,205	195	0	248
West Virginia	1,675	120	2,021	99	4,177	12,239	91	2,972	6,801	1,669	307	0	475
Wisconsin	2,018	240	2,032	112	28,240	51,432	3,221	33,205	238,702	2,109	342	29	538
Wyoming	185	38	34	0	1,194	2,218	415	1,173	29,435	7	1	6	1
U.S. Total	285,895	35,893	227,913	10,755	1,072,628	2,978,278	48,086	762,271	3,521,568	210,358	38,079	4,299	51,622

State (All numbers are in \$T)	Corn-Related	Soy-Related	Small Grains	Other Plant- based Meal	Processed Plant Co- Products	Animal Byproduct Meals	Fats & Oils	Forages & Roughage	Other Feed Ingredients	Synthetic Amino Acids	Vitamins & Minerals	Unique Ingredients from Aquaculture	Total
Alabama	5,430,135	2,818,921	168,365	25,956	125,191	7,571	130,569	1,114,926	983	44,448	270,362	879	10,138,305
Alaska	15,940	7,561	6,549	11	4,662	1,029	648	8,890	6	107	857	17	46,277
Arizona	1,901,256	309,409	37,538	76,926	89,222	63,848	28,873	4,269,528	17,880	334	81,542	111	6,876,467
Arkansas	5,907,405	2,757,166	157,387	11,182	151,147	81,524	136,896	1,414,017	593	44,311	276,237	458	10,938,324
California	6,520,298	1,268,329	64,198	3,226,745	2,012,819	91,275	368,037	29,086,502	157,655	12,008	537,395	1,203	43,346,463
Colorado	5,906,515	547,303	76,246	397,365	269,296	66,432	317,254	9,480,197	18,572	2,533	205,755	440	17,287,908
Connecticut	95,578	26,279	5,951	5,336	27,901	4,809	3,878	302,029	1,695	77	9,813	76	483,424
Delaware	995,530	534,294	2,807	761	87,196	17,074	13,065	44,966	238	9,004	46,456	0	1,751,392
Florida	971,548	391,472	24,405	30,346	396,690	76,916	13,468	2,687,995	8,452	2,937	101,183	365	4,705,778
Georgia	6,453,775	3,267,465	198,899	26,117	151,341	69,242	160,965	1,982,758	8,467	50,076	352,124	223	12,721,452
Hawaii	43,139	9,340	1,473	935	5,466	1,191	640	14,852	43	94	1,843	75	79,091
Idaho	2,912,764	427,481	47,520	263,459	713,935	204,627	176,869	11,520,345	60,569	208	184,854	2,154	16,514,785
Illinois	5,303,844	717,519	148,070	13,376	388,320	40,744	51,022	3,138,713	7,889	13,042	167,925	120	9,990,582
Indiana	5,659,520	1,270,867	121,949	20,745	482,365	98,538	105,445	3,743,247	17,677	17,172	308,496	138	11,846,161
Iowa	23,072,692	3,223,928	353,903	55,839	1,156,454	125,084	304,017	11,579,193	25,113	58,944	719,747	117	40,675,031
Kansas	13,685,986	486,189	343,684	105,855	204,733	99,220	42,243	17,606,753	16,298	5,090	354,845	115	32,951,012
Kentucky	2,561,015	798,595	31,252	14,864	273,999	56,227	29,720	2,790,395	4,186	11,528	119,821	67	6,691,670
Louisiana	842,566	310,383	6,833	7,046	114,728	21,889	10,013	815,491	748	5,423	43,512	60	2,178,693
Maine	125,193	31,187	3,470	7,268	26,467	6,377	5,147	418,862	2,291	102	12,002	51	638,418
Maryland	1,344,613	654,298	15,579	12,623	159,031	31,291	23,585	769,373	3,668	10,323	68,685	696	3,093,766
Massachusetts	46,581	11,349	4,114	2,646	19,053	2,693	2,039	166,564	825	35	3,133	151	259,184
Michigan	3,680,717	595,410	175,576	56,194	264,503	116,423	92,867	6,595,299	39,922	4,864	205,873	193	11,827,842
Minnesota	10,590,870	1,958,907	534,505	231,547	697,102	196,351	206,561	9,100,023	42,816	30,680	325,519	94	23,914,975
Mississippi	3,363,086	1,385,043	11,726	58,760	287,664	81,223	47,842	806,317	2,515	24,788	151,979	2,011	6,222,954
Missouri	5,706,194	1,255,450	32,875	49,668	652,364	59,724	55,815	7,868,019	6,252	24,517	283,727	195	15,994,800
Montana	960,616	103,224	63,008	7,350	172,150	8,871	3,042	5,158,935	848	562	70,257	119	6,548,982
Nebraska	15,113,669	670,572	87,563	51,695	865,739	63,948	8,679	18,588,329	5,577	11,699	427,254	196	35,894,920
Nevada	197,447	25,936	8,101	13,884	26,833	10,511	5,763	835,499	3,024	5	11,480	34	1,138,518
New Hampshire	69,682	18,373	1,623	3,029	13,623	2,869	2,191	168,036	917	78	8,240	88	288,750
New Jersey	94,014	32,186	10,755	1,244	39,592	1,162	933	103,992	376	166	13,142	16	297,579
New Mexico	932,856	396,741	16,566	107,150	87,245	88,264	39,932	4,657,497	25,748	19	68,854	97	6,420,969
New York	2,399,910	446,525	21,459	358,364	169,421	122,652	105,953	9,797,067	57,737	530	173,563	266	13,653,446
North Carolina	10,384,916	2,775,627	278,743	26,408	1,260,035	196,881	103,472	1,158,494	4,494	55,137	375,820	597	16,620,624
North Dakota	882,007	88,102	42,653	13,684	93,053	7,520	4,140	4,355,809	1,296	858	57,907	6	5,547,036
Ohio	5,091,875	1,215,655	96,165	28,806	433,826	103,501	93,994	5,197,679	23,251	12,987	337,124	443	12,635,306
Oklahoma	4,335,585	746,033	102,736	53,781	217,825	42,267	30,381	4,345,944	3,804	14,579	165,096	115	10,058,143
Oregon	970,605	147,773	53,739	53,960	351,761	34,380	32,992	3,293,431	11,276	851	63,496	308	5,014,571
Pennsylvania	4,651,031	1,290,110	97,425	125,195	541,887	141,578	117,452	7,932,340	42,795	13,783	313,302	581	15,267,478
Rhode Island	6,368	1,908	494	157	1,898	255	192	12,729	46	15	576	34	24,670
South Carolina	1,547,641	600,922	9,185	5,488	246,993	33,720	24,535	396,126	843	11,134	67,598	59	2,944,244
South Dakota	5,100,132	410,839	112,866	68,417	220,019	99,634	29,465	10,318,462	17,387	6,468	194,177	35	16,577,901
Tennessee	1,676,819	446,677	34,493	22,348	182,289	33,218	19,614	2,044,703	2,424	7,410	72,775	106	4,542,875
Texas	17,849,530	2,543,818	170,528	1,946,542	657,674	357,585	117,054	26,855,116	59,782	29,687	692,999	472	51,280,787
Utah	1,024,893	212,467	58,045	40,893	71,107	44,357	23,882	1,994,348	8,452	2,530	72,162	124	3,553,260
Vermont	346,938	81,033	2,972	18,527	25,337	28,916	27,311	1,829,831	10,813	39	26,820	72	2,398,608
Virginia	2,583,636	813,086	19,075	11,776	210,347	76,844	45,480	2,349,343	6,170	13,581	98,943	137	6,228,418
Washington	1,856,927	270,083	94,373	143,166	607,373	81,654	68,033	5,321,220	23,279	1,383	116,660	382	8,584,533
West Virginia	735,936	232,823	17,642	4,789	69,790	18,519	9,885	487,978	465	3,914	28,732	309	1,610,783
Wisconsin	5,719,981	973,625	275,156	440,475	271,745	243,169	330,033	20,376,144	116,409	4,431	357,789	513	29,109,471
Wyoming	727,406	52,216	117,465	6,837	113,426	5,198	2,147	2,462,070	833	263	34,444	83	3,522,388
U.S. Total	198,397,183	39,660,497	4,367,702	8,255,535	15,712,637	3,468,800	3,574,033	267,366,378	873,401	564,754	8,682,891	15,203	550,939,013

<u>State</u> (All numbers are in ST)	<u>Circular</u> <u>Ingredient</u>	<u>Non-circular</u> <u>Ingredient</u>	<u>Unique</u> <u>Ingredients</u> <u>from</u> <u>Aquaculture</u>	<u>Total</u>
Alabama	3,318,225	6,819,201	879	10,138,305
Alaska	15,466	30,795	17	46,277
Arizona	1,032,610	5,843,746	111	6,876,467
Arkansas	3,358,435	7,579,430	458	10,938,324
California	8,210,422	35,134,837	1,203	43,346,463
Colorado	1,465,918	15,821,550	440	17,287,908
Connecticut	83,949	399,399	76	483,424
Delaware	659,852	1,091,540	0	1,751,392
Florida	1,045,911	3,659,501	365	4,705,778
Georgia	3,926,036	8,795,194	223	12,721,452
Hawaii	20,480	58,535	75	79,091
Idaho	2,601,214	13,911,416	2,154	16,514,785
Illinois	2,479,250	7,511,212	120	9,990,582
Indiana	3,041,672	8,804,351	138	11,846,161
Iowa	11,318,577	29,356,337	117	40,675,031
Kansas	5,196,612	27,754,284	115	32,951,012
Kentucky	1,419,908	5,271,695	67	6,691,670
Louisiana	530,863	1,647,769	60	2,178,693
Maine	100,806	537,561	51	638,418
Maryland	937,234	2,155,836	696	3,093,766
Massachusetts	47,963	211,070	151	259,184
Michigan	2,394,274	9,433,374	193	11,827,842
Minnesota	5,917,220	17,997,660	94	23,914,975
Mississippi	2,047,572	4,173,371	2,011	6,222,954
Missouri	3,156,847	12,837,758	195	15,994,800
Montana	675,292	5,873,572	119	6,548,982
Nebraska	9,033,016	26,861,709	196	35,894,920
Nevada	130,916	1,007,568	34	1,138,518
New Hampshire	51,521	237,141	88	288,750
New Jersey	84,894	212,669	16	297,579
New Mexico	959,831	5,461,041	97	6,420,969
New York	1,784,836	11,868,344	266	13,653,446
North Carolina	4,968,443	11,651,584	597	16,620,624
North Dakota	856,660	4,690,370	6	5,547,036
Ohio	2,951,308	9,683,555	443	12,635,306
Oklahoma	1,863,018	8,195,010	115	10,058,143
Oregon	888,149	4,126,114	308	5,014,571
Pennsylvania	2,936,218	12,330,679	581	15,267,478
Rhode Island	5,388	19,249	34	24,670
South Carolina	972,513	1,971,671	59	2,944,244
South Dakota	2,845,578	13,732,288	35	16,577,901
Tennessee	870,656	3,672,113	106	4,542,875
Texas	10,977,661	40,302,655	472	51,280,787
Utah	555,706	2,997,429	124	3,553,260
Vermont	253,662	2,144,874	72	2,398,608
Virginia	1,367,476	4,860,806	137	6,228,418
Washington	1,689,179	6,894,972	382	8,584,533
West Virginia	392,375	1,218,100	309	1,610,783
Wisconsin	3,674,515	25,434,444	513	29,109,471
Wyoming	440,834	3,081,470	83	3,522,388
U.S. Total	115,556,961	435,366,849	15,203	550,939,013

6.4.2 Broilers

State (All numbers are in ST)	Soybean Meal	Soybean Oil	Corn	Corn DDGs	Sorghum	Canola Meal	Meat and Bone Meal	Feather Meal	Poultry Byproduct Meal
Alabama	2,650,126	81,222	4,671,427	191,356	-	-	-	-	-
Alaska	4,425	166	4,548	716	-	-	430	-	-
Arizona	34	0	86	2	2	-	1	-	1
Arkansas	2,282,642	69,959	4,023,656	164,822	-	-	-	-	-
California	474,153	-	1,049,087	23,572	-	111,794	4,036	-	18,316
Colorado	867	-	2,574	17	70	56	43	-	43
Connecticut	599	0	1,070	15	-	-	-	-	10
Delaware	521,386	310	951,802	4,659	-	-	-	-	16,429
Florida	115,107	106	245,988	5,422	-	-	-	991	2,106
Georgia	2,952,019	90,474	5,203,580	213,155	-	-	-	-	-
Hawaii	4,034	152	6,319	653	1,306	-	392	-	-
Idaho	112	-	261	7	-	-	4	-	-
Illinois	2,639	-	6,736	268	-	-	2	-	208
Indiana	74,766	-	190,823	7,589	-	-	65	-	5,897
Iowa	26,661	-	68,045	2,706	-	-	23	-	2,103
Kansas	177	-	457	13	-	-	3	-	-
Kentucky	502,336	431	1,161,133	35,905	-	-	-	21,882	9,300
Louisiana	263,839	227	609,856	18,858	-	-	-	11,493	4,884
Maine	1,590	1	2,692	93	-	-	-	-	23
Maryland	590,890	352	1,078,683	5,280	-	-	-	-	18,620
Massachusetts	427	0	762	11	-	-	-	-	7
Michigan	20,738	-	52,535	1,850	-	-	295	-	540
Minnesota	103,801	-	262,952	9,262	-	-	1,475	-	2,702
Mississippi	1,193,885	1,025	2,759,624	85,335	-	-	-	52,005	22,102
Missouri	516,665	-	1,326,401	39,267	-	-	6,723	-	-
Montana	859	-	2,000	55	-	-	34	-	-
Nebraska	145,786	-	374,267	11,080	-	-	1,897	-	-
Nevada	8	0	20	1	0	-	0	-	0
New Hampshire	238	0	403	14	-	-	-	-	4
New Jersey	596	0	1,088	5	-	-	-	-	19
New Mexico	57	0	145	4	3	-	1	-	2
New York	5,474	3	9,268	320	-	-	-	-	81
North Carolina	1,722,219	1,584	3,680,439	81,120	-	-	-	14,831	31,516
North Dakota	367	-	929	33	-	-	5	-	10
Ohio	216,379	-	552,255	21,963	-	-	188	-	17,066
Oklahoma	438,175	362	855,431	32,492	38,396	-	1,589	-	-
Oregon	31,859	-	74,162	2,046	-	-	1,272	-	-
Pennsylvania	509,739	317	862,956	29,841	-	-	-	-	7,520
Rhode Island	254	0	453	6	-	-	-	-	4
South Carolina	433,345	399	926,074	20,411	-	-	-	3,732	7,930
South Dakota	374	-	966	28	-	-	6	-	-
Tennessee	335,916	289	776,458	24,010	-	-	-	14,632	6,219
Texas	1,441,460	1,192	2,814,105	106,888	126,311	-	5,229	-	-
Utah	72	0	185	5	3	-	2	-	3
Vermont	1,223	1	2,070	72	-	-	-	-	18
Virginia	496,548	427	1,147,753	35,491	-	-	-	21,630	9,193
Washington	47,223	-	109,927	3,033	-	-	1,885	-	-
West Virginia	151,045	130	349,134	10,796	-	-	-	6,579	2,796
Wisconsin	100,588	-	254,815	8,975	-	-	1,430	-	2,618
Wyoming	34	-	80	2	-	-	1	-	-
U.S. Total	18,383,756	249,130	36,476,482	1,199,525	166,092	111,850	27,033	147,775	188,290

State (All numbers are in ST)	Wheat	Barley	Wheat Middlings	Wheat Flour	Miscellaneous Byproduct Feeds	Yellow Grease	Distiller Corn Oil	Poultry Fat	Used Cooking Oil	Molasses
Alabama	160,745	-	-	-	-	22,658	3,021	4,815	3,021	4,672
Alaska	-	3,816	-	-	-	-	-	-	-	8
Arizona	2	-	1	0	-	1	0	0	0	0
Arkansas	138,455	-	-	-	-	19,516	2,602	4,147	2,602	4,025
California	-	-	32,455	8,114	99,183	-	-	-	-	1,065
Colorado	66	-	102	26	213	1	-	26	-	2
Connecticut	-	-	-	-	87	9	1	2	1	1
Delaware	-	-	-	-	77,052	8,272	1,103	1,758	1,103	955
Florida	-	-	23,904	5,976	9,125	2,823	376	600	376	245
Georgia	179,056	-	-	-	-	25,239	3,365	5,363	3,365	5,205
Hawaii	-	-	-	-	-	-	-	-	-	8
Idaho	13	16	10	3	6	-	-	-	2	0
Illinois	-	-	115	29	-	-	-	-	-	6
Indiana	-	-	3,248	812	-	-	-	-	-	171
Iowa	-	-	1,158	290	-	-	-	-	-	61
Kansas	-	-	8	2	5	-	-	-	1	0
Kentucky	-	-	37,199	9,300	26,858	11,506	1,534	2,445	1,534	1,081
Louisiana	-	-	19,538	4,884	14,106	6,043	806	1,284	806	568
Maine	-	-	-	-	215	26	4	6	4	3
Maryland	-	-	-	-	87,323	9,374	1,250	1,992	1,250	1,082
Massachusetts	-	-	-	-	62	6	1	1	1	1
Michigan	-	-	2,465	616	-	-	-	-	113	52
Minnesota	-	-	12,337	3,084	-	-	-	-	566	258
Mississippi	-	-	88,409	22,102	63,832	27,347	3,646	5,811	3,646	2,570
Missouri	-	-	33,420	8,355	14,686	-	-	-	2,550	1,183
Montana	102	122	80	20	50	-	-	-	13	2
Nebraska	-	-	9,430	2,358	4,144	-	-	-	719	334
Nevada	0	-	0	0	-	0	0	0	0	0
New Hampshire	-	-	-	-	32	4	1	1	1	0
New Jersey	-	-	-	-	88	9	1	2	1	1
New Mexico	4	-	2	0	-	1	0	0	0	0
New York	-	-	-	-	741	91	12	19	12	10
North Carolina	-	-	357,648	89,412	136,527	42,245	5,633	8,977	5,633	3,664
North Dakota	-	-	44	11	-	-	-	-	2	1
Ohio	-	-	9,401	2,350	-	-	-	-	-	496
Oklahoma	-	-	-	-	15,624	9,663	1,288	2,053	1,288	839
Oregon	3,766	4,524	2,975	744	1,837	-	-	-	489	74
Pennsylvania	-	-	-	-	68,995	8,445	1,126	1,795	1,126	899
Rhode Island	-	-	-	-	37	4	1	1	1	0
South Carolina	-	-	89,992	22,498	34,353	10,630	1,417	2,259	1,417	922
South Dakota	-	-	16	4	11	-	-	-	2	1
Tennessee	-	-	24,875	6,219	17,960	7,694	1,026	1,635	1,026	723
Texas	-	-	-	-	51,399	31,788	4,238	6,755	4,238	2,759
Utah	5	-	2	1	-	2	0	0	0	0
Vermont	-	-	-	-	166	20	3	4	3	2
Virginia	-	-	36,770	9,193	26,548	11,374	1,516	2,417	1,516	1,069
Washington	5,583	6,706	4,409	1,102	2,722	-	-	-	724	110
West Virginia	-	-	11,185	2,796	8,076	3,460	461	735	461	325
Wisconsin	-	-	11,955	2,989	-	-	-	-	548	250
Wyoming	4	5	3	1	2	-	-	-	1	0
U.S. Total	487,800	15,189	813,158	203,290	762,065	258,250	34,433	54,904	40,162	35,704

<u>State</u> (All numbers are in ST)	<u>Lysine</u>	<u>Threonine</u>	<u>DL</u> <u>Methionine</u>	<u>Valine</u>	<u>Dicalcium</u> <u>Phosphate</u>	<u>Limestone</u>	<u>Salt</u>	<u>Minerals</u>	<u>Vitamins</u>	<u>Phytase</u>	<u>Sodium</u> <u>Bicarbonate</u>
Alabama	19,493	1,146	22,035	976	47,940	83,819	33,152	4,102	20,508	4,102	4,687
Alaska	30	-	40	-	62	128	60	8	36	7	-
Arizona	0	0	0	0	1	1	1	0	0	0	0
Arkansas	16,790	987	18,980	841	41,293	72,196	28,555	3,533	17,664	3,533	4,037
California	4,442	261	5,022	223	10,925	19,102	7,555	935	4,674	935	1,068
Colorado	10	1	12	1	25	44	18	2	11	2	2
Connecticut	5	0	5	0	11	19	8	1	5	1	1
Delaware	3,985	234	4,504	200	9,800	17,134	6,777	838	4,192	838	958
Florida	1,022	60	1,155	51	2,513	4,394	1,738	215	1,075	215	246
Georgia	21,714	1,276	24,545	1,088	53,402	93,368	36,928	4,569	22,844	4,569	5,221
Hawaii	27	-	36	-	56	116	55	8	33	6	-
Idaho	1	0	1	0	3	5	2	0	1	0	0
Illinois	25	1	29	1	62	109	43	5	27	5	6
Indiana	715	42	808	36	1,759	3,075	1,216	150	752	150	172
Iowa	255	15	288	13	627	1,096	434	54	268	54	61
Kansas	2	0	2	0	4	7	3	0	2	0	0
Kentucky	4,511	265	5,099	226	11,094	19,397	7,672	949	4,746	949	1,085
Louisiana	2,369	139	2,678	119	5,827	10,188	4,029	499	2,493	499	570
Maine	12	1	13	1	29	50	20	2	12	2	3
Maryland	4,516	265	5,105	226	11,106	19,418	7,680	950	4,751	950	1,086
Massachusetts	3	0	4	0	8	14	5	1	3	1	1
Michigan	199	12	225	10	490	857	339	42	210	42	48
Minnesota	997	59	1,127	50	2,453	4,289	1,696	210	1,049	210	240
Mississippi	10,721	630	12,119	537	26,367	46,101	18,233	2,256	11,279	2,256	2,578
Missouri	4,933	290	5,577	247	12,133	21,213	8,390	1,038	5,190	1,038	1,186
Montana	8	0	9	0	20	36	14	2	9	2	2
Nebraska	1,392	82	1,574	70	3,424	5,986	2,367	293	1,464	293	335
Nevada	0	0	0	0	0	0	0	0	0	0	0
New Hampshire	2	0	2	0	4	8	3	0	2	0	0
New Jersey	5	0	5	0	11	20	8	1	5	1	1
New Mexico	1	0	1	0	1	2	1	0	1	0	0
New York	40	2	46	2	99	173	68	8	42	8	10
North Carolina	15,288	898	17,281	766	37,597	65,735	25,999	3,217	16,083	3,217	3,676
North Dakota	4	0	4	0	9	15	6	1	4	1	1
Ohio	2,070	122	2,339	104	5,090	8,899	3,520	435	2,177	435	498
Oklahoma	3,499	206	3,955	175	8,605	15,046	5,951	736	3,681	736	841
Oregon	308	18	349	15	759	1,326	525	65	325	65	74
Pennsylvania	3,749	220	4,238	188	9,221	16,121	6,376	789	3,944	789	901
Rhode Island	2	0	2	0	5	8	3	0	2	0	0
South Carolina	3,847	226	4,348	193	9,460	16,540	6,542	809	4,047	809	925
South Dakota	4	0	4	0	9	15	6	1	4	1	1
Tennessee	3,017	177	3,410	151	7,419	12,971	5,130	635	3,174	635	725
Texas	11,511	676	13,012	577	28,309	49,495	19,576	2,422	12,110	2,422	2,768
Utah	1	0	1	0	2	3	1	0	1	0	0
Vermont	9	1	10	0	22	39	15	2	9	2	2
Virginia	4,459	262	5,041	223	10,966	19,174	7,583	938	4,691	938	1,072
Washington	457	27	517	23	1,124	1,966	778	96	481	96	110
West Virginia	1,356	80	1,533	68	3,336	5,832	2,307	285	1,427	285	326
Wisconsin	967	57	1,093	48	2,377	4,156	1,644	203	1,017	203	232
Wyoming	0	0	0	0	1	1	1	0	0	0	0
U.S. Total	148,772	8,739	168,185	7,449	365,859	639,709	253,031	31,307	156,525	31,305	35,755

State (All numbers are in \$T)	Corn-Related	Soy-Related	Small Grains	Other Plant- based Meal	Processed Plant Co- Products	Animal Byproduct Meals	Fats & Oils	Synthetic Amino Acids	Vitamins & Minerals	Total
Alabama	4,862,783	2,650,126	160,745	-	4,672	-	114,737	43,650	198,309	8,035,022
Alaska	5,264	4,425	3,816	-	8	430	166	69	300	14,478
Arizona	90	34	2	-	1	2	1	1	3	135
Arkansas	4,188,477	2,282,642	138,455	-	4,025	-	98,826	37,598	170,810	6,920,832
California	1,072,660	474,153	-	111,794	140,816	22,352	-	9,948	45,193	1,876,915
Colorado	2,661	867	66	56	344	85	27	23	105	4,235
Connecticut	1,085	599	-	-	88	10	14	10	46	1,852
Delaware	956,461	521,386	-	-	78,007	16,429	12,545	8,923	40,538	1,634,290
Florida	251,410	115,107	-	-	39,250	3,098	4,282	2,288	10,395	425,830
Georgia	5,416,735	2,952,019	179,056	-	5,205	-	127,807	48,623	220,900	8,950,345
Hawaii	8,279	4,034	-	-	8	392	152	63	274	13,201
Idaho	268	112	29	-	20	4	2	2	11	449
Illinois	7,004	2,639	-	-	149	210	-	57	257	10,317
Indiana	198,412	74,766	-	-	4,232	5,962	-	1,601	7,275	292,248
Iowa	70,751	26,661	-	-	1,509	2,126	-	571	2,594	104,212
Kansas	471	177	-	-	15	3	1	4	17	687
Kentucky	1,197,038	502,336	-	-	74,438	31,181	17,451	10,101	45,892	1,878,438
Louisiana	628,714	263,839	-	-	39,097	16,377	9,166	5,306	24,104	986,602
Maine	2,785	1,590	-	-	218	23	40	26	119	4,801
Maryland	1,083,963	590,890	-	-	88,406	18,620	14,218	10,112	45,942	1,852,150
Massachusetts	773	427	-	-	63	7	10	7	33	1,319
Michigan	54,386	20,738	-	-	3,133	835	113	446	2,027	81,678
Minnesota	272,213	103,801	-	-	15,680	4,177	566	2,233	10,147	408,817
Mississippi	2,844,959	1,193,885	-	-	176,913	74,108	41,476	24,008	109,070	4,464,418
Missouri	1,365,667	516,665	-	-	57,644	6,723	2,550	11,047	50,189	2,010,484
Montana	2,056	859	224	-	152	34	13	19	85	3,441
Nebraska	385,347	145,786	-	-	16,265	1,897	719	3,117	14,162	567,293
Nevada	21	8	0	-	0	1	0	0	1	32
New Hampshire	417	238	-	-	33	4	6	4	18	718
New Jersey	1,093	596	-	-	89	19	14	10	46	1,868
New Mexico	151	57	4	-	2	4	2	1	6	226
New York	9,588	5,474	-	-	751	81	138	90	410	16,532
North Carolina	3,761,559	1,722,219	-	-	587,252	46,347	64,071	34,233	155,524	6,371,204
North Dakota	962	367	-	-	55	15	2	8	36	1,445
Ohio	574,218	216,379	-	-	12,247	17,254	-	4,634	21,054	845,786
Oklahoma	926,319	438,175	-	-	16,463	1,589	14,655	7,835	35,596	1,440,633
Oregon	76,208	31,859	8,291	-	5,629	1,272	489	691	3,138	127,575
Pennsylvania	892,798	509,739	-	-	69,894	7,520	12,808	8,395	38,141	1,539,294
Rhode Island	459	254	-	-	37	4	6	4	19	784
South Carolina	946,485	433,345	-	-	147,765	11,662	16,122	8,614	39,133	1,603,125
South Dakota	995	374	-	-	32	6	2	8	36	1,453
Tennessee	800,468	335,916	-	-	49,777	20,851	11,670	6,755	30,688	1,256,125
Texas	3,047,305	1,441,460	-	-	54,158	5,229	48,211	25,776	117,101	4,739,240
Utah	193	72	5	-	3	5	2	2	7	288
Vermont	2,142	1,223	-	-	168	18	31	20	92	3,693
Virginia	1,183,244	496,548	-	-	73,580	30,822	17,250	9,985	45,363	1,856,792
Washington	112,960	47,223	12,289	-	8,344	1,885	724	1,024	4,651	189,099
West Virginia	359,930	151,045	-	-	22,382	9,376	5,247	3,037	13,799	564,817
Wisconsin	263,790	100,588	-	-	15,194	4,048	548	2,164	9,833	396,166
Wyoming	82	34	9	-	6	1	1	1	3	138
U.S. Total	37,842,098	18,383,756	502,989	111,850	1,814,216	363,098	636,879	333,145	1,513,491	61,501,523

State (All numbers are in ST)	Circular Ingredient	Non-circular Ingredient	Total
Alabama	2,879,669	5,155,352	8,035,022
Alaska	5,579	8,899	14,478
Arizona	41	94	135
Arkansas	2,480,355	4,440,477	6,920,832
California	772,687	1,104,228	1,876,915
Colorado	1,397	2,839	4,235
Connecticut	725	1,127	1,852
Delaware	632,717	1,001,573	1,634,290
Florida	167,053	258,777	425,830
Georgia	3,207,712	5,742,633	8,950,345
Hawaii	5,087	8,114	13,201
Idaho	145	303	449
Illinois	3,267	7,050	10,317
Indiana	92,549	199,699	292,248
Iowa	33,002	71,210	104,212
Kansas	209	478	687
Kentucky	660,880	1,217,558	1,878,438
Louisiana	347,111	639,492	986,602
Maine	1,964	2,838	4,801
Maryland	717,062	1,135,089	1,852,150
Massachusetts	517	803	1,319
Michigan	26,669	55,009	81,678
Minnesota	133,485	275,332	408,817
Mississippi	1,570,691	2,893,727	4,464,418
Missouri	622,848	1,387,636	2,010,484
Montana	1,114	2,327	3,441
Nebraska	175,747	391,545	567,293
Nevada	10	22	32
New Hampshire	294	424	718
New Jersey	723	1,145	1,868
New Mexico	68	158	226
New York	6,760	9,771	16,532
North Carolina	2,499,424	3,871,780	6,371,204
North Dakota	472	973	1,445
Ohio	267,843	577,943	845,786
Oklahoma	503,012	937,621	1,440,633
Oregon	41,294	86,281	127,575
Pennsylvania	629,484	909,810	1,539,294
Rhode Island	307	477	784
South Carolina	628,906	974,219	1,603,125
South Dakota	442	1,011	1,453
Tennessee	441,935	814,190	1,256,125
Texas	1,654,754	3,084,486	4,739,240
Utah	87	201	288
Vermont	1,510	2,183	3,693
Virginia	653,265	1,203,527	1,856,792
Washington	61,208	127,891	189,099
West Virginia	198,716	366,100	564,817
Wisconsin	129,354	266,812	396,166
Wyoming	45	93	138
U.S. Total	22,260,195	39,241,328	61,501,523

6.4.3 Layers

State (All numbers are in \$T)	Soybean Meal	Soybean Oil	Corn	Corn DDGs	Sorghum	Canola Meal	Meat and Bone Meal	Poultry Byproduct Meal
Alabama	100,166	13,282	272,652	34,459	-	-	-	5,313
Alaska	670	58	2,360	396	-	-	93	-
Arizona	20,809	-	54,999	4,213	-	-	-	233
Arkansas	130,992	17,370	356,562	45,063	-	-	-	6,948
California	103,490	-	223,401	22,298	-	34,809	-	288
Colorado	49,149	-	123,333	741	6,250	-	-	1,369
Connecticut	10,651	-	27,376	1,091	-	-	-	-
Delaware	10,312	-	26,213	243	-	-	-	-
Florida	91,473	-	263,050	21,817	-	-	-	10,091
Georgia	174,154	23,093	474,050	59,912	-	-	-	9,237
Hawaii	2,188	208	5,319	943	937	-	97	-
Idaho	20,494	-	41,044	4,516	-	-	1,044	-
Illinois	61,457	-	181,337	20,902	-	-	-	-
Indiana	316,843	-	934,879	107,761	-	-	-	-
Iowa	384,711	-	1,135,134	130,844	-	-	-	-
Kansas	14,280	-	41,221	4,873	1,312	-	-	-
Kentucky	50,608	-	146,098	10,933	-	-	-	1,210
Louisiana	17,427	-	50,309	3,765	-	-	-	417
Maine	10,170	-	28,661	3,321	-	-	-	33
Maryland	23,369	-	59,407	550	-	-	-	-
Massachusetts	1,333	-	3,427	137	-	-	-	-
Michigan	147,285	-	434,582	50,093	-	-	-	-
Minnesota	62,928	-	185,675	21,402	-	-	-	-
Mississippi	53,992	-	155,865	11,664	-	-	-	1,290
Missouri	121,694	-	370,178	41,732	-	-	-	-
Montana	11,362	-	22,755	2,504	-	-	579	-
Nebraska	71,904	-	218,725	24,658	-	-	-	-
Nevada	323	-	854	65	-	-	-	4
New Hampshire	9,987	-	28,146	3,261	-	-	-	32
New Jersey	23,728	-	60,319	558	-	-	-	-
New Mexico	1,533	-	4,052	310	-	-	-	17
New York	49,900	-	140,627	16,292	-	-	-	160
North Carolina	137,188	-	394,514	32,721	-	-	-	15,135
North Dakota	1,173	-	3,462	399	-	-	-	-
Ohio	362,874	-	1,070,699	123,417	-	-	-	-
Oklahoma	22,766	-	59,363	4,590	6,461	-	-	531
Oregon	22,506	-	45,073	4,960	-	-	1,147	-
Pennsylvania	243,778	-	687,012	79,594	-	-	-	780
Rhode Island	698	-	1,793	71	-	-	-	-
South Carolina	30,256	-	87,008	7,216	-	-	-	3,338
South Dakota	18,586	-	53,653	6,343	1,708	-	-	-
Tennessee	19,556	-	56,454	4,225	-	-	-	467
Texas	225,374	-	587,662	45,439	63,962	-	-	5,254
Utah	66,581	-	175,977	13,481	-	-	-	746
Vermont	1,532	-	4,319	500	-	-	-	5
Virginia	24,835	-	71,694	5,365	-	-	-	594
Washington	51,489	-	103,120	11,347	-	-	2,624	-
West Virginia	11,618	-	33,539	2,510	-	-	-	278
Wisconsin	70,136	-	206,944	23,854	-	-	-	-
Wyoming	465	-	932	103	-	-	24	-
U.S. Total	3,460,796	54,012	9,715,828	1,017,452	80,630	34,809	5,608	63,768

State (All numbers are in \$T)	Wheat	Barley	Wheat Middlings	Miscellaneous Byproduct Feeds	DL Methionine	Valine	Dicalcium Phosphate	Limestone	Salt	Minerals	Vitamins	Phytase	Sodium Bicarbonate
Alabama	-	-	35,568	-	594	58	5,638	48,304	1,535	293	1,465	201	280
Alaska	-	263	-	-	4	-	42	318	13	3	12	2	-
Arizona	5,755	-	-	-	109	11	1,034	8,859	282	54	269	37	51
Arkansas	-	-	46,515	-	776	76	7,374	63,170	2,008	383	1,916	263	366
California	-	-	17,791	51,569	576	57	5,473	46,886	1,490	284	1,422	195	272
Colorado	863	-	6,250	273	233	23	2,211	18,940	602	115	574	79	110
Connecticut	1,958	-	4,641	-	56	6	535	4,587	146	28	139	19	27
Delaware	1,820	-	4,315	-	52	5	498	4,264	136	26	129	18	25
Florida	-	-	58,026	-	564	55	5,355	45,875	1,458	278	1,391	191	266
Georgia	-	-	61,841	-	1,032	101	9,803	83,985	2,670	509	2,547	349	486
Hawaii	-	-	-	-	12	-	130	998	38	9	31	5	-
Idaho	12,162	3,133	7,311	2,089	117	11	1,108	9,496	302	58	288	40	55
Illinois	-	-	18,531	-	360	35	3,420	29,301	931	178	889	122	170
Indiana	-	-	95,535	-	1,856	182	17,633	151,060	4,802	916	4,582	629	875
Iowa	-	-	115,999	-	2,254	221	21,410	183,418	5,830	1,113	5,563	763	1,062
Kansas	-	-	4,320	-	84	8	797	6,831	217	41	207	28	40
Kentucky	-	-	14,539	-	283	28	2,683	22,989	731	139	697	96	133
Louisiana	-	-	5,007	-	97	10	924	7,916	252	48	240	33	46
Maine	-	-	4,990	-	61	6	576	4,931	157	30	150	21	29
Maryland	4,126	-	9,779	-	119	12	1,128	9,664	307	59	293	40	56
Massachusetts	245	-	581	-	7	1	67	574	18	3	17	2	3
Michigan	-	-	44,410	-	863	85	8,197	70,221	2,232	426	2,130	292	407
Minnesota	-	-	18,974	-	369	36	3,502	30,002	954	182	910	125	174
Mississippi	-	-	15,511	-	301	30	2,863	24,526	780	149	744	102	142
Missouri	-	-	36,998	-	719	71	6,829	58,500	1,859	355	1,774	243	339
Montana	6,743	1,737	4,053	1,158	65	6	615	5,265	167	32	160	22	30
Nebraska	-	-	21,860	-	425	42	4,035	34,566	1,099	210	1,048	144	200
Nevada	89	-	-	-	2	0	16	138	4	1	4	1	1
New Hampshire	-	-	4,900	-	60	6	565	4,843	154	29	147	20	28
New Jersey	4,189	-	9,929	-	121	12	1,145	9,813	312	60	298	41	57
New Mexico	424	-	-	-	8	1	76	653	21	4	20	3	4
New York	-	-	24,484	-	297	29	2,824	24,196	769	147	734	101	140
North Carolina	-	-	87,025	-	846	83	8,031	68,802	2,187	417	2,087	286	398
North Dakota	-	-	354	-	7	1	65	559	18	3	17	2	3
Ohio	-	-	109,415	-	2,126	209	20,195	173,006	5,499	1,050	5,248	720	1,002
Oklahoma	-	-	-	-	119	12	1,127	9,652	307	59	293	40	56
Oregon	13,355	3,441	8,028	2,294	128	13	1,217	10,428	331	63	316	43	60
Pennsylvania	-	-	119,614	-	1,453	143	13,798	118,208	3,757	717	3,585	492	685
Rhode Island	128	-	304	-	4	0	35	300	10	2	9	1	2
South Carolina	-	-	19,193	-	186	18	1,771	15,174	482	92	460	63	88
South Dakota	-	-	5,623	-	109	11	1,038	8,892	283	54	270	37	51
Tennessee	-	-	5,618	-	109	11	1,037	8,883	282	54	269	37	51
Texas	-	-	-	-	1,174	115	11,153	95,545	3,037	580	2,898	398	553
Utah	18,413	-	-	-	348	34	3,309	28,347	901	172	860	118	164
Vermont	-	-	752	-	9	1	87	743	24	5	23	3	4
Virginia	-	-	7,135	-	139	14	1,317	11,281	359	68	342	47	65
Washington	30,555	7,873	18,368	5,248	293	29	2,785	23,859	758	145	724	99	138
West Virginia	-	-	3,338	-	65	6	616	5,278	168	32	160	22	31
Wisconsin	-	-	21,148	-	411	40	3,903	33,438	1,063	203	1,014	139	194
Wyoming	276	71	166	47	3	0	25	216	7	1	7	1	1
U.S. Total	101,101	16,518	1,098,739	62,679	20,002	1,962	190,015	1,627,700	51,747	9,878	49,374	6,774	9,419

State (All numbers are in ST)	Corn-Related	Soy-Related	Small Grains	Other Plant- based Meal	Processed Plant Co- Products	Animal Byproduct Meals	Fats & Oils	Synthetic Amino Acids	Vitamins & Minerals	Total
Alabama	307,111	100,166	-	-	35,568	5,313	13,282	652	57,717	519,809
Alaska	2,756	670	263	-	-	93	58	4	391	4,234
Arizona	59,212	20,809	5,755	-	-	233	-	120	10,586	96,714
Arkansas	401,625	130,992	-	-	46,515	6,948	17,370	853	75,480	679,782
California	245,699	103,490	-	34,809	69,360	288	-	633	56,022	510,301
Colorado	130,323	49,149	863	-	6,523	1,369	-	256	22,631	211,113
Connecticut	28,467	10,651	1,958	-	4,641	-	-	62	5,480	51,259
Delaware	26,455	10,312	1,820	-	4,315	-	-	58	5,095	48,055
Florida	284,868	91,473	-	-	58,026	10,091	-	619	54,815	499,892
Georgia	533,961	174,154	-	-	61,841	9,237	23,093	1,133	100,350	903,771
Hawaii	7,199	2,188	-	-	-	97	208	12	1,210	10,914
Idaho	45,561	20,494	15,295	-	9,400	1,044	-	128	11,347	103,269
Illinois	202,239	61,457	-	-	18,531	-	-	395	35,011	317,634
Indiana	1,042,640	316,843	-	-	95,535	-	-	2,039	180,496	1,637,553
Iowa	1,265,978	384,711	-	-	115,999	-	-	2,475	219,159	1,988,323
Kansas	47,407	14,280	-	-	4,320	-	-	92	8,163	74,262
Kentucky	157,031	50,608	-	-	14,539	1,210	-	310	27,469	251,167
Louisiana	54,074	17,427	-	-	5,007	417	-	107	9,459	86,490
Maine	31,982	10,170	-	-	4,990	33	-	67	5,892	53,133
Maryland	59,956	23,369	4,126	-	9,779	-	-	130	11,547	108,908
Massachusetts	3,564	1,333	245	-	581	-	-	8	686	6,417
Michigan	484,675	147,285	-	-	44,410	-	-	948	83,904	761,222
Minnesota	207,077	62,928	-	-	18,974	-	-	405	35,848	325,231
Mississippi	167,529	53,992	-	-	15,511	1,290	-	331	29,305	267,958
Missouri	411,910	121,694	-	-	36,998	-	-	790	69,900	641,291
Montana	25,259	11,362	8,480	-	5,211	579	-	71	6,291	57,253
Nebraska	243,383	71,904	-	-	21,860	-	-	466	41,301	378,915
Nevada	919	323	89	-	-	4	-	2	164	1,501
New Hampshire	31,407	9,987	-	-	4,900	32	-	65	5,787	52,179
New Jersey	60,877	23,728	4,189	-	9,929	-	-	132	11,725	110,581
New Mexico	4,362	1,533	424	-	-	17	-	9	780	7,125
New York	156,919	49,900	-	-	24,484	160	-	327	28,911	260,701
North Carolina	427,235	137,188	-	-	87,025	15,135	-	929	82,209	749,720
North Dakota	3,862	1,173	-	-	354	-	-	8	668	6,065
Ohio	1,194,116	362,874	-	-	109,415	-	-	2,335	206,719	1,875,458
Oklahoma	70,415	22,766	-	-	-	531	-	130	11,532	105,374
Oregon	50,032	22,506	16,796	-	10,322	1,147	-	141	12,461	113,405
Pennsylvania	766,606	243,778	-	-	119,614	780	-	1,595	141,243	1,273,616
Rhode Island	1,865	698	128	-	304	-	-	4	359	3,358
South Carolina	94,224	30,256	-	-	19,193	3,338	-	205	18,131	165,347
South Dakota	61,704	18,586	-	-	5,623	-	-	120	10,624	96,658
Tennessee	60,678	19,556	-	-	5,618	467	-	120	10,614	97,053
Texas	697,062	225,374	-	-	-	5,254	-	1,289	114,163	1,043,143
Utah	189,458	66,581	18,413	-	-	746	-	383	33,870	309,451
Vermont	4,819	1,532	-	-	752	5	-	10	888	8,006
Virginia	77,059	24,835	-	-	7,135	594	-	152	13,480	123,254
Washington	114,467	51,489	38,428	-	23,616	2,624	-	322	28,508	259,454
West Virginia	36,049	11,618	-	-	3,338	278	-	71	6,306	57,660
Wisconsin	230,798	70,136	-	-	21,148	-	-	451	39,954	362,487
Wyoming	1,035	465	347	-	213	24	-	3	258	2,345
U.S. Total	10,813,910	3,460,796	117,619	34,809	1,161,418	69,376	54,012	21,965	1,944,908	17,678,811

<u>State</u> (All numbers are in ST)	<u>Circular</u> <u>Ingredient</u>	<u>Non-circular</u> <u>Ingredient</u>	<u>Total</u>
Alabama	175,506	344,303	519,809
Alaska	1,158	3,076	4,234
Arizona	25,255	71,459	96,714
Arkansas	229,518	450,264	679,782
California	230,245	280,056	510,301
Colorado	57,781	153,331	211,113
Connecticut	16,383	34,877	51,259
Delaware	14,869	33,186	48,055
Florida	181,407	318,484	499,892
Georgia	305,145	598,626	903,771
Hawaii	3,228	7,685	10,914
Idaho	35,455	67,815	103,269
Illinois	100,891	216,743	317,634
Indiana	520,139	1,117,414	1,637,553
Iowa	631,555	1,356,768	1,988,323
Kansas	23,473	50,788	74,262
Kentucky	77,290	173,877	251,167
Louisiana	26,615	59,875	86,490
Maine	18,513	34,620	53,133
Maryland	33,698	75,210	108,908
Massachusetts	2,051	4,366	6,417
Michigan	241,789	519,434	761,222
Minnesota	103,304	221,927	325,231
Mississippi	82,457	185,501	267,958
Missouri	200,423	440,867	641,291
Montana	19,656	37,597	57,253
Nebraska	118,423	260,492	378,915
Nevada	392	1,109	1,501
New Hampshire	18,181	33,998	52,179
New Jersey	34,216	76,365	110,581
New Mexico	1,861	5,265	7,125
New York	90,836	169,865	260,701
North Carolina	272,069	477,652	749,720
North Dakota	1,926	4,138	6,065
Ohio	595,705	1,279,752	1,875,458
Oklahoma	27,887	77,487	105,374
Oregon	38,935	74,471	113,405
Pennsylvania	443,766	829,851	1,273,616
Rhode Island	1,073	2,285	3,358
South Carolina	60,003	105,344	165,347
South Dakota	30,552	66,105	96,658
Tennessee	29,866	67,188	97,053
Texas	276,067	767,076	1,043,143
Utah	80,808	228,643	309,451
Vermont	2,790	5,217	8,006
Virginia	37,928	85,326	123,254
Washington	89,076	170,378	259,454
West Virginia	17,743	39,917	57,660
Wisconsin	115,137	247,349	362,487
Wyoming	805	1,540	2,345
U.S. Total	5,743,849	11,934,962	17,678,811

6.4.4 Turkeys

State (All numbers are in ST)	Soybean Meal	Soybean Oil	Corn	Corn DDGs	Sorghum	Canola Meal	Meat and Bone Meal	Feather Meal	Meat Meal	Poultry Byproduct Meal
Alabama	340	3	1,045	10	-	-	46	2	-	31
Alaska	1,497	-	2,688	-	-	-	383	51	-	-
Arizona	32	1	103	4	2	-	5	-	-	2
Arkansas	298,199	2,660	916,726	9,095	-	-	40,668	1,932	-	27,112
California	51,534	1,906	178,876	10,442	-	13,448	7,782	-	-	6,226
Colorado	98	-	289	2	10	4	12	-	-	5
Connecticut	53	1	167	6	-	-	3	-	-	3
Delaware	26	1	83	3	-	-	2	-	-	1
Florida	131	-	431	13	-	-	-	2	-	13
Georgia	125	1	383	4	-	-	17	1	-	11
Hawaii	202	-	363	-	151	-	52	7	-	-
Idaho	72	4	247	10	-	-	11	-	1	-
Illinois	18,780	1,140	46,826	3,742	-	-	1,424	-	-	1,593
Indiana	236,685	14,368	590,167	47,159	-	-	17,952	-	-	20,083
Iowa	136,094	8,262	339,346	27,117	-	-	10,322	-	-	11,548
Kansas	5,537	288	19,224	1,406	137	-	362	-	-	-
Kentucky	11,416	89	36,170	1,803	-	-	507	116	-	1,075
Louisiana	32	0	101	5	-	-	1	0	-	3
Maine	114	1	386	20	-	-	5	-	-	12
Maryland	1,703	48	5,500	191	-	-	101	-	-	81
Massachusetts	220	6	695	25	-	-	12	-	-	10
Michigan	75,191	2,455	168,042	8,758	-	-	24	-	-	4,643
Minnesota	556,705	18,176	1,244,159	64,844	-	-	178	-	-	34,378
Mississippi	40	0	127	6	-	-	2	0	-	4
Missouri	157,891	8,224	548,156	40,085	3,916	-	10,317	-	-	-
Montana	231	14	793	32	-	-	36	-	3	-
Nebraska	2,125	111	7,379	540	53	-	139	-	-	-
Nevada	20	1	63	2	1	-	3	-	-	1
New Hampshire	62	0	211	11	-	-	3	-	-	6
New Jersey	499	14	1,612	56	-	-	30	-	-	24
New Mexico	197	6	626	25	12	-	28	-	-	9
New York	1,665	8	5,661	287	-	-	73	-	-	171
North Carolina	297,601	-	974,964	29,306	-	-	-	3,554	-	29,121
North Dakota	11,586	378	25,893	1,350	-	-	4	-	-	715
Ohio	76,923	4,670	191,804	15,327	-	-	5,834	-	-	6,527
Oklahoma	5,891	248	16,009	180	1,750	-	940	-	73	134
Oregon	93	6	318	13	-	-	14	-	1	-
Pennsylvania	78,154	373	265,759	13,474	-	-	3,443	-	-	8,033
Rhode Island	199	5	630	22	-	-	11	-	-	9
South Carolina	108,489	-	355,419	10,683	-	-	-	1,296	-	10,616
South Dakota	30,649	1,596	106,407	7,781	760	-	2,003	-	-	-
Tennessee	88	1	277	14	-	-	4	1	-	8
Texas	7,330	309	19,919	224	2,177	-	1,170	-	91	167
Utah	62,346	2,055	198,232	7,873	3,813	-	8,801	-	-	2,934
Vermont	78	0	264	13	-	-	3	-	-	8
Virginia	165,261	1,282	523,613	26,106	-	-	7,344	1,673	-	15,564
Washington	90	6	309	13	-	-	14	-	1	-
West Virginia	42,648	331	135,126	6,737	-	-	1,895	432	-	4,017
Wisconsin	54,818	1,790	122,511	6,385	-	-	18	-	-	3,385
Wyoming	14	1	49	2	-	-	2	-	0	-
U.S. Total	2,499,772	70,839	7,054,148	341,206	12,783	13,452	122,002	9,067	171	188,285

State (All numbers are in ST)	Wheat	Barley	Wheat Middlings	Yellow Grease	Corn Crude Oil	Distiller Corn Oil	Poultry Fat	Used Cooking Oil	Choice White Grease	Molasses
Alabama	-	-	-	8	-	-	11	0	-	7
Alaska	-	1,118	-	-	-	-	-	-	387	26
Arizona	-	-	-	1	-	-	1	0	0	1
Arkansas	-	-	-	7,053	-	-	9,635	111	-	5,707
California	-	-	4,615	2,833	-	-	284	80	-	1,311
Colorado	4	-	11	2	-	-	4	3	1	2
Connecticut	3	-	-	2	-	2	1	0	-	1
Delaware	2	-	-	1	-	1	1	0	-	1
Florida	-	-	20	3	-	-	5	-	1	3
Georgia	-	-	-	3	-	-	4	0	-	2
Hawaii	-	-	-	-	-	-	-	-	52	4
Idaho	11	3	-	4	1	7	-	0	-	2
Illinois	768	-	4,820	841	-	-	67	48	-	335
Indiana	9,684	-	60,751	10,601	-	-	841	600	-	4,228
Iowa	5,568	-	34,932	6,095	-	-	484	345	-	2,431
Kansas	-	-	1,811	343	-	273	-	12	148	126
Kentucky	-	-	-	265	-	-	377	4	-	226
Louisiana	-	-	-	1	-	-	1	0	-	1
Maine	-	-	12	3	-	-	4	0	-	2
Maryland	117	-	-	72	-	58	36	2	-	34
Massachusetts	11	-	-	9	-	7	4	0	-	4
Michigan	-	-	-	2,761	-	-	1,146	103	-	1,099
Minnesota	-	-	-	20,444	-	-	8,485	759	-	8,138
Mississippi	-	-	-	1	-	-	1	0	-	1
Missouri	-	-	51,639	9,794	-	7,791	-	344	4,216	3,593
Montana	34	10	-	12	3	23	-	1	-	5
Nebraska	-	-	695	132	-	105	-	5	57	48
Nevada	-	-	-	1	-	-	0	0	0	0
New Hampshire	-	-	7	1	-	-	2	0	-	1
New Jersey	34	-	-	21	-	17	11	1	-	10
New Mexico	-	-	-	7	-	-	4	0	2	4
New York	-	-	179	37	-	-	60	0	-	36
North Carolina	-	-	44,729	7,563	-	-	10,727	-	1,990	6,130
North Dakota	-	-	-	425	-	-	177	16	-	169
Ohio	3,147	-	19,744	3,445	-	-	273	195	-	1,374
Oklahoma	1,004	-	-	382	-	-	122	10	-	113
Oregon	14	4	-	5	1	9	-	0	-	2
Pennsylvania	-	-	8,421	1,760	-	-	2,824	16	-	1,691
Rhode Island	10	-	-	8	-	7	4	0	-	4
South Carolina	-	-	16,306	2,757	-	-	3,910	-	726	2,235
South Dakota	-	-	10,024	1,901	-	1,512	-	67	818	698
Tennessee	-	-	-	2	-	-	3	0	-	2
Texas	1,249	-	-	475	-	-	152	13	-	141
Utah	-	-	-	2,362	-	-	1,284	86	629	1,235
Vermont	-	-	8	2	-	-	3	0	-	2
Virginia	-	-	-	3,842	-	-	5,457	54	-	3,276
Washington	13	4	-	5	1	9	-	0	-	2
West Virginia	-	-	-	991	-	-	1,408	14	-	846
Wisconsin	-	-	-	2,013	-	-	835	75	-	801
Wyoming	2	1	-	1	0	1	-	0	-	0
U.S. Total	21,676	1,139	258,725	89,291	6	9,823	48,650	2,963	9,027	46,110

State (All numbers are in ST)	Lysine	Threonine	DL Methionine	Valine	Dicalcium Phosphate	Limestone	Salt	Vitamins	Sodium Bicarbonate
Alabama	2	0	3	0	1	7	2	1	1
Alaska	12	1	16	-	3	32	11	3	-
Arizona	0	0	0	0	0	1	0	0	0
Arkansas	2,113	261	2,851	166	508	6,070	1,660	552	799
California	485	60	655	38	117	1,394	381	127	183
Colorado	1	0	1	0	0	2	1	0	0
Connecticut	0	0	1	0	0	1	0	0	0
Delaware	0	0	0	0	0	1	0	0	0
Florida	1	0	1	0	0	3	1	0	0
Georgia	1	0	1	0	0	3	1	0	0
Hawaii	2	0	2	-	1	4	2	0	-
Idaho	1	0	1	0	0	2	0	0	0
Illinois	124	15	168	10	30	357	98	32	47
Indiana	1,566	194	2,112	123	376	4,496	1,229	409	592
Iowa	900	111	1,214	71	216	2,585	707	235	340
Kansas	47	6	63	4	11	134	37	12	18
Kentucky	84	10	113	7	20	241	66	22	32
Louisiana	0	0	0	0	0	1	0	0	0
Maine	1	0	1	0	0	3	1	0	0
Maryland	13	2	17	1	3	36	10	3	5
Massachusetts	2	0	2	0	0	5	1	0	1
Michigan	407	50	549	32	98	1,169	320	106	154
Minnesota	3,014	373	4,065	237	724	8,656	2,366	787	1,139
Mississippi	0	0	0	0	0	1	0	0	0
Missouri	1,331	164	1,795	105	320	3,822	1,045	347	503
Montana	2	0	3	0	0	5	1	0	1
Nebraska	18	2	24	1	4	51	14	5	7
Nevada	0	0	0	0	0	0	0	0	0
New Hampshire	0	0	1	0	0	1	0	0	0
New Jersey	4	0	5	0	1	11	3	1	1
New Mexico	1	0	2	0	0	4	1	0	1
New York	13	2	18	1	3	38	10	3	5
North Carolina	2,270	281	3,062	179	546	6,520	1,782	592	858
North Dakota	63	8	85	5	15	180	49	16	24
Ohio	509	63	686	40	122	1,461	400	133	192
Oklahoma	42	5	57	3	10	120	33	11	16
Oregon	1	0	1	0	0	2	1	0	0
Pennsylvania	626	77	845	49	151	1,799	492	163	237
Rhode Island	1	0	2	0	0	4	1	0	1
South Carolina	828	102	1,116	65	199	2,377	650	216	313
South Dakota	258	32	348	20	62	742	203	67	98
Tennessee	1	0	1	0	0	2	1	0	0
Texas	52	6	70	4	13	150	41	14	20
Utah	457	57	617	36	110	1,314	359	119	173
Vermont	1	0	1	0	0	2	0	0	0
Virginia	1,213	150	1,636	96	292	3,485	953	317	458
Washington	1	0	1	0	0	2	1	0	0
West Virginia	313	39	422	25	75	899	246	82	118
Wisconsin	297	37	400	23	71	852	233	77	112
Wyoming	0	0	0	0	0	0	0	0	0
U.S. Total	17,078	2,111	23,034	1,343	4,105	49,048	13,412	4,457	6,448

State (All numbers are in ST)	Corn- Related	Soy- Related	Small Grains	Other Plant- based Meal	Processed Plant Co- Products	Animal Byproduct Meals	Fats & Oils	Synthetic Amino Acids	Vitamins & Minerals	Total
Alabama	1,056	340	-	-	7	79	22	6	11	1,521
Alaska	2,688	1,497	1,118	-	26	435	387	29	49	6,230
Arizona	109	32	-	-	1	6	3	1	1	153
Arkansas	925,821	298,199	-	-	5,707	69,712	19,459	5,392	9,588	1,333,878
California	189,318	51,534	-	13,448	5,926	14,008	5,103	1,238	2,202	282,777
Colorado	301	98	4	4	13	16	10	2	3	452
Connecticut	173	53	3	-	1	5	6	1	2	244
Delaware	85	26	2	-	1	3	3	0	1	121
Florida	443	131	-	-	22	14	9	3	5	628
Georgia	387	125	-	-	2	29	8	2	4	557
Hawaii	514	202	-	-	4	58	52	4	7	842
Idaho	257	72	14	-	2	12	16	1	3	377
Illinois	50,568	18,780	768	-	5,156	3,018	2,096	317	564	81,265
Indiana	637,326	236,685	9,684	-	64,979	38,035	26,410	3,994	7,102	1,024,215
Iowa	366,462	136,094	5,568	-	37,363	21,870	15,186	2,296	4,084	588,924
Kansas	20,767	5,537	-	-	1,937	362	1,065	119	212	29,998
Kentucky	37,973	11,416	-	-	226	1,698	735	214	380	52,642
Louisiana	106	32	-	-	1	5	2	1	1	147
Maine	406	114	-	-	15	17	7	2	4	565
Maryland	5,691	1,703	117	-	34	183	216	32	58	8,034
Massachusetts	720	220	11	-	4	23	27	4	7	1,017
Michigan	176,800	75,191	-	-	1,099	4,667	6,465	1,038	1,847	267,108
Minnesota	1,309,003	556,705	-	-	8,138	34,557	47,864	7,688	13,672	1,977,627
Mississippi	133	40	-	-	1	6	3	1	1	184
Missouri	592,157	157,891	-	-	55,232	10,317	30,368	3,395	6,037	855,395
Montana	825	231	44	-	5	39	53	5	9	1,210
Nebraska	7,972	2,125	-	-	744	139	409	46	81	11,515
Nevada	66	20	-	-	0	4	2	0	1	93
New Hampshire	221	62	-	-	8	9	4	1	2	308
New Jersey	1,668	499	34	-	10	54	63	9	17	2,355
New Mexico	663	197	-	-	4	37	20	4	7	932
New York	5,948	1,665	-	-	215	244	106	34	61	8,272
North Carolina	1,004,270	297,601	-	-	50,859	32,675	20,280	5,791	10,298	1,421,773
North Dakota	27,243	11,586	-	-	169	719	996	160	285	41,158
Ohio	207,131	76,923	3,147	-	21,118	12,361	8,583	1,298	2,308	332,870
Oklahoma	17,939	5,891	1,004	-	113	1,148	762	107	190	27,154
Oregon	331	93	18	-	2	16	21	2	3	485
Pennsylvania	279,233	78,154	-	-	10,112	11,477	4,974	1,598	2,841	388,388
Rhode Island	652	199	10	-	4	21	24	4	7	921
South Carolina	366,102	108,489	-	-	18,540	11,911	7,393	2,111	3,754	518,301
South Dakota	114,948	30,649	-	-	10,722	2,003	5,895	659	1,172	166,047
Tennessee	291	88	-	-	2	13	6	2	3	404
Texas	22,321	7,330	1,249	-	141	1,428	948	133	236	33,788
Utah	209,919	62,346	-	-	1,235	11,735	6,415	1,167	2,075	294,891
Vermont	277	78	-	-	10	11	5	2	3	386
Virginia	549,719	165,261	-	-	3,276	24,582	10,635	3,095	5,504	762,072
Washington	321	90	17	-	2	15	21	2	3	471
West Virginia	141,863	42,648	-	-	846	6,344	2,744	799	1,420	196,664
Wisconsin	128,896	54,818	-	-	801	3,403	4,713	757	1,346	194,735
Wyoming	51	14	3	-	0	2	3	0	1	75
U.S. Total	7,408,137	2,499,772	22,815	13,452	304,835	319,525	230,599	43,565	77,469	10,920,171

<u>State</u> (All numbers are in ST)	<u>Circular Ingredient</u>	<u>Non-circular Ingredient</u>	<u>Total</u>
Alabama	456	1,065	1,521
Alaska	2,345	3,885	6,230
Arizona	45	108	153
Arkansas	399,513	934,365	1,333,878
California	98,555	184,222	282,777
Colorado	144	309	452
Connecticut	70	174	244
Delaware	34	86	121
Florida	190	438	628
Georgia	167	390	557
Hawaii	317	526	842
Idaho	107	270	377
Illinois	31,650	49,615	81,265
Indiana	398,901	625,315	1,024,215
Iowa	229,368	359,556	588,924
Kansas	10,018	19,980	29,998
Kentucky	15,790	36,853	52,642
Louisiana	44	103	147
Maine	171	393	565
Maryland	2,279	5,756	8,034
Massachusetts	293	724	1,017
Michigan	93,726	173,382	267,108
Minnesota	693,932	1,283,694	1,977,627
Mississippi	55	129	184
Missouri	285,669	569,726	855,395
Montana	343	867	1,210
Nebraska	3,846	7,670	11,515
Nevada	28	65	93
New Hampshire	93	215	308
New Jersey	668	1,687	2,355
New Mexico	277	655	932
New York	2,509	5,763	8,272
North Carolina	430,720	991,053	1,421,773
North Dakota	14,442	26,716	41,158
Ohio	129,643	203,227	332,870
Oklahoma	7,847	19,307	27,154
Oregon	138	348	485
Pennsylvania	117,816	270,571	388,388
Rhode Island	265	656	921
South Carolina	157,017	361,284	518,301
South Dakota	55,453	110,594	166,047
Tennessee	121	283	404
Texas	9,764	24,024	33,788
Utah	87,548	207,343	294,891
Vermont	117	269	386
Virginia	228,578	533,495	762,072
Washington	134	337	471
West Virginia	58,988	137,676	196,664
Wisconsin	68,331	126,404	194,735
Wyoming	21	54	75
U.S. Total	3,638,544	7,281,627	10,920,171

6.4.5 Hogs

State (All numbers are in ST)	Soybean Meal	Soybean Hulls	Soybean Oil	Corn	Corn DDGs	Sorghum	Corn Gluten Feed	Canola Meal	Meat and Bone Meal	Meat Meal	Poultry Byproduct Meal
Alabama	863	41	12	7,573	609	-	25	-	-	-	128
Alaska	127	-	-	-	98	-	-	0	13	0	-
Arizona	9,185	-	628	60,006	7,146	6,732	146	-	796	-	180
Arkansas	11,066	666	75	93,701	7,312	1,617	307	-	113	-	1,013
California	2,966	-	218	21,612	1,334	-	57	314	279	-	18
Colorado	52,537	1,245	-	358,500	8,674	10,644	707	-	6,640	-	6,935
Connecticut	214	8	-	1,479	178	-	1	-	2	-	9
Delaware	299	24	-	2,230	222	-	0	-	1	-	5
Florida	923	41	13	8,048	656	-	26	-	-	-	138
Georgia	3,583	467	50	31,677	2,434	-	114	-	-	-	504
Hawaii	463	-	-	2,106	227	-	-	0	16	1	-
Idaho	1,946	-	126	13,856	1,302	-	2	-	213	-	33
Illinois	468,462	62,185	14,006	2,921,940	440,824	-	11,548	-	-	-	950
Indiana	368,372	47,459	12,165	2,257,438	355,551	-	8,724	-	-	-	825
Iowa	2,087,803	233,118	82,195	12,647,187	2,239,439	-	25,714	-	-	-	-
Kansas	155,988	-	12,202	1,071,224	164,211	37,824	3,206	-	14,903	-	1,720
Kentucky	33,492	4,032	433	278,275	23,979	-	579	-	-	-	5,314
Louisiana	372	12	5	3,159	273	-	8	-	-	-	58
Maine	352	17	-	2,485	284	-	1	-	2	-	12
Maryland	1,673	53	-	11,436	1,412	-	7	-	15	-	75
Massachusetts	638	28	-	4,454	522	-	2	-	5	-	24
Michigan	102,222	13,274	-	684,552	100,584	-	417	-	-	-	3,502
Minnesota	714,085	90,760	-	4,659,988	719,926	-	3,097	-	-	-	25,979
Mississippi	11,293	621	162	100,556	7,818	-	360	-	-	-	1,639
Missouri	250,919	25,179	18,169	1,754,417	237,712	16,541	6,308	-	11,686	-	-
Montana	20,181	-	1,209	145,997	13,267	-	64	-	2,050	-	-
Nebraska	300,109	-	-	2,102,747	295,425	97,638	3,150	-	35,069	-	597
Nevada	141	-	12	941	99	-	0	-	20	-	3
New Hampshire	377	15	-	2,618	311	-	1	-	3	-	15
New Jersey	498	20	-	3,454	412	-	2	-	4	-	20
New Mexico	156	-	7	1,180	100	-	0	-	12	-	2
New York	3,389	-	-	23,400	2,335	-	4	-	39	-	172
North Carolina	553,855	9,103	7,259	4,549,577	419,452	-	9,429	-	-	-	89,669
North Dakota	13,311	-	-	98,188	11,466	3,841	156	-	1,196	-	19
Ohio	218,814	28,380	7,075	1,346,208	210,027	-	5,229	-	-	-	480
Oklahoma	183,678	-	11,232	1,220,098	140,932	141,078	3,404	-	14,623	-	3,214
Oregon	973	-	63	6,928	651	-	1	-	107	-	16
Pennsylvania	117,799	3,728	-	804,839	99,480	-	465	-	1,092	-	5,288
Rhode Island	94	3	-	636	80	-	0	-	1	-	4
South Carolina	8,459	1,004	108	69,527	6,108	-	126	-	-	-	1,368
South Dakota	185,602	-	-	1,330,293	178,729	47,482	2,035	-	20,637	-	345
Tennessee	22,660	2,719	292	187,810	16,255	-	379	-	-	-	3,611
Texas	86,169	-	6,871	582,672	58,743	53,255	1,468	-	9,517	-	25,340
Utah	15,943	-	1,156	111,058	10,850	-	15	-	1,922	-	300
Vermont	468	20	-	3,266	383	-	2	-	4	-	18
Virginia	16,421	1,914	205	133,068	11,986	-	192	-	-	-	2,719
Washington	2,847	-	205	19,914	1,916	-	11	-	335	-	-
West Virginia	455	25	-	3,242	361	-	1	-	3	-	14
Wisconsin	29,135	3,879	-	196,326	27,696	-	110	-	-	-	925
Wyoming	8,591	-	416	64,105	5,519	-	22	-	741	-	-
U.S. Total	6,069,968	530,041	176,569	40,005,993	5,835,307	416,653	87,624	315	122,060	1	183,199

State (All numbers are in \$T)	Wheat	Barley	Oats	Millet	Rye	Wheat Middlings	Wheat Flour	Miscellaneous Byproduct Feeds	Rice Mill Feed	Hominy Feed	Choice White Grease	Molasses	Whey
Alabama	481	-	-	-	-	354	88	110	147	-	-	26	1
Alaska	-	469	-	-	-	-	-	-	-	-	8	-	-
Arizona	2,983	-	-	-	-	1,225	306	-	-	-	-	340	12
Arkansas	2,630	-	-	-	-	6,440	1,610	678	1,832	5	-	325	12
California	-	-	-	-	-	2,483	621	2,105	-	713	-	118	4
Colorado	32,097	10,366	-	27	-	20,840	5,210	4,129	-	-	-	1,663	59
Connecticut	1	123	-	-	1	123	31	15	-	-	-	8	0
Delaware	0	142	-	-	1	195	49	61	-	-	-	4	0
Florida	507	-	-	-	-	365	91	117	165	-	-	29	1
Georgia	2,035	-	-	-	-	1,279	320	453	-	129	-	89	3
Hawaii	-	-	-	-	-	-	-	-	-	-	72	-	-
Idaho	1,026	1,049	-	-	-	169	42	-	466	845	-	68	2
Illinois	109,242	-	-	-	-	160,637	40,159	46,987	-	161,131	18,170	17,417	623
Indiana	83,392	-	-	-	-	120,753	30,188	36,546	-	125,022	15,782	15,128	541
Iowa	327,828	-	-	-	-	606,458	151,615	-	-	331,975	160,747	87,012	3,113
Kansas	17,238	-	-	-	-	34,351	8,588	-	-	32,169	16,553	6,509	233
Kentucky	16,109	-	-	-	-	8,724	2,181	3,897	-	380	-	1,502	54
Louisiana	192	-	-	-	-	125	31	46	81	-	-	14	1
Maine	1	192	-	-	1	210	53	38	-	-	-	11	0
Maryland	6	988	-	-	7	947	237	88	-	-	-	67	2
Massachusetts	2	358	-	-	2	374	94	57	-	-	-	21	1
Michigan	2,023	48,224	-	-	-	56,565	14,141	-	-	1,552	-	4,238	152
Minnesota	8,969	336,770	-	-	-	387,903	96,976	-	-	11,511	58,075	31,436	1,125
Mississippi	6,492	-	-	-	-	5,008	1,252	1,460	1,678	-	-	298	11
Missouri	-	-	-	-	-	208,169	52,042	-	23,381	7,536	-	9,692	347
Montana	-	18,845	-	-	-	11,253	2,813	-	-	849	-	654	23
Nebraska	54,390	-	-	-	-	-	-	-	-	160,956	-	12,159	435
Nevada	72	75	-	-	-	13	3	-	30	63	-	7	0
New Hampshire	1	214	-	-	2	219	55	31	-	-	-	13	0
New Jersey	2	285	-	-	2	289	72	38	-	-	-	18	1
New Mexico	85	85	-	-	-	13	3	-	41	66	-	4	0
New York	867	1,691	-	-	-	1,666	417	76	-	-	-	154	6
North Carolina	265,672	-	-	-	-	147,694	36,924	65,331	143,336	-	-	25,463	911
North Dakota	1,391	-	706	741	-	2,319	580	-	-	6,824	-	383	14
Ohio	49,865	-	-	-	-	72,458	18,115	21,761	-	74,484	9,178	8,798	315
Oklahoma	58,280	-	-	-	-	21,915	5,479	-	-	-	-	6,080	218
Oregon	513	524	-	-	-	84	21	-	233	423	-	34	1
Pennsylvania	445	69,593	-	-	525	66,652	16,663	6,134	-	-	-	4,721	169
Rhode Island	0	56	-	-	0	52	13	4	-	-	-	4	0
South Carolina	3,945	-	-	-	-	2,066	516	970	-	61	-	408	15
South Dakota	20,062	-	10,202	10,178	-	27,319	6,830	-	-	91,090	-	7,027	251
Tennessee	10,823	-	-	-	-	5,818	1,455	2,628	-	236	-	1,034	37
Texas	40,145	-	-	-	-	-	-	-	48,808	29,893	-	3,719	133
Utah	8,315	8,554	-	-	-	1,415	354	-	3,671	6,989	-	626	22
Vermont	1	263	-	-	2	275	69	42	-	-	-	16	1
Virginia	7,348	-	-	-	-	3,668	917	1,847	-	30	-	862	31
Washington	-	2,619	-	-	-	1,527	382	-	-	74	-	111	4
West Virginia	1	242	-	-	2	276	69	57	-	-	-	13	0
Wisconsin	827	13,753	-	-	-	16,476	4,119	-	-	410	2,068	1,119	40
Wyoming	-	8,135	-	-	-	4,963	1,241	-	-	492	-	225	8
U.S. Total	1,136,305	523,615	10,908	10,946	545	2,012,131	503,033	195,706	223,868	1,045,909	280,654	249,666	8,932

State (All numbers are in ST)	Lysine	Threonine	DL Methionine	Dicalcium Phosphate	Limestone	Salt	Tryptophan
Alabama	101	27	9	423	507	176	3
Alaska	3	1	0	-	-	4	0
Arizona	176	27	8	659	908	308	3
Arkansas	322	86	49	1,287	1,643	542	12
California	131	20	5	493	681	231	2
Colorado	1,747	296	152	6,129	8,860	2,965	44
Connecticut	3	1	0	18	22	7	0
Delaware	17	5	2	79	93	30	1
Florida	20	5	1	106	132	39	0
Georgia	227	62	22	917	1,089	387	6
Hawaii	11	3	0	-	-	16	1
Idaho	55	9	3	223	306	99	1
Illinois	8,827	1,864	1,272	26,489	41,753	14,045	311
Indiana	6,837	1,471	979	18,922	29,450	10,538	252
Iowa	37,936	7,758	6,316	92,314	157,918	56,475	1,591
Kansas	3,584	675	489	9,945	16,188	5,602	127
Kentucky	663	161	61	2,442	3,207	1,118	17
Louisiana	7	2	0	44	58	16	0
Maine	5	1	0	28	34	10	0
Maryland	35	9	2	153	181	63	1
Massachusetts	12	3	1	60	72	23	0
Michigan	1,748	368	250	5,309	8,331	2,792	66
Minnesota	14,392	2,924	2,441	36,450	62,463	21,697	597
Mississippi	308	90	41	1,487	1,784	559	10
Missouri	6,598	1,423	1,023	20,157	31,397	10,482	242
Montana	360	61	31	1,305	1,895	620	9
Nebraska	5,930	1,102	834	17,717	29,017	9,522	204
Nevada	2	0	0	9	12	4	0
New Hampshire	6	1	0	27	32	10	0
New Jersey	10	3	1	44	52	18	0
New Mexico	5	1	0	20	28	9	0
New York	58	15	3	245	289	103	2
North Carolina	10,471	2,749	734	42,944	51,719	18,225	230
North Dakota	493	96	76	1,454	2,330	779	18
Ohio	3,384	719	487	10,018	15,638	5,344	130
Oklahoma	5,145	953	301	19,570	25,850	8,927	107
Oregon	9	1	0	45	64	18	0
Pennsylvania	1,606	390	145	6,035	7,795	2,721	54
Rhode Island	2	1	0	10	12	4	0
South Carolina	154	39	9	603	726	265	3
South Dakota	4,154	786	593	12,004	19,487	6,566	147
Tennessee	390	95	37	1,402	1,831	650	10
Texas	1,996	359	95	7,431	9,856	3,453	39
Utah	800	125	38	3,065	4,215	1,413	15
Vermont	6	2	0	29	35	11	0
Virginia	259	66	17	889	1,039	420	7
Washington	20	3	1	88	123	38	0
West Virginia	5	1	0	28	34	10	0
Wisconsin	754	147	129	2,130	3,721	1,188	29
Wyoming	185	38	31	810	1,141	331	6
U.S. Total	119,969	25,043	16,691	352,055	544,018	188,874	4,299

State (All numbers are in \$)	Corn-Related	Soy-Related	Small Grains	Other Plant- based Meal	Processed Plant Co- Products	Animal Byproduct Meals	Fats & Oils	Other Feed Ingredients	Synthetic Amino Acids	Vitamins & Minerals	Total
Alabama	8,207	904	481	-	724	128	12	1	139	1,106	11,703
Alaska	98	127	469	0	-	14	8	-	4	4	723
Arizona	74,030	9,185	2,983	-	1,871	975	628	12	213	1,875	91,773
Arkansas	102,942	11,733	2,630	-	10,886	1,126	75	12	469	3,472	133,345
California	23,716	2,966	-	314	5,327	297	218	4	158	1,405	34,405
Colorado	378,525	53,782	42,491	-	31,842	13,575	-	59	2,240	17,954	540,468
Connecticut	1,657	222	125	-	177	11	-	0	4	46	2,243
Delaware	2,452	323	143	-	309	6	-	0	23	202	3,458
Florida	8,729	964	507	-	767	138	13	1	27	277	11,423
Georgia	34,355	4,049	2,035	-	2,142	504	50	3	317	2,393	45,849
Hawaii	2,334	463	-	0	-	17	72	-	15	16	2,918
Idaho	16,005	1,946	2,075	-	745	246	126	2	68	628	21,840
Illinois	3,535,443	530,646	109,242	-	265,201	950	32,176	623	12,273	82,288	4,568,842
Indiana	2,746,735	415,831	83,392	-	202,614	825	27,947	541	9,539	58,910	3,546,334
Iowa	15,244,315	2,320,921	327,828	-	845,084	-	242,942	3,113	53,601	306,707	19,344,512
Kansas	1,308,634	155,988	17,238	-	49,448	16,623	28,755	233	4,875	31,736	1,613,530
Kentucky	303,212	37,524	16,109	-	16,305	5,314	433	54	902	6,768	386,620
Louisiana	3,440	384	192	-	296	58	5	1	10	118	4,505
Maine	2,769	369	195	-	312	14	-	0	7	73	3,740
Maryland	12,855	1,727	1,001	-	1,339	90	-	2	48	397	17,461
Massachusetts	4,978	666	362	-	547	29	-	1	16	155	6,753
Michigan	787,105	115,496	50,247	-	74,944	3,502	-	152	2,432	16,431	1,050,309
Minnesota	5,394,522	804,846	345,739	-	516,315	25,979	58,075	1,125	20,354	120,610	7,287,564
Mississippi	108,734	11,914	6,492	-	9,697	1,639	162	11	449	3,831	142,927
Missouri	2,022,515	276,098	-	-	293,285	11,686	18,169	347	9,285	62,036	2,693,421
Montana	160,177	20,181	18,845	-	14,720	2,050	1,209	23	461	3,819	221,487
Nebraska	2,659,916	300,109	54,390	-	12,159	35,666	-	435	8,070	56,256	3,127,001
Nevada	1,102	141	147	-	53	23	12	0	3	25	1,506
New Hampshire	2,930	392	217	-	318	18	-	0	7	69	3,951
New Jersey	3,869	518	289	-	417	24	-	1	14	113	5,244
New Mexico	1,346	156	170	-	61	14	7	0	6	57	1,817
New York	25,740	3,389	2,558	-	2,313	211	-	6	79	637	34,932
North Carolina	4,978,458	562,958	265,672	-	418,748	89,669	7,259	911	14,185	112,888	6,450,748
North Dakota	120,476	13,311	2,838	-	3,281	1,215	-	14	683	4,562	146,379
Ohio	1,635,948	247,194	49,865	-	121,132	480	16,253	315	4,720	31,000	2,106,906
Oklahoma	1,505,512	183,678	58,280	-	33,474	17,837	11,232	218	6,506	54,347	1,871,082
Oregon	8,002	973	1,038	-	372	123	63	1	10	126	10,709
Pennsylvania	904,785	121,528	70,563	-	94,170	6,380	-	169	2,195	16,550	1,216,339
Rhode Island	717	96	57	-	73	5	-	0	3	26	977
South Carolina	75,822	9,464	3,945	-	3,960	1,368	108	15	205	1,594	96,479
South Dakota	1,649,629	185,602	40,442	-	41,176	20,982	-	251	5,681	38,056	1,981,819
Tennessee	204,680	25,379	10,823	-	10,935	3,611	292	37	533	3,884	260,174
Texas	726,032	86,169	40,145	-	52,527	34,857	6,871	133	2,489	20,740	969,965
Utah	128,912	15,943	16,869	-	6,065	2,222	1,156	22	979	8,693	180,862
Vermont	3,651	488	266	-	401	21	-	1	8	76	4,911
Virginia	145,277	18,335	7,348	-	7,293	2,719	205	31	348	2,347	183,903
Washington	21,915	2,847	2,619	-	2,020	335	205	4	24	249	30,217
West Virginia	3,604	480	245	-	415	17	-	0	7	72	4,841
Wisconsin	224,543	33,014	14,579	-	21,715	925	2,068	40	1,059	7,039	304,982
Wyoming	70,138	8,591	8,135	-	6,429	741	416	8	259	2,283	97,001
U.S. Total	47,391,485	6,600,009	1,682,320	315	3,184,404	305,260	457,223	8,932	166,003	1,084,947	60,880,899

<u>State</u> (All numbers are in ST)	<u>Circular Ingredient</u>	<u>Non-circular Ingredient</u>	<u>Total</u>
Alabama	2,391	9,312	11,703
Alaska	246	477	723
Arizona	19,335	72,438	91,773
Arkansas	31,380	101,964	133,345
California	11,012	23,393	34,405
Colorado	108,639	431,829	540,468
Connecticut	589	1,654	2,243
Delaware	860	2,597	3,458
Florida	2,552	8,871	11,423
Georgia	9,376	36,473	45,849
Hawaii	780	2,138	2,918
Idaho	5,088	16,752	21,840
Illinois	1,429,093	3,139,749	4,568,842
Indiana	1,124,890	2,421,444	3,546,334
Iowa	5,926,994	13,417,518	19,344,512
Kansas	438,431	1,175,098	1,613,530
Kentucky	84,133	302,487	386,620
Louisiana	1,020	3,484	4,505
Maine	981	2,759	3,740
Maryland	4,577	12,883	17,461
Massachusetts	1,766	4,987	6,753
Michigan	296,647	753,662	1,050,309
Minnesota	2,140,873	5,146,691	7,287,564
Mississippi	31,438	111,490	142,927
Missouri	832,972	1,860,450	2,693,421
Montana	51,155	170,331	221,487
Nebraska	807,900	2,319,101	3,127,001
Nevada	379	1,128	1,506
New Hampshire	1,040	2,911	3,951
New Jersey	1,374	3,870	5,244
New Mexico	397	1,420	1,817
New York	8,258	26,674	34,932
North Carolina	1,501,167	4,949,581	6,450,748
North Dakota	36,267	110,112	146,379
Ohio	668,039	1,438,867	2,106,906
Oklahoma	379,542	1,491,540	1,871,082
Oregon	2,544	8,165	10,709
Pennsylvania	322,192	894,147	1,216,339
Rhode Island	255	722	977
South Carolina	21,101	75,378	96,479
South Dakota	519,865	1,461,954	1,981,819
Tennessee	56,831	203,342	260,174
Texas	263,791	706,174	969,965
Utah	42,107	138,755	180,862
Vermont	1,295	3,615	4,911
Virginia	40,587	143,316	183,903
Washington	7,207	23,011	30,217
West Virginia	1,274	3,567	4,841
Wisconsin	85,979	219,004	304,982
Wyoming	21,803	75,198	97,001
U.S. Total	17,348,414	43,532,485	60,880,899

6.4.6 Dairy Cattle

State (All numbers are in ST)	Soybean Meal	Soybean Hulls	Soybean Oil	Soybean Seeds	Corn	Corn DDGs	Sorghum	Corn Gluten Feed	Corn Gluten Meal	Canola Meal	Cottonseed Meal	Sunflower Meal
Alabama	1,120	641	89	164	6,221	2,716	-	187	112	545	-	4
Alaska	80	-	-	125	131	77	-	-	-	-	-	-
Arizona	190,989	62,591	8,837	17,323	402,174	114,402	-	39,219	2,027	37,970	9	-
Arkansas	2,244	1,218	179	328	12,481	5,594	-	370	224	1,085	-	7
California	373,660	104,487	53,476	99,190	2,120,727	342,406	-	15,301	120,726	2,239,564	90,605	-
Colorado	153,839	160,825	73,141	44,668	368,697	455	18,009	3,757	-	217,259	-	-
Connecticut	6,418	3,197	1,167	2,265	40,626	10,690	-	192	2,876	5,259	-	-
Delaware	903	435	163	310	5,717	1,578	-	156	404	743	-	-
Florida	47,888	71,321	3,394	6,280	150,866	52,126	-	-	9,520	22,486	-	270
Georgia	38,287	60,990	3,306	6,122	159,195	52,166	-	254	6,180	20,188	-	236
Hawaii	488	-	-	593	1,588	469	-	-	-	-	-	-
Idaho	207,341	94,271	40,792	79,788	1,157,669	374,754	-	-	97,162	238,744	-	-
Illinois	55,850	14,283	6,673	12,748	136,652	49,467	-	19,054	3,404	8,114	65	274
Indiana	138,888	25,850	19,073	35,720	325,829	108,562	-	-	14,346	19,030	-	470
Iowa	223,888	38,108	19,047	37,440	498,621	181,082	-	40,799	14,114	24,467	-	4,359
Kansas	186,081	37,369	5,700	10,478	484,511	164,936	51,804	66,791	15,327	20,129	590	900
Kentucky	31,082	80,586	4,504	8,659	117,722	32,975	-	5,964	2,980	7,966	-	-
Louisiana	4,140	2,246	357	657	17,072	5,295	-	726	447	2,154	-	15
Maine	8,675	4,270	1,573	3,031	54,877	14,661	-	641	3,886	7,117	-	-
Maryland	13,905	6,980	2,528	4,938	88,586	23,472	-	793	6,218	11,396	-	-
Massachusetts	3,122	1,538	566	1,092	19,744	5,262	-	207	1,399	2,561	-	-
Michigan	95,427	100,915	36,365	23,490	1,170,191	250,502	-	-	68,890	49,102	-	-
Minnesota	266,816	58,865	40,337	76,430	1,285,045	279,053	-	15,196	40,223	203,437	-	-
Mississippi	3,176	1,796	268	493	14,490	5,084	-	553	335	1,625	-	11
Missouri	67,456	13,666	2,085	3,832	180,023	70,036	17,468	24,072	5,276	7,260	346	202
Montana	4,082	1,111	498	930	23,563	11,899	-	1,941	937	1,985	80	-
Nebraska	19,328	3,402	3,900	7,410	153,792	99,735	-	48,840	712	6,374	770	3,010
Nevada	13,595	3,750	1,823	3,383	63,184	19,687	-	7,118	3,408	7,135	12	-
New Hampshire	3,473	1,738	631	1,230	22,073	5,834	-	163	1,555	2,846	-	-
New Jersey	1,428	711	259	504	9,135	2,476	-	185	637	1,172	-	-
New Mexico	273,052	82,676	12,628	24,121	568,033	162,508	119	56,162	2,921	54,304	12	-
New York	231,816	125,383	2,187	7,184	1,509,529	354,642	-	82,012	53,234	353,850	-	-
North Carolina	11,321	6,921	2,043	3,924	75,725	22,421	-	-	0	24,295	-	-
North Dakota	8,693	2,175	1,243	2,370	48,286	11,106	-	423	1,179	6,295	-	-
Ohio	186,681	35,530	25,561	48,255	442,133	149,877	-	-	19,179	25,565	-	706
Oklahoma	24,948	13,976	1,344	3,346	111,447	27,610	629	4,001	2,659	14,156	13,904	1,456
Oregon	39,043	17,542	7,553	14,550	217,671	69,912	-	-	18,080	50,206	-	-
Pennsylvania	161,967	81,614	29,227	56,134	965,764	270,406	-	44,744	72,287	113,516	-	-
Rhode Island	176	93	32	65	1,162	315	-	30	78	144	-	-
South Carolina	4,634	2,566	402	739	18,756	5,516	-	820	503	2,427	-	16
South Dakota	52,672	11,360	12,923	23,958	420,818	163,808	-	84,543	2,377	21,080	590	9,794
Tennessee	7,786	4,811	1,369	2,676	54,933	16,279	-	-	0	16,273	-	-
Texas	402,956	227,845	22,407	55,771	1,649,842	378,509	1,032	66,300	44,320	235,365	227,863	23,907
Utah	37,857	11,881	5,097	9,545	179,768	54,935	-	19,845	9,620	20,520	24	-
Vermont	40,844	19,993	7,412	14,208	232,796	67,612	-	417	18,344	18,254	-	-
Virginia	33,360	12,909	6,454	12,269	139,770	42,445	-	-	11,043	7,585	-	-
Washington	79,788	36,225	15,663	30,566	445,263	144,029	-	-	37,336	123,956	-	-
West Virginia	1,504	885	262	502	10,715	3,209	-	-	0	3,136	-	-
Wisconsin	360,304	178,188	78,231	152,150	2,755,650	725,209	-	149,856	63,978	424,328	-	-
Wyoming	3,943	1,226	499	939	21,661	9,559	-	1,941	946	2,035	52	-
U.S. Total	4,127,010	1,830,961	563,270	952,891	18,960,924	4,967,357	89,061	803,574	781,408	4,685,006	334,922	45,636

State (All numbers are in \$T)	Poultry			Bloodmeal	Corn Silage	Alfalfa Hay	Other Hay	Legume Silage	Sorghum Silage	Corn Stalks
	Meat and Bone Meal	Feather Meal	Byproduct Meal							
Alabama	318	152	687	-	17,750	5,848	8,976	2,746	-	-
Alaska	-	-	-	10	1,034	-	131	-	-	-
Arizona	30,225	-	31,681	-	1,187,866	529,524	607,979	522,016	-	-
Arkansas	625	304	1,335	-	35,057	11,366	17,896	5,491	-	-
California	-	-	40,346	10,872	7,757,757	13,017,322	2,595,653	2,361,254	-	-
Colorado	29,375	-	17,537	-	408,645	1,461,801	505,844	364,737	29,825	-
Connecticut	1,650	-	2,914	-	150,196	57,934	40,512	25,668	-	-
Delaware	228	-	404	-	21,167	7,848	5,861	3,607	-	-
Florida	13,771	3,701	43,715	-	651,792	233,690	308,916	126,300	-	-
Georgia	13,613	1,740	43,122	-	642,874	256,514	304,353	126,300	-	-
Hawaii	-	-	-	59	5,645	-	627	-	-	-
Idaho	93,428	-	103,685	-	3,150,991	3,657,246	432,064	1,817,883	-	-
Illinois	7,099	-	25,526	3,194	586,936	266,342	78,548	143,328	-	56,077
Indiana	16,452	-	29,138	7,560	1,332,349	823,702	110,811	259,459	-	160,634
Iowa	21,202	-	77,530	871	1,805,749	690,630	168,980	354,896	-	347,517
Kansas	15,932	-	62,898	635	1,287,137	452,176	281,151	240,244	205,928	133,021
Kentucky	4,022	3,666	7,436	-	360,415	149,501	98,686	62,437	-	-
Louisiana	1,217	608	2,551	-	57,321	21,742	24,832	10,983	-	-
Maine	2,218	-	3,918	-	202,937	77,273	55,160	34,687	-	-
Maryland	3,585	-	6,328	-	328,118	126,687	89,335	55,499	-	-
Massachusetts	799	-	1,411	-	73,001	27,839	19,809	12,487	-	-
Michigan	38,294	-	67,405	788	3,087,535	552,788	679,383	763,741	-	314,047
Minnesota	39,987	18,259	72,841	-	3,593,367	1,045,900	381,281	649,194	-	335,804
Mississippi	932	456	1,983	-	46,275	16,884	21,086	8,237	-	-
Missouri	5,623	-	21,525	232	454,881	90,241	248,372	87,861	-	51,005
Montana	1,369	-	1,411	-	83,159	45,936	19,090	12,355	-	-
Nebraska	4,964	-	17,453	-	493,882	246,294	181,669	76,878	29,412	13,273
Nevada	4,966	-	5,113	-	257,275	157,119	26,955	45,303	-	-
New Hampshire	895	-	1,579	-	81,697	31,527	22,164	13,875	-	-
New Jersey	366	-	647	-	33,897	12,903	9,377	5,689	-	-
New Mexico	42,731	-	44,426	-	1,827,888	735,711	847,692	578,644	1,581	-
New York	18,700	-	97,011	5,488	5,135,661	247,776	1,365,075	2,561,839	-	-
North Carolina	915	2,964	-	5,928	262,503	227,613	40,612	54,112	-	-
North Dakota	1,200	532	2,179	-	130,066	35,740	25,657	19,425	-	9,782
Ohio	22,242	-	39,374	10,107	1,814,746	982,932	215,675	346,871	-	216,851
Oklahoma	5,990	-	12,651	-	244,914	68,839	104,443	101,241	2,090	14,180
Oregon	11,393	-	19,141	-	732,167	611,606	73,786	329,377	-	-
Pennsylvania	40,899	-	72,725	-	3,800,488	693,610	1,585,840	841,892	-	-
Rhode Island	46	-	81	-	4,346	1,706	1,235	694	-	-
South Carolina	1,376	684	2,895	-	64,152	24,666	27,397	12,355	-	-
South Dakota	16,166	-	57,204	-	1,402,413	791,369	194,715	262,825	95,226	16,577
Tennessee	610	1,976	-	3,952	185,651	154,384	33,947	36,075	-	-
Texas	98,703	-	206,738	-	3,622,821	1,135,016	1,258,392	1,687,342	3,431	232,227
Utah	14,074	-	14,522	-	735,680	447,826	84,654	126,300	-	-
Vermont	10,366	-	18,288	-	945,909	419,035	216,006	187,299	-	-
Virginia	5,955	-	10,820	-	490,194	346,303	128,821	92,961	-	6,568
Washington	35,879	-	39,794	-	1,342,654	1,266,330	228,305	642,275	-	-
West Virginia	117	380	-	760	35,585	29,150	6,763	6,937	-	-
Wisconsin	148,390	82,843	-	1,534	11,045,453	1,631,397	615,504	4,945,830	-	-
Wyoming	1,387	-	1,433	-	80,383	45,833	15,850	12,355	-	-
U.S. Total	830,294	118,266	1,331,400	51,991	62,100,377	33,971,422	14,415,867	21,039,802	367,494	1,907,564

State (All numbers are in \$T)	Wheat	Barley	Cottonseed	Wheat Middlings	Wheat Straw	Miscellaneous Byproduct Feeds	Sugar Beet Pulp	Citrus Pulp	Almond Hulls
Alabama	-	-	600	59	-	-	-	-	-
Alaska	-	-	-	-	-	-	-	-	-
Arizona	-	-	35,715	5,718	-	-	-	-	-
Arkansas	-	-	1,167	117	-	-	-	-	-
California	14	-	669,766	50,492	101,174	548,002	-	-	741,150
Colorado	-	-	13,477	5,923	-	-	34,916	-	-
Connecticut	-	-	-	542	-	2,992	-	-	-
Delaware	-	-	-	76	-	420	-	-	-
Florida	36	-	1,322	2,698	-	-	356	41	-
Georgia	546	-	1,322	2,867	-	-	-	-	-
Hawaii	-	-	-	-	-	-	-	-	-
Idaho	-	-	-	19,381	38,881	-	2,083	-	-
Illinois	-	-	-	2,316	4,647	-	-	-	-
Indiana	-	-	-	5,483	-	-	-	-	-
Iowa	-	-	19,704	7,037	-	-	-	-	-
Kansas	-	-	54,693	5,131	10,294	-	-	-	-
Kentucky	-	-	-	1,319	-	7,858	-	-	-
Louisiana	-	-	2,234	235	-	-	-	-	-
Maine	-	-	-	733	-	4,043	-	-	-
Maryland	-	-	-	1,173	-	6,469	-	-	-
Massachusetts	-	-	-	264	-	1,455	-	-	-
Michigan	-	58,083	-	12,725	78,253	-	-	-	-
Minnesota	-	60,893	-	13,341	59,446	-	-	-	-
Mississippi	-	-	1,734	176	-	-	-	-	-
Missouri	-	-	19,171	1,877	-	-	-	-	-
Montana	-	-	1,519	-	-	-	-	-	-
Nebraska	2,438	-	6,033	12,035	-	-	-	-	-
Nevada	-	-	5,442	-	-	-	-	-	-
New Hampshire	-	-	-	293	-	1,617	-	-	-
New Jersey	-	-	-	120	-	663	-	-	-
New Mexico	-	-	50,628	8,239	-	-	-	-	-
New York	-	-	-	18,472	-	-	-	-	-
North Carolina	49	-	767	1,144	-	-	225	56	-
North Dakota	488	1,874	56	410	1,769	-	2,249	562	-
Ohio	-	-	-	7,330	14,705	-	-	-	-
Oklahoma	-	-	11,069	1,144	5,457	207	-	-	-
Oregon	-	-	-	3,606	7,235	-	2,360	-	-
Pennsylvania	-	-	-	13,634	-	78,023	-	-	-
Rhode Island	-	-	-	15	-	81	-	-	-
South Carolina	-	-	2,534	264	-	-	-	-	-
South Dakota	-	-	19,187	5,483	11,000	-	-	-	-
Tennessee	225	-	542	762	-	-	1,037	259	-
Texas	-	-	181,013	19,059	89,919	2,385	-	-	-
Utah	-	-	15,728	-	-	-	-	-	-
Vermont	-	-	-	3,460	-	1,843	-	-	-
Virginia	-	-	-	1,965	-	4,720	-	-	-
Washington	-	-	-	7,448	14,941	-	1,288	-	-
West Virginia	59	-	98	147	-	-	271	68	-
Wisconsin	-	169,966	-	37,238	-	-	-	-	-
Wyoming	-	-	1,563	-	-	-	-	-	-
U.S. Total	3,854	290,815	1,117,081	281,950	437,719	660,778	44,784	987	741,150

State (All numbers are in ST)	Inedible Tallow	Corn Crude Oil	Distiller Corn Oil	Poultry Fat	Canola Oil	Molasses	Milk Replacer
Alabama	21	-	-	75	12	233	183
Alaska	-	-	-	-	-	6	6
Arizona	2,038	1,550	1,241	13,028	1,456	13,011	17,868
Arkansas	42	-	-	147	24	479	367
California	12,549	77,662	62,484	132,874	22,591	114,667	157,601
Colorado	77,215	-	-	85,372	76,457	14,677	18,509
Connecticut	270	-	-	2,142	152	1,238	1,695
Delaware	38	-	-	294	21	187	238
Florida	797	-	-	3,972	448	6,155	8,430
Georgia	776	-	-	5,203	437	6,184	8,430
Hawaii	-	-	-	-	-	35	35
Idaho	9,415	18,761	11,180	85,079	8,017	44,484	60,566
Illinois	1,552	-	-	7,525	873	5,610	7,239
Indiana	4,463	-	-	24,924	2,510	12,714	17,134
Iowa	4,389	-	-	19,866	2,469	17,970	21,991
Kansas	1,341	-	-	4,356	754	15,518	16,035
Kentucky	1,045	-	-	4,872	588	4,344	4,123
Louisiana	84	-	-	288	47	580	733
Maine	365	-	-	2,870	205	1,711	2,291
Maryland	584	-	-	4,664	328	2,714	3,665
Massachusetts	131	-	-	1,034	74	613	825
Michigan	8,495	-	-	36,303	4,778	29,129	39,767
Minnesota	9,404	-	-	44,898	5,290	31,508	41,691
Mississippi	63	-	-	220	35	504	550
Missouri	490	-	-	1,373	276	6,536	5,864
Montana	117	89	71	709	83	1,044	825
Nebraska	908	-	-	1,962	511	7,998	5,131
Nevada	428	327	261	2,547	306	2,260	3,024
New Hampshire	146	-	-	1,163	82	675	916
New Jersey	60	-	-	476	34	289	376
New Mexico	2,937	2,231	1,785	18,090	2,098	18,833	25,748
New York	24,094	3,180	3,180	71,898	858	42,127	57,726
North Carolina	474	563	450	7,221	379	2,648	3,574
North Dakota	289	-	-	1,437	163	1,493	1,283
Ohio	5,966	-	-	33,869	3,356	17,307	22,907
Oklahoma	316	-	-	1,806	178	3,428	3,574
Oregon	1,752	3,417	2,010	15,687	1,478	8,804	11,270
Pennsylvania	6,785	-	-	59,079	3,817	31,572	42,607
Rhode Island	7	-	-	61	4	36	46
South Carolina	95	-	-	325	53	622	825
South Dakota	3,033	-	-	5,864	1,706	15,705	17,134
Tennessee	316	375	300	4,885	253	1,987	2,382
Texas	5,272	-	-	29,902	2,966	44,570	59,558
Utah	1,193	911	729	7,327	853	6,250	8,430
Vermont	1,722	-	-	17,052	969	7,884	10,812
Virginia	1,503	51	41	8,284	856	5,244	6,139
Washington	3,618	7,186	4,274	32,647	3,076	17,224	23,274
West Virginia	61	72	58	925	49	400	458
Wisconsin	21,500	118,207	55,822	22,611	25,626	85,556	116,368
Wyoming	117	89	71	727	83	885	825
U.S. Total	218,274	234,671	143,959	827,927	177,679	655,646	861,044

State (All numbers are in ST)	Dicalcium Phosphate	Limestone	Potassium Chloride	Salt	Minerals	Vitamins
Alabama	40	17	6	58	426	0.00
Alaska	1	1	0	2	14	0.00
Arizona	3,155	1,352	449	4,587	33,439	0.02
Arkansas	80	34	11	116	845	0.00
California	27,703	11,873	3,941	40,272	293,587	0.16
Colorado	3,406	1,460	484	4,951	36,093	0.02
Connecticut	293	126	42	427	3,110	0.00
Delaware	41	18	6	60	438	0.00
Florida	1,441	618	205	2,095	15,270	0.01
Georgia	1,433	614	204	2,084	15,191	0.01
Hawaii	8	3	1	11	82	0.00
Idaho	9,638	4,131	1,371	14,011	102,142	0.05
Illinois	1,223	524	174	1,778	12,965	0.01
Indiana	2,844	1,219	405	4,135	30,144	0.02
Iowa	3,777	1,619	537	5,491	40,030	0.02
Kansas	3,116	1,336	443	4,530	33,027	0.02
Kentucky	815	349	116	1,185	8,640	0.00
Louisiana	127	55	18	185	1,350	0.00
Maine	396	170	56	576	4,202	0.00
Maryland	641	275	91	932	6,797	0.00
Massachusetts	143	61	20	207	1,511	0.00
Michigan	6,157	2,639	876	8,951	65,251	0.03
Minnesota	7,054	3,023	1,003	10,255	74,761	0.04
Mississippi	103	44	15	150	1,094	0.00
Missouri	1,127	483	160	1,639	11,947	0.01
Montana	174	75	25	253	1,847	0.00
Nebraska	1,176	504	167	1,709	12,460	0.01
Nevada	516	221	73	749	5,463	0.00
New Hampshire	160	68	23	232	1,692	0.00
New Jersey	66	28	9	96	702	0.00
New Mexico	4,432	1,900	630	6,443	46,974	0.02
New York	10,071	4,316	1,433	14,640	106,728	0.06
North Carolina	618	265	88	898	6,545	0.00
North Dakota	259	111	37	376	2,743	0.00
Ohio	3,815	1,635	543	5,545	40,427	0.02
Oklahoma	651	279	93	947	6,903	0.00
Oregon	1,847	791	263	2,685	19,570	0.01
Pennsylvania	7,379	3,163	1,050	10,727	78,203	0.04
Rhode Island	9	4	1	12	90	0.00
South Carolina	142	61	20	207	1,506	0.00
South Dakota	3,025	1,296	430	4,397	32,058	0.02
Tennessee	435	186	62	632	4,605	0.00
Texas	9,778	4,190	1,391	14,214	103,623	0.06
Utah	1,474	632	210	2,143	15,620	0.01
Vermont	1,840	789	262	2,675	19,498	0.01
Virginia	1,120	480	159	1,628	11,866	0.01
Washington	3,729	1,598	530	5,422	39,524	0.02
West Virginia	83	36	12	121	884	0.00
Wisconsin	19,542	8,375	2,780	28,409	207,104	0.11
Wyoming	166	71	24	241	1,759	0.00
U.S. Total	147,272	63,116	20,948	214,090	1,560,752	0.83

State (All numbers are in ST)	Corn- Related	Soy- Related	Small Grains	Other Plant- based Meal	Processed Plant Co- Products	Animal Byproduct Meals	Fats & Oils	Forages & Roughage	Other Feed Ingredients	Vitamins & Minerals	Total
Alabama	9,236	1,925	-	1,149	292	1,157	197	35,320	183	548	50,007
Alaska	208	205	-	-	6	10	-	1,164	6	18	1,617
Arizona	557,821	270,903	-	73,695	18,729	61,906	28,150	2,847,385	17,868	42,983	3,919,439
Arkansas	18,668	3,791	-	2,260	596	2,264	391	69,810	367	1,086	99,234
California	2,599,161	577,338	14	2,999,935	1,454,310	51,218	361,636	25,833,160	157,601	377,374	34,411,746
Colorado	390,918	359,332	-	230,736	55,516	46,913	312,185	2,770,852	18,509	46,393	4,231,353
Connecticut	54,385	11,880	-	5,259	4,772	4,565	3,730	274,310	1,695	3,998	364,594
Delaware	7,856	1,647	-	743	684	632	516	38,483	238	563	51,362
Florida	212,512	125,489	36	24,078	9,250	61,187	8,611	1,320,698	8,430	19,628	1,789,916
Georgia	217,794	105,400	546	21,745	9,052	58,475	9,722	1,330,040	8,430	19,526	1,780,730
Hawaii	2,056	1,081	-	-	35	59	-	6,272	35	105	9,644
Idaho	1,629,585	381,400	-	238,744	65,948	197,112	173,243	9,097,066	60,566	131,292	11,974,956
Illinois	208,577	82,881	-	8,452	7,927	35,819	16,623	1,135,878	7,239	16,665	1,520,060
Indiana	448,737	200,457	-	19,500	18,197	53,150	50,970	2,686,955	17,134	38,747	3,533,847
Iowa	734,616	299,437	-	48,530	25,007	99,603	45,771	3,367,772	21,991	51,455	4,694,180
Kansas	783,369	233,928	-	76,312	20,649	79,465	12,152	2,609,950	16,035	42,453	3,874,312
Kentucky	159,641	120,327	-	7,966	13,521	15,124	11,008	671,039	4,123	11,106	1,013,856
Louisiana	23,540	7,042	-	4,402	814	4,376	777	114,878	733	1,735	158,297
Maine	74,065	15,976	-	7,117	6,487	6,136	5,013	370,057	2,291	5,401	492,542
Maryland	119,069	25,822	-	11,396	10,355	9,913	8,103	599,639	3,665	8,736	796,699
Massachusetts	26,613	5,752	-	2,561	2,333	2,210	1,805	133,137	825	1,943	177,179
Michigan	1,489,582	219,831	58,083	49,102	41,854	106,487	85,941	5,475,747	39,767	83,873	7,650,267
Minnesota	1,619,517	402,111	60,893	203,437	44,849	131,087	99,929	6,064,992	41,691	96,097	8,764,602
Mississippi	20,462	5,464	-	3,370	680	3,371	586	92,482	550	1,407	128,371
Missouri	296,874	84,954	-	26,979	8,412	27,380	4,224	932,359	5,864	15,357	1,402,403
Montana	38,340	6,123	-	3,584	1,044	2,780	1,567	160,541	825	2,375	217,178
Nebraska	303,079	30,140	2,438	16,187	20,033	22,417	7,281	1,041,408	5,131	16,016	1,464,130
Nevada	93,398	20,728	-	12,589	2,260	10,079	5,692	486,653	3,024	7,023	641,445
New Hampshire	29,624	6,442	-	2,846	2,585	2,474	2,022	149,263	916	2,175	198,347
New Jersey	12,434	2,642	-	1,172	1,072	1,013	828	61,867	376	902	82,307
New Mexico	789,743	379,849	-	104,944	27,072	87,157	39,769	3,991,516	25,748	60,380	5,506,177
New York	1,999,418	364,383	-	353,850	60,599	121,200	105,398	9,310,351	57,726	137,188	12,510,111
North Carolina	98,147	22,166	49	25,063	4,073	9,807	11,131	584,840	3,574	8,413	767,261
North Dakota	60,994	13,239	2,362	6,350	4,715	3,911	3,132	222,438	1,283	3,525	321,949
Ohio	611,189	270,466	-	26,270	24,637	71,723	68,752	3,591,780	22,907	51,965	4,739,689
Oklahoma	146,347	42,271	-	40,584	4,779	18,641	3,645	541,163	3,574	8,873	809,876
Oregon	305,663	71,135	-	50,206	14,770	30,533	31,897	1,754,170	11,270	25,156	2,294,800
Pennsylvania	1,353,201	299,714	-	113,516	123,230	113,624	98,907	6,921,830	42,607	100,522	9,167,151
Rhode Island	1,585	334	-	144	131	128	105	7,980	46	116	10,568
South Carolina	25,595	7,939	-	4,977	886	4,955	875	128,571	825	1,936	176,558
South Dakota	671,546	87,989	-	50,651	21,188	73,370	23,527	2,774,124	17,134	41,207	3,760,736
Tennessee	71,212	15,272	225	16,815	4,045	6,538	7,499	410,056	2,382	5,919	539,964
Texas	2,140,004	686,572	-	668,148	66,014	305,441	60,547	8,029,149	59,558	133,196	12,148,630
Utah	264,167	59,283	-	36,272	6,250	28,596	16,109	1,394,459	8,430	20,077	1,833,643
Vermont	319,168	75,046	-	18,254	13,187	28,654	27,155	1,768,249	10,812	25,063	2,285,589
Virginia	193,258	58,537	-	7,585	11,929	16,775	17,189	1,064,848	6,139	15,252	1,391,511
Washington	626,628	146,579	-	123,956	25,959	75,673	66,464	3,494,505	23,274	50,804	4,633,843
West Virginia	13,924	2,891	59	3,234	886	1,257	1,426	78,434	458	1,137	103,707
Wisconsin	3,694,693	690,643	169,966	424,328	122,793	232,767	321,996	18,238,183	116,368	266,210	24,277,947
Wyoming	34,108	6,108	-	3,650	885	2,820	1,587	154,422	825	2,261	206,664
U.S. Total	25,602,324	6,910,862	294,669	6,182,646	2,385,296	2,331,951	2,165,780	134,240,244	861,044	2,006,179	182,980,995

State (All numbers are in ST)	Circular Ingredient	Non-circular Ingredient	Total
Alabama	7,470	42,537	50,007
Alaska	173	1,444	1,617
Arizona	579,865	3,339,575	3,919,439
Arkansas	14,959	84,274	99,234
California	5,771,124	28,640,621	34,411,746
Colorado	814,626	3,416,727	4,231,353
Connecticut	40,381	324,213	364,594
Delaware	5,867	45,495	51,362
Florida	280,138	1,509,778	1,789,916
Georgia	253,128	1,527,603	1,780,730
Hawaii	1,051	8,593	9,644
Idaho	1,419,887	10,555,070	11,974,956
Illinois	264,057	1,256,003	1,520,060
Indiana	568,514	2,965,334	3,533,847
Iowa	1,042,904	3,651,276	4,694,180
Kansas	795,941	3,078,371	3,874,312
Kentucky	196,115	817,741	1,013,856
Louisiana	22,818	135,479	158,297
Maine	55,108	437,434	492,542
Maryland	88,279	708,420	796,699
Massachusetts	19,798	157,381	177,179
Michigan	1,150,273	6,499,994	7,650,267
Minnesota	1,489,077	7,275,525	8,764,602
Mississippi	18,646	109,725	128,371
Missouri	296,144	1,106,259	1,402,403
Montana	28,275	188,904	217,178
Nebraska	246,798	1,217,333	1,464,130
Nevada	75,722	565,722	641,445
New Hampshire	21,976	176,371	198,347
New Jersey	9,231	73,076	82,307
New Mexico	819,304	4,686,873	5,506,177
New York	1,481,909	11,028,202	12,510,111
North Carolina	87,751	679,510	767,261
North Dakota	51,829	270,120	321,949
Ohio	785,288	3,954,401	4,739,689
Oklahoma	158,959	650,918	809,876
Oregon	266,769	2,028,030	2,294,800
Pennsylvania	1,047,250	8,119,901	9,167,151
Rhode Island	1,163	9,405	10,568
South Carolina	25,276	151,282	176,558
South Dakota	496,442	3,264,294	3,760,736
Tennessee	61,775	478,189	539,964
Texas	2,516,855	9,631,776	12,148,630
Utah	214,504	1,619,140	1,833,643
Vermont	226,080	2,059,509	2,285,589
Virginia	152,441	1,239,070	1,391,511
Washington	578,446	4,055,397	4,633,843
West Virginia	12,019	91,688	103,707
Wisconsin	2,357,357	21,920,590	24,277,947
Wyoming	25,886	180,779	206,664
U.S. Total	26,945,645	156,035,350	182,980,995

6.4.7 Beef Cattle

State (All numbers are in ST)	Soybean Meal	Soybean Hulls	Soybean Oil	Corn	Corn DDGs	Sorghum	Corn Gluten Feed	Corn Gluten Meal	Canola Meal	Cottonseed Meal	Sunflower Meal
Alabama	4,183	5,928	-	139,856	49,965	-	1,090	-	256	1,842	-
Alaska	4	-	-	3,427	118	-	-	-	-	-	-
Arizona	1,508	1,833	-	857,853	285,686	-	28,278	-	95	1,330	-
Arkansas	5,394	6,967	-	171,833	62,552	-	1,291	-	328	1,823	-
California	5,304	3,841	154	1,700,146	569,680	314	59,511	-	62,634	-	-
Colorado	46,415	18,130	4,514	4,836,419	5,444	85,468	44,941	2,233	152,361	10,902	-
Connecticut	268	385	-	1,955	1,010	-	768	-	71	-	-
Delaware	58	86	-	452	243	-	203	-	18	-	-
Florida	10,252	5,809	-	131,521	29,869	-	5,992	114	1,916	1,828	-
Georgia	5,386	9,681	-	199,792	22,455	-	8,598	-	1,341	1,371	-
Hawaii	18	-	-	18,792	494	-	-	-	-	-	-
Idaho	7,272	2,241	-	773,966	393,416	-	35,686	-	23,138	-	-
Illinois	1,970	8,869	-	912,747	285,794	-	71,165	-	1,149	1,589	142
Indiana	4,858	10,151	-	406,673	129,204	-	12,629	-	425	-	14
Iowa	24,828	20,391	-	2,968,126	2,153,310	-	226,125	-	2,950	803	292
Kansas	41,647	27,602	143	8,374,587	2,788,754	53,679	273,562	1,706	1,787	20,171	348
Kentucky	25,547	20,984	-	589,319	75,130	-	2,436	3,962	6,055	-	-
Louisiana	2,656	4,003	-	85,749	29,953	-	506	-	165	1,247	-
Maine	535	751	-	3,897	2,172	-	2,025	-	146	-	-
Maryland	1,727	2,549	-	26,558	14,183	-	5,846	-	1,175	-	-
Massachusetts	341	497	-	2,159	1,129	-	1,055	-	76	-	-
Michigan	2,817	2,264	-	354,051	258,662	-	31,163	6,092	6,296	-	-
Minnesota	10,692	8,819	-	947,709	691,644	-	91,736	23,790	25,666	-	-
Mississippi	2,729	4,149	-	91,941	32,657	-	637	-	166	1,402	-
Missouri	41,294	45,861	178	537,862	391,265	12,516	19,366	2,132	3,512	9,402	436
Montana	25,611	29,800	-	547,731	161,974	-	9,181	-	2,634	-	-
Nebraska	46,500	66,589	-	6,683,174	4,417,854	49,394	338,397	-	2,014	24,470	761
Nevada	1,539	1,911	-	68,162	16,946	-	1,454	-	125	91	-
New Hampshire	201	294	-	1,494	788	-	641	-	56	-	-
New Jersey	373	560	-	2,097	1,076	-	1,129	-	71	-	-
New Mexico	6,914	4,290	-	79,577	20,748	1,125	5,356	-	336	193	-
New York	5,063	7,023	-	99,371	54,007	-	19,435	-	4,501	-	-
North Carolina	4,745	3,698	-	74,126	10,506	-	2,367	914	810	-	-
North Dakota	22,120	23,473	-	318,784	255,664	-	81,274	-	1,638	1,097	399
Ohio	7,493	16,014	-	603,734	189,985	-	18,886	-	669	-	25
Oklahoma	20,927	22,619	-	1,174,189	314,550	5,294	83,212	32,356	1,043	6,963	-
Oregon	7,646	2,429	-	345,971	155,063	-	13,633	-	-	-	45
Pennsylvania	8,832	13,605	-	243,172	132,170	-	36,685	-	11,447	-	-
Rhode Island	57	83	-	310	157	-	161	-	10	-	-
South Carolina	2,236	553	-	22,673	4,714	-	1,089	459	366	-	-
South Dakota	40,276	41,078	-	1,587,318	792,398	7,613	177,448	-	2,608	6,222	774
Tennessee	21,581	20,023	-	437,288	60,032	-	1,359	3,923	4,772	-	-
Texas	29,062	33,878	-	7,580,638	2,845,040	42,036	416,630	53,302	1,509	26,612	1,083
Utah	2,282	2,660	-	139,278	39,456	-	3,696	-	174	203	-
Vermont	676	785	-	6,579	3,577	-	2,575	-	266	-	-
Virginia	14,473	13,200	-	356,519	47,856	-	1,827	2,579	3,831	-	-
Washington	5,772	1,611	-	616,409	320,673	-	29,050	-	18,896	-	-
West Virginia	5,542	9,368	-	140,095	19,142	-	9,973	421	1,332	-	-
Wisconsin	7,523	6,278	-	624,399	441,347	-	60,033	16,446	15,625	-	-
Wyoming	13,868	15,732	-	433,121	151,306	-	10,383	-	1,284	-	-
U.S. Total	549,018	549,345	4,989	46,323,600	18,731,816	257,440	2,250,485	150,428	367,740	119,559	4,319

State (All numbers are in \$T)	Meat and Bone Meal	Feather Meal	Corn Silage	Alfalfa Hay	Other Hay	Legume Silage	Sorghum Silage	Corn Stalks	Wheat	Barley	Cottonseed	Millet
Alabama	729	-	386,881	117,198	550,111	-	-	-	-	-	1,141	-
Alaska	-	-	905	-	5,116	-	-	-	-	-	-	-
Arizona	335	-	739,049	25,964	538,275	8,374	75,366	-	8,889	-	117	-
Arkansas	749	-	486,683	142,963	688,981	-	-	-	-	-	1,173	-
California	-	-	1,570,815	176,643	1,104,480	25,808	-	-	2,415	-	-	-
Colorado	3,078	-	3,373,817	897,449	2,058,582	29,793	272,608	-	2,121	-	990	-
Connecticut	-	-	9,415	922	8,876	168	-	-	5	-	-	-
Delaware	-	-	2,335	149	2,114	43	-	-	1	-	-	-
Florida	817	-	494,902	102,043	709,565	-	-	-	5,103	-	1,279	-
Georgia	613	-	256,690	58,323	310,882	-	-	-	9,564	-	959	-
Hawaii	-	-	3,407	-	374	-	-	-	-	-	-	-
Idaho	-	-	1,102,784	223,379	1,029,380	-	-	17,185	236	11,199	-	-
Illinois	586	-	850,804	176,562	731,528	41,348	-	162,706	22,213	-	-	-
Indiana	125	-	422,278	135,859	378,881	13,786	-	54,809	9,621	-	-	-
Iowa	1,204	-	4,256,551	1,719,250	1,116,541	197,556	-	861,909	707	-	-	-
Kansas	2,513	-	7,169,741	274,643	3,990,710	431,797	2,481,629	615,414	309,088	-	-	-
Kentucky	-	1,404	898,929	127,628	995,133	-	-	-	-	-	492	-
Louisiana	525	-	246,122	77,567	354,978	-	-	-	-	-	821	-
Maine	-	-	20,315	1,739	18,863	337	-	-	9	-	-	-
Maryland	-	-	75,965	4,855	64,752	1,225	-	-	33	-	-	-
Massachusetts	-	-	12,410	1,055	11,647	230	-	-	6	-	-	-
Michigan	230	115	426,839	144,661	328,419	19,131	-	8,282	-	46,473	668	-
Minnesota	-	190	1,243,719	418,534	894,830	46,310	-	29,341	-	111,535	2,380	-
Mississippi	565	-	253,305	79,347	363,278	-	-	-	-	-	885	-
Missouri	3,142	-	2,152,624	633,553	3,709,630	224,680	-	160,922	4,197	-	-	-
Montana	3,046	-	1,585,285	1,297,654	1,890,152	-	-	-	2,617	16,819	-	-
Nebraska	3,142	-	7,250,058	3,279,571	4,042,743	462,816	518,640	1,959,163	18,395	-	-	-
Nevada	305	-	117,244	32,805	182,106	93	841	-	945	-	-	-
New Hampshire	-	-	7,578	605	7,003	138	-	-	4	-	-	-
New Jersey	-	-	13,892	1,027	12,986	273	-	-	7	-	-	-
New Mexico	761	-	228,023	50,119	273,285	614	62,910	23,326	344	-	267	-
New York	-	-	229,533	17,173	191,215	3,062	-	-	83	-	-	-
North Carolina	-	789	202,499	51,873	282,826	-	-	-	2,003	-	276	-
North Dakota	1,644	-	1,379,320	559,263	1,888,681	21,103	-	130,210	10,123	15,801	-	5,501
Ohio	229	-	635,681	212,630	580,358	20,445	-	81,336	14,193	-	-	-
Oklahoma	2,316	-	1,130,391	452,555	1,855,019	28,614	183,790	102,684	9,327	-	3,625	-
Oregon	417	-	604,594	174,180	694,796	-	-	22,382	174	10,779	-	-
Pennsylvania	19	-	469,192	22,275	364,398	78,152	-	10,911	162	-	-	-
Rhode Island	-	-	1,951	191	1,873	37	-	-	1	-	-	-
South Carolina	-	401	94,680	25,025	132,872	-	-	-	938	-	140	-
South Dakota	3,194	-	2,966,127	957,311	2,967,892	95,007	-	331,133	49,872	-	-	7,093
Tennessee	-	1,471	676,881	100,860	788,332	-	-	-	-	-	515	-
Texas	4,195	-	8,553,707	279,697	7,651,772	301,216	795,512	981,141	1,505	-	1,233,760	-
Utah	609	-	203,763	53,589	284,645	560	5,043	-	2,013	-	-	-
Vermont	-	-	27,007	2,817	24,483	429	-	-	12	-	-	-
Virginia	-	963	536,655	77,987	603,474	-	-	-	-	-	337	-
Washington	-	-	862,419	153,167	762,846	-	-	13,342	15,477	8,433	-	-
West Virginia	-	388	162,521	33,044	197,834	-	-	-	12,510	-	136	-
Wisconsin	-	360	762,886	285,688	737,076	49,014	-	15,667	-	74,357	463	-
Wyoming	1,371	-	872,017	138,521	1,153,515	-	-	-	-	87,796	-	-
U.S. Total	36,461	6,082	56,031,190	13,799,912	47,538,109	2,102,157	4,396,338	5,581,861	514,913	383,192	1,250,422	12,594

<u>State</u> (All numbers are in ST)	<u>Wheat Straw</u>	<u>Sugar Beet Pulp</u>	<u>Citrus Pulp</u>	<u>Potato Pulp</u>	<u>Potato Peels</u>	<u>Potato Tubers</u>	<u>Non-corn Brewers Products</u>	<u>Molasses</u>
Alabama	1,037	-	-	-	-	-	-	17,321
Alaska	-	-	-	-	-	-	-	127
Arizona	-	-	-	-	-	-	-	4,645
Arkansas	1,228	-	-	-	-	-	-	21,646
California	230,153	2,578	-	-	-	-	-	16,401
Colorado	-	3,611	-	-	-	-	-	37,324
Connecticut	9	-	-	-	-	-	-	139
Delaware	2	-	-	-	-	-	-	30
Florida	-	91,357	6,900	-	-	-	-	22,105
Georgia	-	-	-	-	-	-	-	12,484
Hawaii	-	-	-	-	-	-	-	306
Idaho	-	54,157	-	178,681	149,469	149,469	-	18,320
Illinois	-	-	-	-	-	-	1,498	19,081
Indiana	-	-	-	-	-	-	803	10,375
Iowa	-	-	-	-	-	-	3,076	50,547
Kansas	-	-	-	-	-	-	6,420	66,683
Kentucky	47,679	-	-	-	-	-	-	37,964
Louisiana	482	-	-	-	-	-	-	11,278
Maine	14	-	-	-	-	-	-	317
Maryland	247	-	-	-	-	-	-	855
Massachusetts	7	-	-	-	-	-	-	177
Michigan	141,107	-	-	-	-	-	-	6,382
Minnesota	356,206	-	-	-	-	-	-	24,428
Mississippi	606	-	-	-	-	-	-	11,513
Missouri	-	-	-	-	-	-	8,025	98,515
Montana	180,798	-	-	-	-	-	-	77,636
Nebraska	-	666,823	-	-	-	-	8,025	74,544
Nevada	-	-	-	-	-	-	-	5,839
New Hampshire	7	-	-	-	-	-	-	104
New Jersey	5	-	-	-	-	-	-	183
New Mexico	-	-	-	-	-	-	-	10,590
New York	989	-	-	-	-	-	-	2,863
North Carolina	-	7,808	1,952	-	-	-	-	8,797
North Dakota	137,519	-	-	-	-	-	4,200	60,928
Ohio	-	-	-	-	-	-	1,471	16,149
Oklahoma	-	-	-	-	-	-	-	42,823
Oregon	-	39,637	-	68,621	57,184	57,184	2,675	15,624
Pennsylvania	2,679	-	-	-	-	-	-	11,385
Rhode Island	1	-	-	-	-	-	-	29
South Carolina	-	16,825	1,320	-	-	-	-	4,157
South Dakota	177,327	-	-	-	-	-	8,159	89,609
Tennessee	31,328	-	-	-	-	-	-	29,441
Texas	-	-	-	-	-	-	-	89,130
Utah	-	-	-	-	-	-	-	8,556
Vermont	40	-	-	-	-	-	-	409
Virginia	27,917	-	-	-	-	-	-	22,520
Washington	-	43,495	-	145,610	121,709	121,709	-	12,589
West Virginia	-	-	-	-	-	-	-	8,165
Wisconsin	238,132	-	-	-	-	-	-	16,951
Wyoming	77,258	-	-	-	-	-	-	33,036
U.S. Total	1,652,777	926,291	10,172	392,911	328,362	328,362	44,353	1,131,019

<u>State</u> (All numbers are in ST)	<u>Dicalcium</u> <u>Phosphate</u>	<u>Limestone</u>	<u>Potassium</u> <u>Chloride</u>	<u>Salt</u>	<u>Minerals</u>	<u>Vitamins</u>
Alabama	82	337	167	253	11,832	0.00
Alaska	1	3	1	2	89	0.00
Arizona	169	694	344	522	24,364	0.01
Arkansas	102	420	209	316	14,754	0.01
California	358	1,468	729	1,104	51,540	0.02
Colorado	769	3,157	1,566	2,373	110,803	0.04
Connecticut	2	6	3	5	225	0.00
Delaware	0	2	1	1	54	0.00
Florida	104	427	212	321	15,000	0.01
Georgia	58	238	118	179	8,358	0.00
Hawaii	1	6	3	5	215	0.00
Idaho	269	1,106	549	831	38,818	0.02
Illinois	215	882	437	663	30,945	0.01
Indiana	103	425	211	319	14,908	0.01
Iowa	880	3,611	1,792	2,715	126,751	0.05
Kansas	1,764	7,242	3,594	5,445	254,219	0.10
Kentucky	183	750	372	564	26,337	0.01
Louisiana	52	215	107	162	7,558	0.00
Maine	3	14	7	10	478	0.00
Maryland	13	53	26	40	1,871	0.00
Massachusetts	2	8	4	6	288	0.00
Michigan	115	473	235	356	16,612	0.01
Minnesota	318	1,307	649	983	45,889	0.02
Mississippi	54	223	110	167	7,811	0.00
Missouri	520	2,134	1,059	1,604	74,892	0.03
Montana	374	1,534	761	1,154	53,856	0.02
Nebraska	1,940	7,965	3,953	5,989	279,590	0.11
Nevada	28	113	56	85	3,984	0.00
New Hampshire	1	5	3	4	177	0.00
New Jersey	2	9	4	7	315	0.00
New Mexico	49	203	101	152	7,119	0.00
New York	41	169	84	127	5,935	0.00
North Carolina	42	173	86	130	6,057	0.00
North Dakota	316	1,299	645	977	45,594	0.02
Ohio	156	640	318	482	22,482	0.01
Oklahoma	354	1,451	720	1,091	50,941	0.02
Oregon	147	601	298	452	21,113	0.01
Pennsylvania	91	373	185	280	13,076	0.01
Rhode Island	0	1	1	1	46	0.00
South Carolina	20	81	40	61	2,848	0.00
South Dakota	668	2,742	1,361	2,062	96,250	0.04
Tennessee	140	576	286	433	20,231	0.01
Texas	1,993	8,181	4,060	6,151	287,176	0.12
Utah	48	198	98	149	6,945	0.00
Vermont	5	19	9	14	652	0.00
Virginia	110	452	224	340	15,870	0.01
Washington	210	863	428	649	30,293	0.01
West Virginia	39	160	79	120	5,600	0.00
Wisconsin	216	889	441	668	31,193	0.01
Wyoming	192	788	391	593	27,675	0.01
U.S. Total	13,322	54,687	27,138	41,118	1,919,631	0.78

State (All numbers are in \$T)	Corn-Related	Soy-Related	Small Grains	Other Plant- based Meal	Processed Plant Co- Products	Animal Byproduct Meals	Fats & Oils	Forages & Roughage	Vitamins & Minerals	Total
Alabama	190,911	10,112	-	3,239	17,321	729	-	1,055,227	12,671	1,290,209
Alaska	3,546	4	-	-	127	-	-	6,022	96	9,794
Arizona	1,171,817	3,340	8,889	1,542	4,645	335	-	1,387,028	26,094	2,603,690
Arkansas	235,676	12,362	-	3,323	21,646	749	-	1,319,856	15,801	1,609,413
California	2,329,651	9,145	2,415	62,634	18,979	-	154	3,107,898	55,199	5,586,075
Colorado	4,974,505	64,544	2,121	164,253	40,935	3,078	4,514	6,632,249	118,669	12,004,868
Connecticut	3,733	653	5	71	139	-	-	19,391	241	24,232
Delaware	898	144	1	18	30	-	-	4,643	57	5,792
Florida	167,497	16,061	5,103	5,023	120,362	817	-	1,306,509	16,065	1,637,437
Georgia	230,845	15,068	9,564	3,671	12,484	613	-	625,895	8,951	907,092
Hawaii	19,286	18	-	-	306	-	-	3,782	230	23,622
Idaho	1,203,067	9,513	11,435	23,138	550,095	-	-	2,372,727	41,573	4,211,548
Illinois	1,269,706	10,839	22,213	4,378	19,081	586	-	1,962,948	33,142	3,322,892
Indiana	548,506	15,010	9,621	1,241	10,375	125	-	1,005,612	15,966	1,606,457
Iowa	5,347,561	45,219	707	7,121	50,547	1,204	-	8,151,807	135,748	13,739,915
Kansas	11,492,288	69,250	309,088	28,727	66,683	2,513	143	14,963,934	272,265	27,204,890
Kentucky	670,847	46,531	-	6,546	37,964	1,404	-	2,069,368	28,207	2,860,868
Louisiana	116,209	6,659	-	2,233	11,278	525	-	679,149	8,095	824,147
Maine	8,094	1,286	9	146	317	-	-	41,268	512	51,633
Maryland	46,587	4,276	33	1,175	855	-	-	147,045	2,004	201,974
Massachusetts	4,343	838	6	76	177	-	-	25,349	309	31,097
Michigan	649,968	5,082	46,473	6,963	6,382	346	-	1,068,438	17,791	1,801,443
Minnesota	1,754,879	19,511	111,535	28,045	24,428	190	-	2,988,940	49,146	4,976,674
Mississippi	125,234	6,878	-	2,453	11,513	565	-	696,537	8,365	851,546
Missouri	963,142	87,155	4,197	21,375	98,515	3,142	178	6,881,410	80,208	8,139,320
Montana	718,886	55,411	19,436	2,634	77,636	3,046	-	4,953,888	57,679	5,888,616
Nebraska	11,488,819	113,089	18,395	35,271	741,367	3,142	-	17,512,991	299,437	30,212,511
Nevada	86,562	3,450	945	216	5,839	305	-	333,089	4,266	434,673
New Hampshire	2,923	495	4	56	104	-	-	15,332	190	19,103
New Jersey	4,302	933	7	71	183	-	-	28,183	338	34,016
New Mexico	106,806	11,204	344	796	10,590	761	-	638,277	7,625	776,404
New York	172,813	12,086	83	4,501	2,863	-	-	441,972	6,356	640,674
North Carolina	87,913	8,443	2,003	1,086	18,558	789	-	537,198	6,487	662,476
North Dakota	655,722	45,593	31,425	7,333	60,928	1,644	-	4,116,097	48,830	4,967,572
Ohio	812,605	23,507	14,193	2,165	16,149	229	-	1,530,451	24,078	2,423,378
Oklahoma	1,609,601	43,546	9,327	11,631	42,823	2,316	-	3,753,053	54,557	5,526,854
Oregon	514,668	10,076	10,953	2,720	238,250	417	-	1,495,952	22,612	2,295,648
Pennsylvania	412,027	22,437	162	11,447	11,385	19	-	947,606	14,005	1,419,089
Rhode Island	627	140	1	10	29	-	-	4,052	49	4,908
South Carolina	28,934	2,789	938	506	22,302	401	-	252,577	3,050	311,498
South Dakota	2,564,776	81,353	56,965	17,764	89,609	3,194	-	7,494,796	103,083	10,411,540
Tennessee	502,603	41,604	-	5,287	29,441	1,471	-	1,597,401	21,667	2,199,473
Texas	10,937,645	62,940	1,505	1,262,964	89,130	4,195	-	18,563,044	307,562	31,228,984
Utah	182,429	4,942	2,013	377	8,556	609	-	547,601	7,438	753,965
Vermont	12,732	1,461	12	266	409	-	-	54,776	699	70,354
Virginia	408,781	27,673	-	4,168	22,520	963	-	1,246,032	16,997	1,727,134
Washington	966,132	7,383	23,909	18,896	445,113	-	-	1,791,775	32,444	3,285,651
West Virginia	169,631	14,909	12,510	1,467	8,165	388	-	393,400	5,997	606,468
Wisconsin	1,142,226	13,801	74,357	16,088	16,951	360	-	2,088,462	33,407	3,385,652
Wyoming	594,810	29,601	87,796	1,284	33,036	1,371	-	2,241,311	29,639	3,018,848
U.S. Total	67,713,769	1,098,363	910,699	1,786,393	3,117,117	42,544	4,989	131,102,344	2,055,897	207,832,115

State (All numbers are in ST)	Circular Ingredient	Non-circular Ingredient	Total
Alabama	83,492	1,206,717	1,290,209
Alaska	249	9,545	9,794
Arizona	323,826	2,279,864	2,603,690
Arkansas	103,152	1,506,261	1,609,413
California	950,101	4,635,974	5,586,075
Colorado	325,428	11,679,441	12,004,868
Connecticut	2,650	21,582	24,232
Delaware	640	5,152	5,792
Florida	178,238	1,459,199	1,637,437
Georgia	62,890	844,202	907,092
Hawaii	818	22,804	23,622
Idaho	1,029,033	3,182,516	4,211,548
Illinois	554,548	2,768,344	3,322,892
Indiana	223,394	1,383,063	1,606,457
Iowa	3,345,436	10,394,479	13,739,915
Kansas	3,846,609	23,358,281	27,204,890
Kentucky	221,653	2,639,215	2,860,868
Louisiana	51,636	772,511	824,147
Maine	5,960	45,672	51,633
Maryland	26,582	175,392	201,974
Massachusetts	3,281	27,816	31,097
Michigan	464,078	1,337,365	1,801,443
Minnesota	1,264,891	3,711,784	4,976,674
Mississippi	55,309	796,236	851,546
Missouri	783,871	7,355,449	8,139,320
Montana	490,679	5,397,936	5,888,616
Nebraska	7,608,282	22,604,229	30,212,511
Nevada	28,211	406,462	434,673
New Hampshire	2,091	17,012	19,103
New Jersey	3,397	30,620	34,016
New Mexico	72,782	703,622	776,404
New York	93,881	546,793	640,674
North Carolina	42,663	619,813	662,476
North Dakota	720,165	4,247,407	4,967,572
Ohio	332,258	2,091,120	2,423,378
Oklahoma	633,117	4,893,736	5,526,854
Oregon	442,542	1,853,106	2,295,648
Pennsylvania	227,733	1,191,356	1,419,089
Rhode Island	497	4,411	4,908
South Carolina	32,260	279,238	311,498
South Dakota	1,670,226	8,741,314	10,411,540
Tennessee	174,446	2,025,028	2,199,473
Texas	5,715,341	25,513,644	31,228,984
Utah	57,636	696,330	753,965
Vermont	8,328	62,025	70,354
Virginia	135,502	1,591,631	1,727,134
Washington	834,456	2,451,195	3,285,651
West Virginia	54,466	552,002	606,468
Wisconsin	818,825	2,566,827	3,385,652
Wyoming	304,239	2,714,609	3,018,848
U.S. Total	34,411,784	173,420,331	207,832,115

6.4.8 Sheep

State (All numbers are in ST)	Soybean Meal	Soybean Hulls	Corn	Corn DDGs	Sorghum	Corn Gluten Feed	Corn Gluten Meal	Canola Meal	Cottonseed Meal
Alabama	101	1,019	1,284	586	-	227	0.14	0.00	-
Alaska	5	3	44	12	16	12	0.00	0.10	4
Arizona	64	-	4,108	1,458	3,856	1,928	0.00	-	924
Arkansas	99	993	1,252	572	-	221	0.14	0.00	-
California	4,414	-	19,758	-	-	-	-	195.45	2,606
Colorado	3,661	-	15,367	-	-	-	-	178.15	2,032
Connecticut	16	0	157	70	-	10	0.02	0.00	-
Delaware	5	0	50	22	-	3	0.01	0.00	-
Florida	74	744	938	428	-	166	0.10	0.00	-
Georgia	81	821	1,034	472	-	183	0.11	0.00	-
Hawaii	94	55	829	227	306	217	0.01	1.90	84
Idaho	1,838	-	9,524	-	-	-	-	63.13	1,257
Illinois	276	-	2,255	1,077	1,077	1,077	-	0.00	0
Indiana	395	-	3,301	1,587	1,587	1,587	-	0.00	0
Iowa	913	-	6,624	3,055	3,055	3,055	-	0.00	0
Kansas	413	-	3,045	1,414	1,414	1,414	-	0.00	0
Kentucky	233	2,263	2,851	1,302	-	506	0.33	0.00	-
Louisiana	43	434	547	250	-	97	0.06	0.00	-
Maine	45	0	444	198	-	28	0.05	0.00	-
Maryland	73	0	729	325	-	46	0.08	0.00	-
Massachusetts	48	0	473	211	-	30	0.05	0.00	-
Michigan	459	-	3,383	1,565	1,565	1,565	-	0.00	0
Minnesota	647	-	4,613	2,117	2,117	2,117	-	0.00	0
Mississippi	57	577	728	332	-	129	0.08	0.00	-
Missouri	591	-	4,662	2,205	2,205	2,205	-	0.00	0
Montana	1,373	-	8,191	-	-	-	-	31.90	1,081
Nebraska	384	-	3,105	1,481	1,481	1,481	-	0.00	0
Nevada	31	-	3,046	1,076	2,953	1,477	0.00	-	604
New Hampshire	34	0	337	150	-	21	0.04	0.00	-
New Jersey	55	0	543	242	-	34	0.06	0.00	-
New Mexico	53	-	3,556	1,255	3,349	1,675	0.00	-	789
New York	322	0	3,420	1,543	-	211	0.29	0.00	-
North Carolina	97	976	1,224	561	-	215	0.13	0.00	-
North Dakota	313	-	2,400	1,128	1,128	1,128	-	0.00	0
Ohio	733	-	5,598	2,627	2,627	2,627	-	0.00	0
Oklahoma	35	-	2,495	880	2,362	1,181	0.00	-	544
Oregon	1,179	-	6,323	-	-	-	-	37.26	834
Pennsylvania	369	0	3,898	1,760	-	233	0.32	0.00	-
Rhode Island	5	0	46	21	-	3	0.00	0.00	-
South Carolina	38	384	484	221	-	86	0.05	0.00	-
South Dakota	1,273	-	9,524	4,440	4,440	4,440	-	0.00	0
Tennessee	162	1,604	2,009	921	-	352	0.22	0.00	-
Texas	433	-	28,242	9,882	26,525	13,262	0.00	-	6,337
Utah	145	-	12,028	4,232	11,532	5,766	0.00	-	2,496
Vermont	69	0	689	307	-	44	0.07	0.00	-
Virginia	238	2,443	3,050	1,402	-	530	0.32	0.00	-
Washington	335	-	1,950	-	-	-	-	8.59	258
West Virginia	103	1,141	1,397	651	-	233	0.12	0.00	-
Wisconsin	431	-	3,414	1,614	1,614	1,614	-	0.00	0
Wyoming	2,490	-	13,854	-	-	-	-	70.84	1,824
U.S. Total	25,345	13,455	208,824	55,879	75,208	53,433	2.79	587.31	21,673

State (All numbers are in ST)	Corn Silage	Alfalfa Hay	Other Hay	Wheat	Cottonseed	Oats	Wheat Middlings	Sugar Beet Pulp	Citrus Pulp	Almond Hulls	Molasses
Alabama	1,125	1,115	1,886	1,205	-	83	841	917	0	-	69
Alaska	39	44	64	22	2	17	29	28	0	7	4
Arizona	3,603	3,351	5,784	3,344	514	170	625	2,151	-	-	454
Arkansas	1,097	1,087	1,839	1,175	-	81	820	895	0	-	67
California	14,515	19,903	28,326	725	-	17,786	17,136	14,309	-	8,568	913
Colorado	10,587	14,705	21,855	647	-	13,878	12,977	10,399	-	6,488	625
Connecticut	138	179	231	148	-	20	148	126	-	-	15
Delaware	44	57	73	47	-	6	47	40	-	-	5
Florida	822	814	1,378	880	-	60	614	670	0	-	51
Georgia	906	898	1,520	970	-	67	677	739	0	-	56
Hawaii	726	820	1,208	410	28	326	546	522	0	133	74
Idaho	7,830	10,527	13,863	289	-	8,558	8,677	7,764	-	4,339	531
Illinois	2,053	2,145	3,332	1,250	-	517	1,761	929	-	-	267
Indiana	3,048	3,163	4,888	1,824	-	751	2,593	1,396	-	-	400
Iowa	5,596	6,064	9,679	3,678	-	1,452	5,067	2,415	-	-	695
Kansas	2,610	2,808	4,459	1,683	-	657	2,346	1,146	-	-	329
Kentucky	2,476	2,451	4,182	2,663	-	186	1,853	2,008	0	-	153
Louisiana	480	475	804	513	-	35	358	391	0	-	29
Maine	389	506	652	416	-	55	416	356	-	-	43
Maryland	639	831	1,071	684	-	90	684	585	-	-	70
Massachusetts	415	540	695	444	-	59	444	380	-	-	45
Michigan	2,878	3,108	4,948	1,890	-	770	2,581	1,234	-	-	357
Minnesota	3,856	4,201	6,731	2,554	-	988	3,526	1,662	-	-	478
Mississippi	638	632	1,069	683	-	47	477	520	0	-	39
Missouri	4,158	4,388	6,867	2,586	-	1,054	3,620	1,857	-	-	534
Montana	7,335	9,725	12,073	203	-	7,347	7,763	7,302	-	3,882	522
Nebraska	2,819	2,949	4,586	1,711	-	687	2,433	1,285	-	-	368
Nevada	2,860	2,767	4,430	2,528	418	63	422	1,582	-	-	379
New Hampshire	296	385	496	317	-	42	317	271	-	-	32
New Jersey	476	619	798	509	-	67	509	436	-	-	52
New Mexico	3,143	2,936	5,024	2,900	456	139	531	1,860	-	-	400
New York	3,089	3,951	5,047	3,254	-	398	3,254	2,847	-	-	344
North Carolina	1,072	1,062	1,798	1,148	-	77	796	871	0	-	67
North Dakota	2,110	2,242	3,528	1,326	-	526	1,862	941	-	-	270
Ohio	4,908	5,223	8,225	3,090	-	1,221	4,341	2,188	-	-	628
Oklahoma	2,228	2,095	3,542	2,040	324	90	368	1,303	-	-	286
Oregon	5,323	7,127	9,234	178	-	5,674	5,823	5,284	-	2,912	367
Pennsylvania	3,532	4,507	5,755	3,715	-	443	3,715	3,254	-	-	397
Rhode Island	40	53	68	43	-	6	43	37	-	-	4
South Carolina	424	420	711	454	-	31	317	346	0	-	26
South Dakota	8,234	8,822	13,964	5,267	-	2,077	7,349	3,629	-	-	1,042
Tennessee	1,756	1,739	2,950	1,882	-	126	1,302	1,423	0	-	110
Texas	24,808	23,090	39,787	22,973	3,684	1,157	4,181	14,771	-	-	3,171
Utah	11,035	10,538	17,297	9,912	1,623	335	1,705	6,263	-	-	1,444
Vermont	604	786	1,013	647	-	86	647	553	-	-	66
Virginia	2,689	2,665	4,485	2,869	-	185	1,983	2,186	0	-	168
Washington	1,719	2,285	2,867	52	-	1,751	1,834	1,710	-	917	121
West Virginia	1,259	1,249	2,061	1,328	-	73	901	1,023	0	-	81
Wisconsin	3,043	3,212	5,028	1,901	-	787	2,644	1,351	-	-	389
Wyoming	11,954	15,936	20,306	354	-	12,413	12,904	11,879	-	6,452	840
U.S. Total	177,424	201,192	302,477	101,333	7,049	83,511	136,810	128,035	0	33,698	17,878

State (All numbers are in ST)	Corn-Related	Soy-Related	Small Grains	Other Plant- based Meal	Processed Plant Co- Products	Forages & Roughage	Total
Alabama	2,098	1,120	1,287	0	1,827	4,126	10,458
Alaska	84	8	39	6	68	146	351
Arizona	11,351	64	3,515	1,438	3,231	12,738	32,335
Arkansas	2,045	1,092	1,255	0	1,782	4,023	10,197
California	19,758	4,414	18,512	2,801	40,926	62,744	149,154
Colorado	15,367	3,661	14,525	2,210	30,490	47,147	113,400
Connecticut	237	16	167	0	289	549	1,258
Delaware	75	5	53	0	91	173	397
Florida	1,532	818	940	0	1,334	3,013	7,637
Georgia	1,690	902	1,037	0	1,472	3,324	8,425
Hawaii	1,579	148	736	114	1,276	2,755	6,608
Idaho	9,524	1,838	8,847	1,320	21,310	32,220	75,059
Illinois	5,486	276	1,767	0	2,957	7,531	18,017
Indiana	8,062	395	2,575	0	4,389	11,099	26,521
Iowa	15,788	913	5,129	0	8,178	21,339	51,348
Kansas	7,287	413	2,339	0	3,821	9,877	23,736
Kentucky	4,659	2,495	2,849	0	4,015	9,109	23,127
Louisiana	894	477	549	0	779	1,759	4,457
Maine	669	45	471	0	815	1,546	3,547
Maryland	1,100	73	774	0	1,339	2,541	5,827
Massachusetts	714	48	503	0	869	1,650	3,784
Michigan	8,078	459	2,660	0	4,172	10,934	26,303
Minnesota	10,965	647	3,542	0	5,666	14,788	35,610
Mississippi	1,189	635	730	0	1,036	2,339	5,928
Missouri	11,277	591	3,640	0	6,011	15,413	36,933
Montana	8,191	1,373	7,550	1,113	19,469	29,134	66,830
Nebraska	7,549	384	2,398	0	4,087	10,355	24,773
Nevada	8,552	31	2,591	1,021	2,383	10,057	24,636
New Hampshire	509	34	358	0	620	1,176	2,697
New Jersey	819	55	577	0	997	1,892	4,340
New Mexico	9,835	53	3,039	1,245	2,791	11,102	28,066
New York	5,174	322	3,652	0	6,445	12,086	27,679
North Carolina	2,000	1,073	1,225	0	1,734	3,931	9,963
North Dakota	5,783	313	1,851	0	3,073	7,880	18,901
Ohio	13,478	733	4,311	0	7,156	18,356	44,034
Oklahoma	6,917	35	2,130	868	1,957	7,866	19,773
Oregon	6,323	1,179	5,852	871	14,386	21,684	50,295
Pennsylvania	5,892	369	4,158	0	7,366	13,795	31,579
Rhode Island	70	5	49	0	85	161	369
South Carolina	791	422	485	0	689	1,555	3,942
South Dakota	22,843	1,273	7,344	0	12,020	31,019	74,499
Tennessee	3,283	1,766	2,008	0	2,835	6,444	16,336
Texas	77,911	433	24,130	10,021	22,123	87,685	222,303
Utah	33,558	145	10,247	4,119	9,413	38,870	96,351
Vermont	1,040	69	732	0	1,266	2,403	5,512
Virginia	4,982	2,681	3,055	0	4,337	9,838	24,893
Washington	1,950	335	1,803	266	4,583	6,872	15,808
West Virginia	2,281	1,244	1,401	0	2,005	4,569	11,498
Wisconsin	8,257	431	2,688	0	4,384	11,284	27,043
Wyoming	13,854	2,490	12,767	1,895	32,075	48,196	111,278
U.S. Total	393,348	38,800	184,844	29,309	316,421	681,093	1,643,815

<u>State</u> <u>(All numbers are</u> <u>in ST)</u>	<u>Circular</u> <u>Ingredient</u>	<u>Non-circular</u> <u>Ingredient</u>	<u>Total</u>
Alabama	3,761	6,698	10,458
Alaska	105	246	351
Arizona	8,118	24,217	32,335
Arkansas	3,667	6,530	10,197
California	48,141	101,013	149,154
Colorado	36,362	77,039	113,400
Connecticut	385	873	1,258
Delaware	121	275	397
Florida	2,746	4,891	7,637
Georgia	3,029	5,395	8,425
Hawaii	1,982	4,626	6,608
Idaho	24,468	50,591	75,059
Illinois	5,387	12,630	18,017
Indiana	7,959	18,562	26,521
Iowa	15,201	36,147	51,348
Kansas	7,061	16,675	23,736
Kentucky	8,318	14,809	23,127
Louisiana	1,603	2,855	4,457
Maine	1,085	2,461	3,547
Maryland	1,783	4,044	5,827
Massachusetts	1,158	2,626	3,784
Michigan	7,761	18,542	26,303
Minnesota	10,549	25,061	35,610
Mississippi	2,132	3,796	5,928
Missouri	11,012	25,920	36,933
Montana	21,955	44,875	66,830
Nebraska	7,434	17,339	24,773
Nevada	5,988	18,648	24,636
New Hampshire	825	1,872	2,697
New Jersey	1,328	3,012	4,340
New Mexico	7,019	21,047	28,066
New York	8,521	19,158	27,679
North Carolina	3,583	6,380	9,963
North Dakota	5,641	13,259	18,901
Ohio	13,142	30,892	44,034
Oklahoma	4,921	14,852	19,773
Oregon	16,436	33,859	50,295
Pennsylvania	9,728	21,851	31,579
Rhode Island	113	256	369
South Carolina	1,418	2,525	3,942
South Dakota	22,172	52,327	74,499
Tennessee	5,875	10,462	16,336
Texas	55,721	166,582	222,303
Utah	23,674	72,677	96,351
Vermont	1,687	3,825	5,512
Virginia	8,950	15,943	24,893
Washington	5,184	10,624	15,808
West Virginia	4,132	7,366	11,498
Wisconsin	8,044	18,999	27,043
Wyoming	36,460	74,817	111,278
U.S. Total	493,845	1,149,969	1,643,815

6.4.9 Goats

State (All numbers are in \$T)	Soybean Meal	Soybean Hulls	Corn	Corn DDGs	Sorghum	Corn Gluten Feed	Corn Silage	Alfalfa Hay	Other Hay
Alabama	3.60	600	1,266	600	-	337	1,134	1,266	1,734
Alaska	0.03	4	18	8	9	5	16	22	25
Arizona	1.86	61	1,177	558	1,116	558	1,055	994	1,613
Arkansas	2.67	444	937	444	-	250	840	937	1,284
California	4.82	-	3,053	-	-	159	2,735	5,625	4,182
Colorado	1.31	-	830	-	-	43	743	1,529	1,136
Connecticut	0.14	5	87	41	-	5	78	124	120
Delaware	0.03	1	22	10	-	1	20	31	30
Florida	4.18	696	1,469	696	-	391	1,316	1,469	2,013
Georgia	4.88	814	1,717	814	-	457	1,538	1,717	2,352
Hawaii	0.50	63	269	114	131	71	241	334	368
Idaho	0.87	-	549	-	-	29	492	1,011	752
Illinois	1.31	394	832	394	394	43	745	1,534	1,139
Indiana	2.06	618	1,304	618	618	68	1,168	2,405	1,786
Iowa	3.19	960	2,025	960	960	105	1,814	3,733	2,774
Kansas	2.04	611	1,290	611	611	67	1,156	2,378	1,767
Kentucky	4.66	776	1,638	776	-	436	1,468	1,638	2,244
Louisiana	1.35	224	474	224	-	126	424	474	649
Maine	0.20	7	126	60	-	6	112	178	172
Maryland	0.43	14	273	129	-	14	244	388	374
Massachusetts	0.24	8	151	71	-	8	135	214	206
Michigan	1.11	333	703	333	333	37	630	1,296	963
Minnesota	1.95	587	1,238	587	587	64	1,109	2,283	1,696
Mississippi	1.68	279	589	279	-	157	528	589	808
Missouri	3.59	1,079	2,277	1,079	1,079	118	2,040	4,198	3,119
Montana	0.56	-	358	-	-	19	321	660	490
Nebraska	1.22	366	772	366	366	40	692	1,423	1,057
Nevada	0.36	12	227	107	215	107	203	191	311
New Hampshire	0.10	3	63	30	-	3	57	90	87
New Jersey	0.33	11	209	99	-	11	188	298	287
New Mexico	1.06	35	672	318	637	318	602	567	920
New York	1.22	40	772	366	-	40	692	1,097	1,058
North Carolina	3.64	607	1,280	607	-	341	1,146	1,280	1,753
North Dakota	0.31	92	194	92	92	10	174	358	266
Ohio	2.48	744	1,570	744	744	82	1,406	2,895	2,151
Oklahoma	3.74	123	2,373	1,125	2,250	1,125	2,126	2,003	3,251
Oregon	1.70	-	1,078	-	-	56	966	1,987	1,477
Pennsylvania	2.33	77	1,475	699	-	76	1,321	2,095	2,020
Rhode Island	0.02	1	13	6	-	1	12	19	18
South Carolina	2.72	453	957	453	-	255	857	957	1,311
South Dakota	0.71	212	447	212	212	23	401	825	613
Tennessee	5.78	963	2,032	963	-	541	1,821	2,032	2,784
Texas	33.27	1,090	21,086	9,995	19,989	9,995	18,893	17,796	28,887
Utah	0.61	20	387	183	367	183	347	327	530
Vermont	0.32	11	202	96	-	10	181	287	277
Virginia	2.91	486	1,025	486	-	273	918	1,025	1,404
Washington	1.10	-	697	-	-	36	625	1,285	956
West Virginia	1.61	268	565	268	-	151	507	565	775
Wisconsin	4.08	1,227	2,588	1,227	1,227	135	2,319	4,773	3,546
Wyoming	0.42	-	266	-	-	14	238	490	364
U.S. Total	121.29	15,419	65,620	27,852	31,936	17,401	58,795	81,692	89,899

<u>State</u> (All numbers are in ST)	<u>Wheat</u>	<u>Cottonseed</u>	<u>Oats</u>	<u>Wheat Midlings</u>	<u>Sugar Beet Pulp</u>	<u>Almond Hulls</u>	<u>Molasses</u>
Alabama	600	-	65	600	1,134	-	314
Alaska	7	1	1	6	14	1	5
Arizona	618	122	-	61	1,055	-	314
Arkansas	444	-	48	444	840	-	233
California	317	-	1,447	1,447	2,735	1,447	526
Colorado	86	-	393	393	743	393	143
Connecticut	83	-	-	41	78	-	74
Delaware	21	-	-	10	20	-	19
Florida	696	-	76	696	1,316	-	365
Georgia	814	-	89	814	1,538	-	426
Hawaii	104	11	16	82	214	13	68
Idaho	57	-	260	260	492	260	95
Illinois	69	-	-	394	393	-	136
Indiana	108	-	-	618	616	-	213
Iowa	168	-	-	960	957	-	331
Kansas	107	-	-	611	610	-	211
Kentucky	776	-	85	776	1,468	-	407
Louisiana	224	-	24	224	424	-	118
Maine	119	-	-	60	112	-	106
Maryland	259	-	-	129	244	-	230
Massachusetts	143	-	-	71	135	-	127
Michigan	58	-	-	333	332	-	115
Minnesota	103	-	-	587	585	-	202
Mississippi	279	-	30	279	528	-	146
Missouri	189	-	-	1,079	1,076	-	372
Montana	37	-	170	170	321	170	302
Nebraska	64	-	-	366	365	-	126
Nevada	119	24	-	12	203	-	304
New Hampshire	60	-	-	30	57	-	53
New Jersey	199	-	-	99	188	-	177
New Mexico	352	70	-	35	602	-	179
New York	732	-	-	366	692	-	133
North Carolina	607	-	66	607	1,146	-	318
North Dakota	16	-	-	92	92	-	162
Ohio	130	-	-	744	742	-	257
Oklahoma	1,245	247	-	123	2,126	-	633
Oregon	112	-	511	511	966	511	186
Pennsylvania	1,398	-	-	699	1,321	-	254
Rhode Island	12	-	-	6	12	-	11
South Carolina	453	-	49	453	857	-	238
South Dakota	37	-	-	212	211	-	73
Tennessee	963	-	105	963	1,821	-	505
Texas	11,064	2,193	-	1,097	18,893	-	5,625
Utah	203	40	-	20	347	-	519
Vermont	192	-	-	96	181	-	171
Virginia	486	-	53	486	918	-	254
Washington	72	-	331	331	625	331	120
West Virginia	268	-	29	268	507	-	140
Wisconsin	215	-	-	1,227	1,224	-	423
Wyoming	28	-	126	126	238	126	224
U.S. Total	25,514	2,708	3,976	20,117	52,317	3,252	16,682

<u>State</u> (All numbers are in ST)	<u>Corn-Related</u>	<u>Soy-Related</u>	<u>Small Grains</u>	<u>Other Plant- based Meal</u>	<u>Processed Plant Co-Products</u>	<u>Forages & Roughage</u>	<u>Total</u>
Alabama	2,203	604	666	-	2,049	4,135	9,656
Alaska	39	4	8	1	25	63	141
Arizona	3,409	63	618	122	1,430	3,661	9,304
Arkansas	1,631	447	493	-	1,517	3,062	7,150
California	3,211	5	1,763	-	6,155	12,542	23,676
Colorado	873	1	479	-	1,673	3,408	6,434
Connecticut	133	5	83	-	193	322	735
Delaware	34	1	21	-	49	81	185
Florida	2,557	701	772	-	2,378	4,799	11,207
Georgia	2,988	819	903	-	2,779	5,608	13,096
Hawaii	585	64	121	11	378	943	2,101
Idaho	577	1	317	-	1,107	2,255	4,257
Illinois	1,663	396	69	-	923	3,418	6,469
Indiana	2,608	620	108	-	1,448	5,359	10,143
Iowa	4,049	963	168	-	2,248	8,321	15,749
Kansas	2,580	613	107	-	1,432	5,301	10,033
Kentucky	2,851	781	861	-	2,651	5,350	12,495
Louisiana	824	226	249	-	766	1,547	3,612
Maine	192	7	119	-	278	463	1,058
Maryland	416	15	259	-	604	1,006	2,300
Massachusetts	230	8	143	-	333	555	1,269
Michigan	1,406	334	58	-	781	2,890	5,469
Minnesota	2,476	589	103	-	1,374	5,089	9,631
Mississippi	1,026	281	310	-	954	1,925	4,496
Missouri	4,553	1,083	189	-	2,527	9,357	17,709
Montana	377	1	207	-	962	1,471	3,017
Nebraska	1,544	367	64	-	857	3,172	6,004
Nevada	657	12	119	24	519	705	2,036
New Hampshire	97	3	60	-	140	233	533
New Jersey	319	11	199	-	464	772	1,765
New Mexico	1,945	36	352	70	816	2,088	5,307
New York	1,178	41	732	-	1,191	2,846	5,988
North Carolina	2,227	610	673	-	2,071	4,179	9,759
North Dakota	388	92	16	-	346	798	1,641
Ohio	3,139	747	130	-	1,743	6,452	12,210
Oklahoma	6,873	126	1,245	247	2,883	7,380	18,755
Oregon	1,134	2	623	-	2,174	4,430	8,363
Pennsylvania	2,250	79	1,398	-	2,275	5,437	11,439
Rhode Island	20	1	12	-	29	48	110
South Carolina	1,665	456	503	-	1,548	3,124	7,296
South Dakota	894	213	37	-	496	1,838	3,479
Tennessee	3,537	969	1,068	-	3,289	6,637	15,499
Texas	61,064	1,123	11,064	2,193	25,615	65,576	166,636
Utah	1,121	21	203	40	886	1,204	3,475
Vermont	308	11	192	-	448	745	1,704
Virginia	1,783	489	539	-	1,658	3,347	7,815
Washington	734	1	403	-	1,406	2,866	5,410
West Virginia	984	270	297	-	915	1,847	4,313
Wisconsin	5,177	1,231	215	-	2,873	10,638	20,134
Wyoming	280	0	154	-	714	1,092	2,240
U.S. Total	142,810	15,540	29,490	2,708	92,367	230,386	513,301

<u>State</u> (All numbers are in ST)	<u>Circular Ingredient</u>	<u>Non-circular Ingredient</u>	<u>Total</u>
Alabama	3,590	6,066	9,656
Alaska	43	98	141
Arizona	2,731	6,572	9,304
Arkansas	2,658	4,492	7,150
California	6,318	17,358	23,676
Colorado	1,717	4,717	6,434
Connecticut	244	492	735
Delaware	61	124	185
Florida	4,166	7,040	11,207
Georgia	4,869	8,228	13,096
Hawaii	638	1,463	2,101
Idaho	1,136	3,121	4,257
Illinois	1,756	4,713	6,469
Indiana	2,754	7,390	10,143
Iowa	4,276	11,474	15,749
Kansas	2,724	7,309	10,033
Kentucky	4,645	7,850	12,495
Louisiana	1,343	2,269	3,612
Maine	351	707	1,058
Maryland	762	1,538	2,300
Massachusetts	421	849	1,269
Michigan	1,485	3,984	5,469
Minnesota	2,615	7,016	9,631
Mississippi	1,671	2,824	4,496
Missouri	4,808	12,902	17,709
Montana	981	2,035	3,017
Nebraska	1,630	4,374	6,004
Nevada	770	1,266	2,036
New Hampshire	177	357	533
New Jersey	585	1,180	1,765
New Mexico	1,558	3,749	5,307
New York	1,638	4,350	5,988
North Carolina	3,628	6,131	9,759
North Dakota	540	1,100	1,641
Ohio	3,315	8,895	12,210
Oklahoma	5,506	13,249	18,755
Oregon	2,232	6,131	8,363
Pennsylvania	3,129	8,310	11,439
Rhode Island	36	73	110
South Carolina	2,713	4,584	7,296
South Dakota	944	2,534	3,479
Tennessee	5,762	9,737	15,499
Texas	48,920	117,715	166,636
Utah	1,314	2,161	3,475
Vermont	565	1,139	1,704
Virginia	2,905	4,910	7,815
Washington	1,444	3,966	5,410
West Virginia	1,603	2,710	4,313
Wisconsin	5,466	14,668	20,134
Wyoming	729	1,512	2,240
U.S. Total	155,869	357,432	513,301

6.4.10 Horses

State (All numbers are in ST)	Soybean Meal	Soybean Hulls	Corn	Corn DDGs	Sorghum	Corn Gluten Feed	Corn Gluten Meal	Canola Meal	Cottonseed Meal
Alabama	189	11,569	6,388	5,785	-	225	7	7	-
Alaska	147	452	723	420	60	55	0	0	2
Arizona	4,353	65	11,776	7,255	2,902	1,189	-	-	114
Arkansas	4,016	60	10,864	6,693	2,677	1,097	-	-	105
California	16,292	21,680	32,690	136	-	-	-	26	16
Colorado	6,163	8,202	12,367	52	-	-	-	10	6
Connecticut	16	2,083	3,281	2,083	-	341	1	-	-
Delaware	3	443	697	443	-	73	0	-	-
Florida	621	38,022	20,995	19,011	-	739	23	23	-
Georgia	210	12,841	7,090	6,420	-	250	8	8	-
Hawaii	108	333	532	310	44	41	0	0	2
Idaho	3,734	4,968	7,491	31	-	-	-	6	4
Illinois	64	8,084	12,731	8,084	-	1,324	6	-	-
Indiana	75	9,559	15,056	9,559	-	1,566	7	-	-
Iowa	66	8,367	13,178	8,367	-	1,371	6	-	-
Kansas	4,114	61	11,131	6,857	2,743	1,124	-	-	108
Kentucky	417	25,500	14,081	12,750	-	496	15	15	-
Louisiana	213	13,034	7,197	6,517	-	253	8	8	-
Maine	12	1,544	2,432	1,544	-	253	1	-	-
Maryland	42	5,347	8,422	5,347	-	876	4	-	-
Massachusetts	13	1,641	2,584	1,641	-	269	1	-	-
Michigan	82	10,417	16,406	10,417	-	1,707	7	-	-
Minnesota	58	7,323	11,533	7,323	-	1,200	5	-	-
Mississippi	153	9,355	5,166	4,678	-	182	6	6	-
Missouri	6,856	102	18,548	11,427	4,571	1,872	-	-	180
Montana	3,228	4,296	6,478	27	-	-	-	5	3
Nebraska	45	5,699	8,976	5,699	-	934	4	-	-
Nevada	1,161	17	3,142	1,936	774	317	-	-	31
New Hampshire	4	568	894	568	-	93	0	-	-
New Jersey	25	3,151	4,962	3,151	-	516	2	-	-
New Mexico	3,375	50	9,131	5,626	2,250	922	-	-	89
New York	66	8,328	13,116	8,328	-	1,364	6	-	-
North Carolina	332	20,345	11,234	10,173	-	396	12	12	-
North Dakota	19	2,401	3,782	2,401	-	393	2	-	-
Ohio	112	14,146	22,279	14,146	-	2,318	10	-	-
Oklahoma	8,484	127	22,953	14,141	5,656	2,317	-	-	223
Oregon	3,993	5,313	8,012	33	-	-	-	6	4
Pennsylvania	96	12,199	19,213	12,199	-	1,999	9	-	-
Rhode Island	1	136	215	136	-	22	0	-	-
South Carolina	121	7,391	4,081	3,696	-	144	4	4	-
South Dakota	37	4,661	7,340	4,661	-	764	3	-	-
Tennessee	5,620	84	15,204	9,366	3,747	1,535	-	-	148
Texas	25,504	380	68,997	42,507	17,003	6,964	-	-	670
Utah	2,841	42	7,685	4,734	1,894	776	-	-	75
Vermont	8	1,022	1,609	1,022	-	167	1	-	-
Virginia	296	18,143	10,018	9,071	-	353	11	11	-
Washington	5,853	7,788	11,744	49	-	-	-	9	6
West Virginia	114	6,982	3,856	3,491	-	136	4	4	-
Wisconsin	61	7,703	12,132	7,703	-	1,262	5	-	-
Wyoming	38	4,763	7,501	4,763	-	780	3	-	-
U.S. Total	109,453	336,789	537,912	312,775	44,320	40,973	182	159	1,785

State (All numbers are in ST)	Alfalfa Hay	Other Hay	Oats	Wheat Middlings	Rice Mill Feed	Sugar Beet Pulp	Almond Hulls	Alfalfa Meal	Molasses	Lysine
Alabama	6,916	9,203	5,187	15,213	7,767	23,594	-	2,060	1,298	-
Alaska	688	806	836	1,199	605	1,927	161	363	114	0
Arizona	7,174	11,543	15,776	11,610	8,768	29,601	-	7,290	1,628	-
Arkansas	6,618	10,649	14,554	10,710	8,089	27,308	-	6,726	1,502	-
California	27,626	42,532	41,494	62,408	31,880	111,778	49,676	4,270	6,081	31
Colorado	10,451	16,090	15,697	23,609	12,060	42,286	18,792	1,615	2,300	12
Connecticut	4,143	3,315	3,611	6,075	2,257	6,587	-	2,070	467	-
Delaware	881	704	767	1,291	480	1,400	-	440	99	-
Florida	22,729	30,248	17,047	49,997	25,527	77,544	-	6,770	4,266	-
Georgia	7,676	10,215	5,757	16,885	8,621	26,187	-	2,286	1,441	-
Hawaii	507	594	616	884	446	1,420	119	267	84	0
Idaho	6,331	9,747	9,509	14,301	7,306	25,615	11,384	979	1,393	7
Illinois	16,077	12,861	14,011	23,572	8,757	25,560	-	8,033	1,814	-
Indiana	19,012	15,210	16,569	27,875	10,356	30,227	-	9,500	2,145	-
Iowa	16,641	13,313	14,503	24,399	9,065	26,458	-	8,315	1,877	-
Kansas	6,781	10,910	14,912	10,974	8,287	27,980	-	6,891	1,539	-
Kentucky	15,243	20,286	11,432	33,531	17,119	52,004	-	4,540	2,861	-
Louisiana	7,791	10,369	5,843	17,139	8,750	26,581	-	2,321	1,462	-
Maine	3,071	2,457	2,676	4,502	1,673	4,882	-	1,534	346	-
Maryland	10,635	8,508	9,268	15,593	5,793	16,909	-	5,314	1,200	-
Massachusetts	3,263	2,610	2,843	4,784	1,777	5,187	-	1,630	368	-
Michigan	20,717	16,573	18,054	30,375	11,285	32,937	-	10,351	2,337	-
Minnesota	14,564	11,651	12,692	21,354	7,933	23,155	-	7,277	1,643	-
Mississippi	5,592	7,442	4,194	12,302	6,281	19,079	-	1,666	1,050	-
Missouri	11,299	18,181	24,849	18,287	13,810	46,625	-	11,483	2,564	-
Montana	5,474	8,428	8,222	12,366	6,317	22,150	9,844	846	1,205	6
Nebraska	11,335	9,068	9,878	16,619	6,174	18,021	-	5,664	1,279	-
Nevada	1,914	3,080	4,209	3,098	2,339	7,898	-	1,945	434	-
New Hampshire	1,129	903	984	1,655	615	1,795	-	564	127	-
New Jersey	6,266	5,013	5,461	9,187	3,413	9,962	-	3,131	707	-
New Mexico	5,563	8,951	12,233	9,003	6,799	22,953	-	5,653	1,262	-
New York	16,562	13,250	14,434	24,283	9,022	26,332	-	8,276	1,868	-
North Carolina	12,162	16,185	9,121	26,753	13,659	41,492	-	3,622	2,282	-
North Dakota	4,776	3,820	4,162	7,002	2,601	7,593	-	2,386	539	-
Ohio	28,134	22,507	24,519	41,250	15,325	44,730	-	14,058	3,174	-
Oklahoma	13,982	22,498	30,750	22,629	17,089	57,696	-	14,210	3,173	-
Oregon	6,771	10,424	10,169	15,295	7,813	27,394	12,174	1,047	1,490	8
Pennsylvania	24,262	19,409	21,144	35,573	13,216	38,574	-	12,123	2,737	-
Rhode Island	271	217	236	397	148	431	-	135	31	-
South Carolina	4,418	5,880	3,314	9,719	4,962	15,073	-	1,316	829	-
South Dakota	9,269	7,415	8,078	13,590	5,049	14,737	-	4,631	1,046	-
Tennessee	9,262	14,903	20,368	14,989	11,320	38,217	-	9,413	2,102	-
Texas	42,031	67,631	92,434	68,023	51,371	173,436	-	42,716	9,537	-
Utah	4,681	7,533	10,295	7,576	5,722	19,317	-	4,758	1,062	-
Vermont	2,032	1,626	1,771	2,980	1,107	3,231	-	1,015	229	-
Virginia	10,845	14,433	8,134	23,857	12,180	37,001	-	3,230	2,035	-
Washington	9,924	15,279	14,906	22,419	11,453	40,155	17,845	1,534	2,184	11
West Virginia	4,174	5,555	3,130	9,181	4,688	14,240	-	1,243	783	-
Wisconsin	15,320	12,256	13,351	22,463	8,345	24,358	-	7,655	1,728	-
Wyoming	9,472	7,578	8,255	13,888	5,160	15,060	-	4,733	1,069	-
U.S. Total	512,454	599,856	622,256	892,663	450,581	1,434,680	119,994	269,896	84,792	76

State (All numbers are in \$T)	Corn-Related	Soy-Related	Small Grains	Other Plant- based Meal	Processed Plant Co- Products	Forages & Roughage	Synthetic Amino Acids	Total
Alabama	12,405	11,758	5,187	7	49,932	16,119	-	95,407
Alaska	1,258	600	836	3	4,370	1,494	0	8,560
Arizona	23,121	4,418	15,776	114	58,897	18,716	-	121,042
Arkansas	21,330	4,076	14,554	105	54,334	17,266	-	111,666
California	32,827	37,973	41,494	42	266,093	70,158	31	448,617
Colorado	12,418	14,365	15,697	16	100,663	26,541	12	169,711
Connecticut	5,707	2,100	3,611	-	17,457	7,458	-	36,333
Delaware	1,213	446	767	-	3,710	1,585	-	7,722
Florida	40,769	38,643	17,047	23	164,103	52,976	-	313,560
Georgia	13,768	13,050	5,757	8	55,420	17,891	-	105,893
Hawaii	927	442	616	2	3,220	1,101	0	6,307
Idaho	7,522	8,702	9,509	10	60,977	16,077	7	102,804
Illinois	22,145	8,147	14,011	-	67,736	28,938	-	140,977
Indiana	26,188	9,635	16,569	-	80,103	34,222	-	166,717
Iowa	22,922	8,433	14,503	-	70,114	29,954	-	145,927
Kansas	21,855	4,176	14,912	108	55,671	17,691	-	114,412
Kentucky	27,341	25,916	11,432	15	110,055	35,528	-	210,289
Louisiana	13,975	13,247	5,843	8	56,253	18,160	-	107,485
Maine	4,230	1,556	2,676	-	12,938	5,527	-	26,928
Maryland	14,649	5,390	9,268	-	44,808	19,143	-	93,259
Massachusetts	4,494	1,654	2,843	-	13,747	5,873	-	28,611
Michigan	28,536	10,499	18,054	-	87,286	37,290	-	181,666
Minnesota	20,061	7,381	12,692	-	61,362	26,215	-	127,711
Mississippi	10,031	9,508	4,194	6	40,376	13,034	-	77,150
Missouri	36,419	6,959	24,849	180	92,769	29,480	-	190,656
Montana	6,505	7,525	8,222	8	52,728	13,902	6	88,896
Nebraska	15,613	5,744	9,878	-	47,758	20,403	-	99,397
Nevada	6,169	1,179	4,209	31	15,715	4,994	-	32,297
New Hampshire	1,555	572	984	-	4,757	2,032	-	9,900
New Jersey	8,631	3,175	5,461	-	26,400	11,279	-	54,945
New Mexico	17,929	3,426	12,233	89	45,670	14,513	-	93,860
New York	22,814	8,393	14,434	-	69,781	29,812	-	145,234
North Carolina	21,815	20,677	9,121	12	87,809	28,347	-	167,781
North Dakota	6,578	2,420	4,162	-	20,121	8,596	-	41,877
Ohio	38,754	14,258	24,519	-	118,538	50,642	-	246,710
Oklahoma	45,066	8,611	30,750	223	114,798	36,481	-	235,928
Oregon	8,045	9,306	10,169	10	65,213	17,194	8	109,946
Pennsylvania	33,419	12,295	21,144	-	102,222	43,671	-	212,752
Rhode Island	373	137	236	-	1,142	488	-	2,376
South Carolina	7,925	7,512	3,314	4	31,899	10,298	-	60,952
South Dakota	12,768	4,697	8,078	-	39,053	16,684	-	81,280
Tennessee	29,851	5,704	20,368	148	76,040	24,164	-	156,275
Texas	135,471	25,884	92,434	670	345,084	109,662	-	709,205
Utah	15,088	2,883	10,295	75	38,435	12,214	-	78,990
Vermont	2,799	1,030	1,771	-	8,562	3,658	-	17,820
Virginia	19,453	18,439	8,134	11	78,303	25,278	-	149,618
Washington	11,793	13,641	14,906	15	95,591	25,203	11	161,160
West Virginia	7,487	7,096	3,130	4	30,135	9,728	-	57,581
Wisconsin	21,103	7,764	13,351	-	64,549	27,577	-	134,344
Wyoming	13,047	4,800	8,255	-	39,909	17,050	-	83,062
U.S. Total	936,163	446,242	622,256	1,944	3,252,606	1,112,310	76	6,371,597

<u>State</u> <u>(All numbers are</u> <u>in ST)</u>	<u>Circular</u> <u>Ingredient</u>	<u>Non-circular</u> <u>Ingredient</u>	<u>Total</u>
Alabama	67,713	27,694	95,407
Alaska	5,447	3,113	8,560
Arizona	71,872	49,170	121,042
Arkansas	66,305	45,361	111,666
California	304,244	144,373	448,617
Colorado	115,095	54,616	169,711
Connecticut	21,983	14,350	36,333
Delaware	4,672	3,050	7,722
Florida	222,542	91,019	313,560
Georgia	75,155	30,738	105,893
Hawaii	4,014	2,294	6,307
Idaho	69,720	33,084	102,804
Illinois	85,297	55,680	140,977
Indiana	100,871	65,846	166,717
Iowa	88,292	57,635	145,927
Kansas	67,935	46,477	114,412
Kentucky	149,247	61,041	210,289
Louisiana	76,285	31,200	107,485
Maine	16,293	10,635	26,928
Maryland	56,425	36,833	93,259
Massachusetts	17,311	11,300	28,611
Michigan	109,916	71,750	181,666
Minnesota	77,270	50,440	127,711
Mississippi	54,755	22,395	77,150
Missouri	113,207	77,449	190,656
Montana	60,288	28,609	88,896
Nebraska	60,139	39,257	99,397
Nevada	19,177	13,120	32,297
New Hampshire	5,990	3,910	9,900
New Jersey	33,244	21,701	54,945
New Mexico	55,732	38,128	93,860
New York	87,873	57,361	145,234
North Carolina	119,079	48,703	167,781
North Dakota	25,338	16,540	41,877
Ohio	149,270	97,440	246,710
Oklahoma	140,089	95,839	235,928
Oregon	74,563	35,383	109,946
Pennsylvania	128,724	84,028	212,752
Rhode Island	1,438	938	2,376
South Carolina	43,259	17,693	60,952
South Dakota	49,178	32,102	81,280
Tennessee	92,793	63,483	156,275
Texas	421,110	288,095	709,205
Utah	46,902	32,088	78,990
Vermont	10,782	7,038	17,820
Virginia	106,187	43,430	149,618
Washington	109,296	51,864	161,160
West Virginia	40,867	16,714	57,581
Wisconsin	81,284	53,060	134,344
Wyoming	50,256	32,806	83,062
U.S. Total	4,054,722	2,316,874	6,371,597

6.4.11 Aquaculture

State (All numbers are in ST)	Soybean Meal	Soybean Oil	Corn	Corn DDGs	Corn Gluten Meal	Cottonseed Meal	Meat and Bone Meal	Feather Meal	Meat Meal	Bloodmeal	Fishmeal
Alabama	41,867	1,155	17,144	16,975	7	21,501	-	-	13	-	151
Alaska	22	-	-	-	-	-	-	10	9	4	25
Arizona	561	25	189	9	97	12	33	19	103	9	226
Arkansas	11,833	341	4,728	4,334	126	5,490	63	24	218	11	409
California	7,312	341	2,911	746	640	945	97	147	657	68	2,143
Colorado	1,503	56	424	6	195	8	66	144	309	67	811
Connecticut	101	-	-	-	-	-	-	44	40	20	114
Delaware	4	-	1	-	-	-	-	-	3	-	1
Florida	2,085	64	698	433	102	548	26	119	209	55	1,161
Georgia	1,879	60	711	540	-	684	-	56	57	26	246
Hawaii	700	17	206	164	11	207	-	14	21	6	526
Idaho	3,404	41	310	6	81	8	-	1,172	1,142	541	3,352
Illinois	1,457	49	576	430	5	545	4	8	29	4	115
Indiana	626	28	209	-	97	-	33	25	111	12	260
Iowa	576	24	197	51	-	65	-	17	32	8	224
Kansas	1,827	57	706	559	65	708	33	4	73	2	143
Kentucky	660	16	202	169	51	214	33	13	64	6	180
Louisiana	1,051	37	440	318	32	402	-	-	32	-	100
Maine	75	-	1	-	-	-	-	29	32	13	79
Maryland	1,034	24	180	-	147	-	66	344	453	159	1,464
Massachusetts	404	16	120	-	32	-	-	61	80	28	255
Michigan	494	6	91	88	-	112	-	114	116	53	304
Minnesota	389	16	126	-	32	-	-	32	77	15	237
Mississippi	102,447	2,806	41,936	41,788	65	52,932	33	0	75	0	137
Missouri	2,362	65	886	794	-	1,005	-	58	84	27	309
Montana	158	-	-	-	-	-	-	69	63	32	179
Nebraska	923	21	219	132	99	167	66	69	173	32	346
Nevada	45	-	-	-	-	-	-	19	18	9	51
New Hampshire	147	-	-	-	-	-	-	49	45	22	217
New Jersey	28	-	1	-	-	-	-	9	13	4	26
New Mexico	230	8	60	-	16	-	-	43	51	20	160
New York	871	32	238	-	81	-	33	85	173	39	426
North Carolina	2,693	65	576	171	546	217	299	197	733	91	1,140
North Dakota	7	-	-	-	-	-	-	3	3	1	8
Ohio	2,575	85	733	237	328	300	197	65	418	30	743
Oklahoma	933	40	385	180	32	228	-	6	33	3	163
Oregon	645	7	100	100	-	126	-	174	161	80	456
Pennsylvania	2,017	51	450	157	213	198	132	217	439	100	891
Rhode Island	45	-	-	-	-	-	-	19	18	9	51
South Carolina	249	13	95	-	2	-	-	3	13	1	68
South Dakota	104	4	30	-	-	-	-	11	15	5	48
Tennessee	424	13	134	74	8	93	-	42	51	19	154
Texas	6,531	233	2,655	1,819	241	2,304	33	15	223	7	903
Utah	251	-	-	-	49	-	33	66	110	30	205
Vermont	95	-	-	-	-	-	-	41	38	19	108
Virginia	290	8	62	2	17	2	1	65	73	30	220
Washington	494	4	28	-	-	-	-	209	193	97	622
West Virginia	622	15	134	48	-	61	-	149	143	69	500
Wisconsin	1,198	49	384	20	96	25	-	220	294	102	1,050
Wyoming	111	-	-	-	-	-	-	48	44	22	125
U.S. Total	206,358	5,893	79,274	70,350	3,514	89,110	1,279	4,347	7,580	2,006	21,834

State (All numbers are in ST)	Wheat Middlings	Wheat Flour	Poultry Fat	Soy Protein Conc	Wheat Gluten Meal	Lecithin	Fish Oil	Other Ingredients
Alabama	12,799	-	2	799	60	5	1,156	879
Alaska	-	32	13	-	1	3	13	17
Arizona	356	62	25	0	3	6	36	111
Arkansas	4,060	79	54	215	4	7	372	458
California	4,449	479	193	50	23	45	347	1,203
Colorado	826	471	190	3	82	49	222	440
Connecticut	-	143	57	-	7	13	57	76
Delaware	1	-	1	-	-	-	-	0
Florida	814	384	159	22	674	88	242	365
Georgia	763	182	74	34	9	17	133	223
Hawaii	194	45	18	8	600	51	70	75
Idaho	510	3,822	1,532	0	240	365	1,543	2,154
Illinois	633	27	16	27	1	3	61	120
Indiana	411	82	33	1	4	8	47	138
Iowa	349	55	27	9	122	15	54	117
Kansas	745	12	7	30	1	1	62	115
Kentucky	245	41	17	9	122	14	46	67
Louisiana	437	-	2	15	-	-	24	60
Maine	3	95	40	-	4	9	38	51
Maryland	398	1,113	450	-	53	106	467	696
Massachusetts	200	199	80	-	9	19	82	151
Michigan	71	371	152	4	18	35	155	193
Minnesota	213	103	48	-	65	14	48	94
Mississippi	30,983	0	4	1,954	0	0	2,806	2,011
Missouri	781	191	85	41	129	28	149	195
Montana	-	223	90	-	11	21	90	119
Nebraska	383	226	94	10	70	26	129	196
Nevada	-	63	25	-	3	6	25	34
New Hampshire	-	159	64	-	127	24	72	88
New Jersey	3	29	13	-	1	3	11	16
New Mexico	100	139	56	-	7	13	57	97
New York	503	276	117	6	13	26	136	266
North Carolina	1,266	641	266	9	30	61	341	597
North Dakota	-	11	4	-	0	1	4	6
Ohio	1,480	212	96	29	71	25	199	443
Oklahoma	515	21	9	13	1	2	35	115
Oregon	73	568	228	5	27	54	235	308
Pennsylvania	913	707	292	19	33	67	354	581
Rhode Island	-	63	25	-	3	6	25	34
South Carolina	200	11	7	4	0	1	17	59
South Dakota	64	36	16	1	2	3	18	35
Tennessee	169	138	57	5	6	13	65	106
Texas	2,835	48	24	91	242	24	195	472
Utah	49	215	86	-	10	20	93	124
Vermont	-	135	54	-	6	13	54	72
Virginia	102	214	86	0	10	20	87	137
Washington	61	681	274	1	32	64	278	382
West Virginia	220	484	196	6	23	46	210	309
Wisconsin	624	713	293	1	34	68	297	513
Wyoming	-	156	63	-	7	15	63	83
U.S. Total	69,800	14,155	5,814	3,424	2,999	1,521	11,323	15,203

<u>State</u> <u>(All numbers</u> <u>are in ST)</u>	<u>Corn-Related</u>	<u>Soy-Related</u>	<u>Other Plant-</u> <u>based Meal</u>	<u>Processed Plant</u> <u>Co-Products</u>	<u>Animal</u> <u>Byproduct</u> <u>Meals</u>	<u>Fats & Oils</u>	<u>Other Feed</u> <u>Ingredients</u>	<u>Total</u>
Alabama	34,126	41,867	21,561	12,799	164	2,319	1,678	114,514
Alaska	-	22	1	32	49	28	17	150
Arizona	296	561	15	418	390	91	112	1,882
Arkansas	9,188	11,833	5,494	4,139	725	775	673	32,828
California	4,297	7,312	968	4,928	3,112	927	1,254	22,797
Colorado	624	1,503	90	1,297	1,397	518	443	5,873
Connecticut	-	101	7	143	219	128	76	673
Delaware	1	4	-	1	4	1	0	11
Florida	1,233	2,085	1,222	1,199	1,570	553	387	8,249
Georgia	1,252	1,879	693	944	384	285	256	5,693
Hawaii	381	700	807	239	567	156	83	2,933
Idaho	397	3,404	248	4,332	6,207	3,482	2,154	20,225
Illinois	1,011	1,457	546	660	160	128	147	4,109
Indiana	306	626	4	492	441	116	140	2,125
Iowa	248	576	187	405	281	119	126	1,941
Kansas	1,330	1,827	709	757	254	128	146	5,151
Kentucky	422	660	336	285	296	93	76	2,168
Louisiana	789	1,051	402	437	132	63	75	2,950
Maine	1	75	4	98	154	87	51	471
Maryland	326	1,034	53	1,511	2,486	1,048	696	7,154
Massachusetts	152	404	9	399	425	197	151	1,737
Michigan	179	494	129	442	586	348	198	2,376
Minnesota	158	389	65	316	361	127	94	1,509
Mississippi	83,790	102,447	52,932	30,983	244	5,616	3,966	279,978
Missouri	1,680	2,362	1,134	971	478	327	237	7,188
Montana	-	158	11	223	343	200	119	1,054
Nebraska	449	923	237	609	687	269	206	3,381
Nevada	-	45	3	63	97	57	34	299
New Hampshire	-	147	127	159	333	159	88	1,013
New Jersey	1	28	1	32	52	27	16	157
New Mexico	76	230	7	239	273	134	97	1,057
New York	319	871	13	779	756	311	272	3,322
North Carolina	1,294	2,693	247	1,907	2,459	731	607	9,938
North Dakota	-	7	0	11	16	9	6	50
Ohio	1,297	2,575	371	1,692	1,453	405	472	8,265
Oklahoma	597	933	229	536	205	87	128	2,714
Oregon	199	645	153	642	871	523	312	3,346
Pennsylvania	820	2,017	232	1,620	1,779	763	599	7,830
Rhode Island	-	45	3	63	97	57	34	299
South Carolina	97	249	0	211	85	37	64	744
South Dakota	30	104	2	99	79	42	36	391
Tennessee	216	424	100	307	266	148	110	1,571
Texas	4,715	6,531	2,546	2,883	1,181	476	562	18,895
Utah	49	251	10	264	445	199	124	1,343
Vermont	-	95	6	135	206	121	72	635
Virginia	81	290	13	316	389	201	137	1,426
Washington	28	494	32	741	1,121	620	384	3,420
West Virginia	183	622	84	704	860	467	315	3,236
Wisconsin	500	1,198	59	1,337	1,666	708	514	5,982
Wyoming	-	111	7	156	239	140	83	737
U.S. Total	153,139	206,358	92,110	83,956	37,046	24,551	18,627	615,787

<u>State</u> <u>(All numbers</u> <u>are in ST)</u>	<u>Circular</u> <u>Ingredient</u>	<u>Non-circular</u> <u>Ingredient</u>	<u>Other Ingredients</u>	<u>Total</u>
Alabama	94,179	19,456	879	114,514
Alaska	120	13	17	150
Arizona	1,521	250	111	1,882
Arkansas	26,928	5,441	458	32,828
California	17,995	3,599	1,203	22,797
Colorado	4,730	702	440	5,873
Connecticut	539	57	76	673
Delaware	10	1	0	11
Florida	6,879	1,005	365	8,249
Georgia	4,566	905	223	5,693
Hawaii	2,565	293	75	2,933
Idaho	16,177	1,894	2,154	20,225
Illinois	3,304	685	120	4,109
Indiana	1,703	284	138	2,125
Iowa	1,550	274	117	1,941
Kansas	4,210	825	115	5,151
Kentucky	1,837	265	67	2,168
Louisiana	2,389	501	60	2,950
Maine	380	39	51	471
Maryland	5,786	671	696	7,154
Massachusetts	1,367	218	151	1,737
Michigan	1,931	252	193	2,376
Minnesota	1,225	190	94	1,509
Mississippi	230,418	47,548	2,011	279,978
Missouri	5,892	1,100	195	7,188
Montana	845	90	119	1,054
Nebraska	2,817	369	196	3,381
Nevada	240	25	34	299
New Hampshire	853	72	88	1,013
New Jersey	129	13	16	157
New Mexico	835	125	97	1,057
New York	2,650	407	266	3,322
North Carolina	8,359	981	597	9,938
North Dakota	40	4	6	50
Ohio	6,806	1,017	443	8,265
Oklahoma	2,139	460	115	2,714
Oregon	2,697	341	308	3,346
Pennsylvania	6,395	855	581	7,830
Rhode Island	240	25	34	299
South Carolina	560	125	59	744
South Dakota	304	52	35	391
Tennessee	1,253	212	106	1,571
Texas	15,339	3,084	472	18,895
Utah	1,126	93	124	1,343
Vermont	509	54	72	635
Virginia	1,132	157	137	1,426
Washington	2,728	310	382	3,420
West Virginia	2,567	360	309	3,236
Wisconsin	4,738	731	513	5,982
Wyoming	591	63	83	737
U.S. Total	504,093	96,490	15,203	615,787

6.5 Changes in Animal Numbers and Feed Consumption 2023 vs 2019

Total consumption of feed (without forages) in the 2025 report (2023 feed consumption data) is estimated at 283.6 million tons of feed versus 275.2 million tons of feed in the 2020 report (2019 feed consumption). This represents a 3.05% increase in total feed consumption from 2019 to 2023. During that period, there was a 3.5% decrease in animal units (not counting the change in horses for which there was a change in the inventory used from USDA inventory to American Horse Council Surveyed inventory). There were two other significant changes in the animals “that count” for the feed consumption in 2023 versus 2019. The largest impact was an expansion of the beef cattle analysis from just calves and cattle on feed that were used in the 2019 study to inclusion of all segments of the beef supply chain (cows, bulls, calves, backgrounders, replacement heifers, and cattle on feed). The second change was an expansion of the analysis for sheep and goats. In the 2020 report (2019 feed consumption data), only corn and soybean meal were analyzed for sheep and only soybean meal for meat goats. In 2023 feed consumption data, all segments of sheep and goat production were included in the analysis (including meat and dairy goats) and a full list of feed ingredients was analyzed.

These three changes account for a significant portion of the increase in feed consumption from 2019 to 2023 with total beef cattle feed increasing 19% while beef cattle animal units declined 5.5%. While these other segments of beef production get much of their nutrition from grazing, the inclusion of these segments resulted in a 16% increase in corn consumption by beef cattle, a 34% increase in soybean meal consumption by beef cattle, and an 8.5% increase in DDG consumption by beef cattle.

The expansion of the sheep and goat category resulted in a 138% expansion of corn consumption by sheep and goats, and an 8.4% expansion of soybean meal consumption by sheep and goats.

The change in sources of horse inventory data resulted in a significant increase in the number of horses included in the analysis (155% more horses). However, based on changes to horse diets with input from the industry nutrition experts, soybean meal calculated for horse consumption declined by 43% and DDGs consumed by horses declined by 59%. While these numbers represent large percentage changes of feed consumption by horses, in the overall analysis, they were not nearly as significant as the changes to beef and sheep & goat consumption analyses.

The following tables summarize the changes from 2019 to 2023 in animal units for the species as well as changes in total feed consumption (without forages), and the changes in feed consumption of the top 3 ingredients, corn, soybean meal and DDGs.

Percent Change (2023 vs 2019)					
	Percent Change in Animal Units	Percent Change in Total Feed (w/o Forages)	Corn	SBM	DDGs
Broiler	-0.2%	1.2%	8.1%	8.0%	-57.5%
Layer	-4.3%	-4.3%	-9.8%	12.9%	-37.6%
Turkey	-4.8%	-4.8%	23.8%	-23.9%	11.8%
All Cattle	-4.1%	9.8%	16.2%	33.7%	8.5%
Beef	-5.5%	19.0%	25.7%	61.0%	34.6%
Dairy	1.1%	-2.2%	-2.0%	30.8%	-37.4%
Hog	-4.4%	-1.6%	8.1%	-15.7%	27.1%
Sheep & Goats	-2.1%	528.3%	138.1%	8.4%	
Horse	154.6%	-31.3%		-42.8%	-59.2%
Aquaculture		0.5%	9.3%	1.8%	0.6%
Total Animal Feed		3.05%	11.0%	2.8%	1.6%

Summary of Changes in Feed Consumption by Species (2023 vs 2019)				
Year	2019-2023 Percent Change in Animal Units	2019 (short tons)	2023 (short tons)	Percent Change in Feed Consumption (w/o Forages)
Broiler	-0.2%	60,790,688	61,501,523	1.2%
Layer	-4.3%	19,232,380	17,678,811	-4.3%
Turkey	-4.8%	10,574,242	10,920,171	-4.8%
Beef	-5.5%	64,480,570	76,729,771	19.0%
Dairy Cattle	1.1%	49,829,024	48,740,751	-2.2%
Hogs	-4.4%	61,843,813	60,880,899	-1.6%
Sheep & Goats	-2.1%	153,221	1,245,637	528.3%
Horse	Change in Source	7,658,189	5,259,267	-31.3%
		613,000	615,787	0.5%
Total Animal Feed	-3.5%*	275,175,127	283,289,702	3.05%
* Not including change in horse numbers				

In comparing the 2023 feed consumption data to 2019 feed consumption data, the expanded beef cattle sector accounted for 12.3 million tons of the 8.4 million ton increase in total feed consumption and sheep and goats accounted for about 1 million tons of the increase in total feed consumption. As noted before, these were both due to expansion of the segments of production that were included in the study and for sheep and goats, expansion of the list of ingredients consumed by sheep and goats.

The expansion of the feed consumption of broilers was mostly due to changes (increases) in soybean meal inclusion rates in the diets with compensatory changes to both corn and DDG inclusion rates. There also appears to be some trend increase in the live weight of broilers that is contributing to increased feed consumption per animal. Average RTC broiler meat per bird has increased from 4.78 lbs per bird to 5.07 lbs per bird since 2019.

Here are some additional points:

- Feed consumption by hogs declined by approximately 1 million tons and the decline would have been greater except for an increasing trend in live weights for slaughter hogs.
- Feed consumption by layers declined by 1.6 million tons, with flock depopulations due to HPAI influencing the total feed consumption.
- Feed consumption by horses declined by 2.4 million tons mostly due to changes to the diets based on expert input with less reliance on Soybean meal and DDGs in horse diets that was used in the 2019 diets.
- Dairy cattle diets used much more soybean meal and whole soybeans and less DDGs in the 2023 diets as compared to 2019 diets.

Additional notes regarding comparison of 2023 feed consumption to 2019 feed consumption.

If cattle feed consumption from 2020 is adjusted down 5.5% due to reductions in cattle numbers, and the sheep consumption from 2020 is adjusted down by 2.1% due to reduction in numbers then the increase in feed consumption for those two species due to expansion of “scope of coverage” in both growth segments included and feed ingredients included is 16,891,266 tons. If that amount is subtracted from the 2023 animal feed total (leaving out feed for horses from both 2019 and 2023 numbers), then the comparison would be 267.5 million tons in 2019 and 261.1 million tons of animal feed in 2023, a decline of 6.4 million tons or a 2.4% reduction in animal feed that coincides with a 3.5% reduction in animal units. That would mean that animal feed consumption per animal unit went up about 1.1% from 2019 to 2023. This would be consistent with broiler feed consumption up 1.2% while broiler numbers were down 0.2% and feed consumption by hogs down 1.6% while hog numbers were down 4.4%

One of the comments is that 2023 had less animal numbers than 2019 but fed more feed (without harvest forages and roughages). Another possible reason is due to the ingredient list expanding. Compared to the 2020 report (2019 diets), 23 feed ingredients were added into this year’s report (2023 diets).

It may not be the ration switching, but these 23 feed ingredients were not estimated in the 2019 diets. 100% of added harvest forages and roughages (37.5 million short tons) went to dairy and beef cattle diets. More than 60% of added feed ingredients went to dairy and beef cattle diets. Out of the 10.3 million short tons from the added feed ingredients, more than 45% was due to molasses and sugar beet pulp.

Ingredient Aggregation	Ingredient	Sheep and									Total
		Broilers	Layers	Turkeys	Hogs	Dairy Cattle	Beef Cattle	Horses	Goats	Aquaculture	
Animal Byproduct Meals	Poultry Byproduct Meal	188,290	63,768	188,285	183,199	1,331,400	-	-	-	-	1,954,941
Fats & Oils	Corn Crude Oil	-	-	6	-	234,671	-	-	-	-	234,677
Fats & Oils	Distiller Corn Oil	34,433	-	9,823	-	143,959	-	-	-	-	188,215
Fats & Oils	Poultry Fat	54,904	-	48,650	-	827,927	-	-	-	5,814	937,294
Fats & Oils	Used Cooking Oil	40,162	-	2,963	-	-	-	-	-	-	43,125
Fats & Oils	Canola Oil	-	-	-	-	177,679	-	-	-	-	177,679
Other Feed Ingredients	Whey	-	-	-	8,932	-	-	-	-	-	8,932
Other Feed Ingredients	Milk Replacer	-	-	-	-	861,044	-	-	-	-	861,044
Other Plant-based Meal	Non-corn Brewers Products	-	-	-	-	-	44,353	-	-	-	44,353
Other Plant-based Meal	Wheat Gluten Meal	-	-	-	-	-	-	-	-	2,999	2,999
Processed Plant Co-Products	Wheat Flour	203,290	-	-	503,033	-	-	-	-	14,155	720,478
Processed Plant Co-Products	Sugar Beet Pulp	-	-	-	-	44,784	926,291	1,434,680	180,351	-	2,586,107
Processed Plant Co-Products	Citrus Pulp	-	-	-	-	987	10,172	-	0	-	11,158
Processed Plant Co-Products	Peanut Hulls	-	-	-	-	-	-	-	-	-	-
Processed Plant Co-Products	Alfalfa Meal	-	-	-	-	-	-	269,896	-	-	269,896
Processed Plant Co-Products	Molasses	35,704	-	46,110	249,666	655,646	1,131,019	84,792	34,560	-	2,237,497
Small Grains	Rye	-	-	-	545	-	-	-	-	-	545
Synthetic Amino Acids	Valine	7,449	1,962	1,343	-	-	-	-	-	-	10,755
Vitamins & Minerals	Sodium Bicarbonate	35,755	9,419	6,448	-	-	-	-	-	-	51,622
	Total New Added Feed Ingredients (w/o Forages)	599,987	75,149	303,628	945,376	4,278,097	2,111,834	1,789,368	214,912	22,969	10,341,319

Ingredient Aggregation	Ingredient	Sheep and									Total
		Broilers	Layers	Turkeys	Hogs	Dairy Cattle	Beef Cattle	Horses	Goats	Aquaculture	
Forages & Roughage	Legume Silage	-	-	-	-	21,039,802	2,102,157	-	-	-	23,141,959
Forages & Roughage	Sorghum Silage	-	-	-	-	367,494	4,396,338	-	-	-	4,763,832
Forages & Roughage	Corn Stalks	-	-	-	-	1,907,564	5,581,861	-	-	-	7,489,425
Forages & Roughage	Wheat Straw	-	-	-	-	437,719	1,652,777	-	-	-	2,090,495
	Total New Added Harvest Forages and Roughages	-	-	-	-	23,752,578	13,733,133	-	-	-	37,485,711