



US Market Report

Future looks bright amidst new virus challenges

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One of the biggest international events of 2019 was the large-scale protest in Hong Kong against proposed legislation aimed at allowing the extradition of its citizens to China. The protest, estimated at over one million people, was responsible for shutting down the Hong Kong international airport. Other notable events last year include President Donald Trump being the first sitting United States (US) president to cross the Korean Demilitarized Zone and enter North Korea for a trilateral meeting between South Korean President Moon Jae-in and North Korean Leader Kim Jong-un in late June. On December 18, 2019, on a pure party-line vote, Trump was impeached by the US House of Representatives only to be acquitted by the Senate on February 5, 2020. As 2019 ended, 2020 ushered in the conclusion of the United Kingdom's (UK's) membership in the European Union (EU) 47 years after it began. The UK will now be focused on renewing its trade relationship with the United States along with establishing new trade with the EU.

In 2018, a trade war between the United States and China began when Trump issued multiple proclamations adjusting imports of steel and aluminum. China reacted by imposing a 25 percent tariff on US soybeans and other agricultural commodities. The US rendering industry was exempt until late 2018 when China enacted a 5 percent tariff on rendered protein meals followed by an additional 5 percent retaliatory tariff in 2019. From June 1, 2019, through the remainder of the year, the total retaliatory tariff on US rendered proteins was 10 percent, plus the normal tariff of 2 percent and an 11 percent value-added tax for a total of 23 percent.

On February 14, 2020, phase-one of the new US/China trade agreement went into effect. What does that mean for US renderers? China has agreed to increase purchases of agricultural products, including non-ruminant protein meals, from the United States by 60 percent over the next two years. Within days of the implementation of the agreement, 24 new US pet food and animal feed facilities were included on a list of plants allowed to export to China. The US Animal and Plant Health Inspection Service (APHIS) will send updates on a monthly basis to the General Administration of Customs of the People's Republic of China (GACC), which has committed to adding new plants to their approved list within 20 days. This provision eliminates the bottleneck that was preventing new non-ruminant protein plants from being approved. The North American Renderers Association (NARA) pushed hard for this concession within the agreement.

GACC will need to relax its ruminant protein meal ban through the technical negotiations over the coming months. NARA is working with APHIS to resubmit market access requests to the GACC for ruminant meat and bone meal (MBM), gel bone, and blood products. Within the trade agreement for meat, edible tallow and lard have been included for access to the China market. NARA is working with the Food Safety Inspection Service as the import protocols are negotiated.

While the trade agreement has aggressive timelines for protocols to be negotiated, the novel coronavirus (COVID-19) that hit both countries in early 2020 will likely slow down progress. In addition, the livestock feed sector in China has declined due to African swine fever (ASF). The new trade agreement has its pros and cons, with the positives being:

- New non-ruminant protein meal plants added to the GACC registry
- Non-ruminant animal protein registration delays resolved
- GACC/APHIS monthly technical meetings will allow for resolving trade issues
- There is a path forward for ruminant MBM, gel bone, and bovine blood products
- China commits to increasing overall two-year purchases of US ag products by 60 percent over the 2017 baseline
- Edible rendered fat negotiations for import protocols

The negatives, however, are:

- No clear solution for soybeans, meaning soybean prices will likely continue to drag down animal protein meal prices
- Purchase commitments only cover the next two years
- The purchase provision could strengthen state trading and China is focusing sourcing on alternative soy/grain suppliers
- COVID-19 will likely make it difficult to meet commitment deadlines

As mentioned earlier, animal protein meals were targeted by China with a 10 percent retaliatory tariff rate in 2019 as the trade war escalated. NARA did not sit idly by. Peng Li, NARA regional director for Asia, coordinated with local industry to petition the Chinese government to waive the tariffs for rendered animal protein meals and rallied support for NARA's campaign. On February 18, 2020, the ministry of finance for China announced a new procedure for Chinese importers

to apply online (<http://gszx.mof.gov.cn>) for tariff exemption for 696 categories of US products, including non-ruminant animal protein meals. Instead of entering the review process, the on-line application generates bar codes for customs to impose normal tariff (two percent) only. NARA has confirmed from various sources that the 10 percent retaliatory tariff on US non-ruminant protein meal is now waived.

On another front, trade negotiations for bovine MBM between APHIS and SENASECA (Mexico's national service of health, food safety, and quality) have concluded. The US rendering industry can now export bovine MBM to Mexico after SENASECA published the requirements on its website. APHIS has completed a facility inspection checklist and guidance for its inspectors that has been sent to its field offices, allowing exporters to begin requesting inspections from APHIS.

Domestic Developments

Production and Imports Thrive

US cattle slaughter in 2019 was 33.6 million head, up 1.7 percent from 2018, showing a continued upswing in the cattle cycle that began in 2016 and the largest cattle slaughter since 2011. Cattle slaughter has increased 16 percent in the last five years; however, average annual live weight decreased slightly from 1,350 pounds in 2018 to 1,344 pounds in 2019.

The swine and poultry industries remained strong as well, with hog slaughter at 129.9 million head, up 4.4 percent from 2018. Annual average live weight at slaughter increased slightly from 283 pounds in 2018 to 285 pounds last year. Broiler and mature chicken production were up 1.9 percent in 2019, totaling nearly 9.34 billion birds slaughtered while live weight increased from 6.26 to 6.32 pounds, continuing an upward trend of heavier birds. Turkey slaughter fell nearly 4 percent from 236.9 million birds in 2018 to 227.7 million last year, while average annual live weight per bird increased from 31.1 pounds in 2018 to approximately 32.0 pounds in 2019. In the last five years, there has been upward growth in beef, pork, and poultry slaughter: beef increased 16 percent, pork up 12 percent, and poultry grew 6 percent. During the same period, turkey production declined 2 percent.

Production and consumption data for the rendering industry was historically reported in the US Census Bureau's *M311K—Fats and Oils: Production, Consumption, and Stocks* report. This report was discontinued in July 2011 after government cutbacks; however, in May 2015, the National Agricultural Statistics Service (NASS) statisticians released their first survey results for rendered product production. In 2016, NASS published its first full year of data, hence 2016 through 2019 production in table 2 is data from the NASS *Fats and Oils: Oilseed Crushings, Production, Consumption, and Stocks Annual Summary* that is released every March.

The 2014–2015 data in table 2 was derived using NASS monthly data as a baseline to derive historic production via the relationship between the production of rendered products and slaughter data. Yellow grease production in 2016 and after is NASS data, but prior to 2016, data was calculated using the relationship between yellow grease production numbers in the 2010 report titled *A Profile of the North American Rendering Industry* from Informa Economics, and cooking oil consumption as reported by the US Department of Agriculture (USDA). The NASS publication does not include consumption, so data for animal fats use in biodiesel/renewable fuel production in table 2 is compiled from the Energy Information Agency (EIA) *Monthly Biodiesel Production Report*. Other consumption data is derived from subtracting production estimates from export estimates and biofuels use. Carryover is not accounted for in these estimates.

In 2019, production of rendered products totaled 10.7 million metric tons (MMT), up 2.5 percent from 2018. Total animal fat and yellow grease produced last year was 5.9 MMT, up 1.3 percent from the previous year, with tallow production about the same as in 2018 at nearly 2.8 MMT. Inedible tallow production decreased slightly from 1.76 MMT in 2018 to 1.75 MMT in 2019, technical tallow production increased half of a percent from 566,450 MT in 2018 to 569,400 MT in 2019, while edible tallow grew 1.2 percent from 446,500 MT in 2018 to 452,100 MT in 2019. White grease production followed the uptick in hog slaughter last year, increasing to

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Table 1. Average annual prices of select rendered products, 2014–2019 (per metric ton)

Product (Location)	2014	2015	2016	2017	2018	2019	% Change 18/19
Fats							
Beef tallow, packer (Chicago)	\$801	\$581	\$638	\$682	\$556	\$600	8
Choice white grease (Missouri River)	\$711	\$498	\$537	\$549	\$463	\$512	11
Edible tallow (Chicago)	\$865	\$638	\$714	\$762	\$690	\$748	8
Edible tallow (Gulf)	\$803	\$563	\$746	\$731	\$662	\$740	12
Lard (Chicago)	\$959	\$670	\$708	\$729	\$718	\$683	-5
Poultry fat (Mid-South)	\$660	\$502	\$546	\$605	\$566	\$564	0
Yellow grease (Missouri River)	\$612	\$462	\$505	\$524	\$408	\$466	14
Protein meals							
Blood meal, porcine (Midwest)	\$1,643	\$1,086	\$899	\$968	\$822	\$732	-11
Blood meal, ruminant (Missouri River)	\$1,580	\$1,070	\$857	\$931	\$790	\$714	-10
Feather meal (Mid-South)	\$772	\$521	\$391	\$437	\$497	\$390	-22
Meat and bone meal, porcine (Missouri River)	\$556	\$377	\$314	\$314	\$308	\$234	-24
Meat and bone meal, ruminant (Missouri River)	\$502	\$359	\$294	\$273	\$263	\$215	-18
Poultry by-product meal, 57% protein (Mid-South)	\$610	\$447	\$330	\$306	\$295	\$266	-10
Poultry by-product meal, 67% protein (Mid-South)	\$871	\$602	\$614	\$688	\$721	\$577	-20

Source: The Jacobsen.

Table 2. US production, imports, consumption, and exports of rendered products, 2014–2019 (000 metric tons)

Category	2014	2015	2016	2017	2018	2019	% Change 18/19
Production							
Tallow	2,441.4	2,385.7	2,559.5	2,594.9	2,770.8	2,767.4	-0.1
Inedible tallow	1,538.0	1,502.9	1,587.4	1,663.8	1,757.7	1,745.9	-0.7
Technical tallow	512.8	501.1	562.5	521.5	566.5	569.4	0.5
Edible tallow	390.6	381.7	409.6	409.6	446.5	452.1	1.2
Poultry fat	1,056.5	1,088.8	1,113.3	1,095.3	1,025.6	1,133.9	10.6
Yellow grease/used cooking oil	933.2	926.4	916.4	913.0	992.2	1,007.7	1.6
White grease	707.3	758.7	787.6	750.5	736.8	768.9	4.4
Lard	148.1	158.9	167.3	158.2	149.4	158.0	5.8
Choice white grease	559.2	599.8	620.3	592.3	587.4	610.9	4.0
Other greases	333.9	341.7	336.0	369.2	285.9	209.4	-26.8
Subtotal	5,472.3	5,501.3	5,712.8	5,722.9	5,811.3	5,887.3	1.3
Meat & bone meal	2,532.4	2,591.8	2,711.5	2,790.2	2,658.2	2,694.4	1.4
Poultry by-product meal	1,387.1	1,429.4	1,382.1	1,438.8	1,368.7	1,548.6	13.1
Feather meal	520.7	536.6	527.2	522.0	464.5	601.0	29.4
Subtotal	4,440.1	4,557.9	4,620.8	4,751.0	4,491.3	4,844.0	7.9
Total production	10,221.0	9,912.4	10,059.2	10,333.6	10,473.9	10,731.3	2.5
Imports							
Tallow	62.6	64.0	78.9	99.8	139.3	192.0	37.8
Yellow grease/used cooking oil	17.2	22.4	23.0	38.7	62.9	88.0	40.0
White grease	20.8	34.4	28.8	27.0	35.8	27.2	-24.1
Lard	7.3	6.5	4.7	5.8	6.9	6.2	-9.2
Choice white grease	13.5	28.0	24.1	21.2	28.9	20.9	-27.7
Poultry fat	4.4	6.4	5.8	19.5	5.9	34.9	491.2
Subtotal	105.0	127.1	136.4	185.0	243.9	342.1	40.3
Meat & bone/poultry/porcine meal	69.6	64.1	82.2	83.6	108.9	117.4	7.8
Feather meal	0.4	0.2	0.6	0.7	0.4	0.3	-23.0
Subtotal	70.0	64.3	82.8	84.3	109.3	117.7	7.7
Total imports	174.9	191.5	219.2	269.2	353.2	459.8	30.2
Consumption							
Biodiesel							
Animal fats	468.5	576.5	512.6	524.9	584.2	449.9	-23.0
White grease	213.6	267.2	262.2	268.1	280.3	243.2	-13.3
Tallow	161.0	195.0	150.6	176.5	219.5	132.6	-39.6
Poultry fat	79.8	89.4	99.8	80.3	60.3	74.1	22.9
Other	14.1	24.9	n/a	n/a	24.0	n/a	
Recycled oils	583.3	624.6	630.0	667.2	832.8	655.7	-21.3
Yellow grease/used cooking oil	493.5	569.3	630.0	667.2	756.6	655.7	-13.3
Other	89.8	55.3	n/a	n/a	76.2	n/a	
Subtotal	1,051.8	1,201.1	1,142.6	1,192.1	1,417.0	1,105.6	-22.0
Meat & bone/poultry/porcine meal	3,418.0	3,401.4	3,333.2	3,360.4	3,120.4	3,200.1	2.6
Feather meal	355.1	449.8	464.2	442.6	355.0	511.0	43.9
Subtotal	3,773.1	3,851.2	3,797.4	3,729.0	3,475.4	3,711.0	6.8
Exports							
Inedible tallow/technical tallow	402.5	343.1	283.3	324.6	327.0	301.0	-7.9
Yellow grease	333.1	253.0	286.2	300.2	360.7	448.2	24.2
Edible tallow	40.8	64.8	120.1	77.7	117.9	121.4	3.0
Lard	21.4	19.8	19.1	17.2	16.8	22.5	33.8
Poultry fat	18.2	16.4	14.7	16.1	14.8	12.9	-13.3
Choice white grease	0.6	0.2	0.4	0.8	0.4	0.7	57.0
Subtotal	816.7	697.2	723.8	736.5	837.6	906.6	8.2
Meat & bone/poultry/porcine meal	501.5	619.9	760.4	868.5	906.5	1,043.0	15.1
Feather meal	166.0	87.0	63.6	80.1	109.9	90.4	-17.8
Subtotal	667.4	706.9	823.9	891.8	1,016.4	1,133.3	11.5
Total exports	1,484.1	1,404.1	1,547.7	1,628.3	1,854.0	2,039.9	10.0

Sources: Global Trade Atlas for exports, EIA for biodiesel inputs, NASS *Fats and Oils: Oilseed Crushings, Production, Consumption, and Stocks Annual Summary* for 2019 production. Notes: n/a—not available

Table 3. US annual livestock and poultry slaughter, 2014–2019 (thousand head)

Species	2014	2015	2016	2017	2018	2019	% Change 18/19
Broilers/Mature chickens	8,669,628	8,822,692	8,908,986	9,050,716	9,160,910	9,339,249	1.9
Cattle	30,266	28,843	30,578	32,189	33,005	33,550	1.7
Hogs	106,958	115,512	118,220	121,317	124,435	129,914	4.4
Turkeys	236,617	232,389	243,255	241,677	236,860	227,660	-3.9

Source: NASS.

768,900 MT, a 4 percent surge over 2018. Lard and choice white grease production increased 5.8 percent and 4.0 percent, respectively, from 2018, while yellow grease/used cooking oil (UCO) production was over 1 MMT for the first time in 2019, up 1.6 percent over 2018. Yellow grease/UCO statistics are likely under-reported with industry estimates suggesting production is closer to 1.4 MMT.

Animal protein meal production in 2019 grew 7.9 percent over 2018 levels to 4.8 MMT, with meat and bone meal production up 1.4 percent to 2.7 MMT, poultry by-product meal up 13.2 percent to just over 1.5 MMT, and feather meal up 30 percent to 601,000 MT.

While imports of rendered products are not uncommon due to intra North American trade along with lamb meal imports for pet food production, recent increases of animal fat and UCO imports is due to biodiesel and renewable diesel demand in the United States. The Low Carbon Fuel Standard in California attracts low carbon intensive feedstocks to meet its mandates. Under this standard, these products are preferred over other feedstocks due to their low carbon intensity (CI) scores. UCO has some of the lowest CI scores, followed by distiller's corn oil, animal fats, and finally vegetable oils. To achieve California Air Resources Board reduction mandates for CI, biodiesel production is predicted to rise 150 percent and renewable diesel production 230 percent by 2030. UCO and rendered fats have low CI scores compared to other feedstocks, putting them in high demand. In 2019, overall imports of tallow and UCO increased nearly 40 percent from 2018. Over the past five years, US imports of tallow and UCO have grown 224 percent.

On the animal protein meal side, US imports were 117,400 MT in 2019, up 8 percent from 2018 and up 83 percent in the last five years. This dramatic increase is not coming from the traditional cross-border trade with Canada and imports from Australia and New Zealand, but in new trade with EU countries and Brazil. In 2019, 13,500 MT were exported to the United States from Brazil and over 18,000 MT from EU countries while US exporters are denied market access to the EU for both protein meals and tallow via regulatory non-tariff trade barriers.

Consumption Data Harder to Track

As mentioned earlier in this report, NASS does not include domestic consumption in its monthly surveys. In previous years, consumption data was derived by adding production plus imports and then subtracting biodiesel inputs as reported by EIA and exports as reported by the Global Trade Atlas. There are no reports, however, that cover the consumption of animal fats and UCO by renewable diesel producers and coprocessors. Hence, until that data is available, this report will no longer publish the consumption data for "Feed, Food, Fatty Acid, Carry Over, Other" category tracked previously.

Last year, total animal fat use in the United States for biodiesel production was 1.1 MMT, down 22 percent from 2018. This drop is likely due to consumption by renewable diesel producers and coprocessors, but, as mentioned before, data for this sector is not available.

Domestic consumption of animal protein meals was up 6.7 percent in 2019 versus 2018, totaling more than 3.7 MMT. Despite this growth, domestic consumption has decreased 4 percent since 2015 while production has increased 6 percent. This drop in domestic consumption is mainly due to the all-vegetarian diet trend in the broiler industry and Halal chicken production. It is estimated that between 25 and 30 percent of US broiler operations now use all-vegetarian diets, hence the supply/demand scenario for protein meals in the United States is critically off balance and shows the need to grow new markets for animal protein meals.

New markets for animal protein meals remains a focus for NARA. Last year, overall rendered product exports were just over 2 MMT, up 10 percent from 2018 and up 45 percent over the last five years. This export growth was carried by a dramatic increase in protein meals while being offset by a decrease in fat exports. Over the last five years, animal protein meal exports grew 64 percent while fat exports dropped 30 percent.

Fats will Expand, but Proteins need New Markets

As the cattle cycle rebounds, and poultry and pork production continue to increase, there will be a greater supply of rendered products on the market. According to the USDA *Agricultural Projections to 2029* report, during the next 10 years, beef production is forecast to grow 9 percent, pork production 16 percent, and poultry production 12 percent. Using these forecasts, animal protein and fat production can be estimated. During the next 10 years, an increase of animal protein meals of approximately 594,000 MT and additional animal fats of 894,000 MT are projected.

The domestic demand for animal protein meals will remain influenced by plant-based diet trends. If this does not change, domestic demand for animal protein meals and fats for livestock feed will either stabilize or continue to decline, hence the need for new markets for animal protein meals will be critical. Regarding animal fats and used cooking oil, as stated earlier, estimated demand from the biodiesel and renewable diesel industries are predicted to grow in the coming years. For instance, Diamond Green Diesel nearly doubled production in 2018 at its renewable diesel facility in Louisiana from 150 million gallons to 275 million gallons with plans to expand to 550 million gallons, increasing its need for feedstock to more than 2 MMT. There will also be expansion of other renewable fuel producers in the United States along with increased demand from coprocessors; therefore, the 10-year projected increase in animal fats production should be offset by added demand from the renewable diesel, coprocess, and biodiesel sectors. The projected increase in animal protein meal production, however, will need to be offset by expanding existing markets and finding new outlets for these products.

International Market Conditions

Record Exports for Protein Meals

Global demand for protein meals continued to grow dramatically in 2019, coming from the livestock, aquatic, and pet food sectors. According to the *2020 Alltech Global*

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Table 4. US export customers by product, 2014–2019 (metric tons)

Product/Country	2014	2015	2016	2017	2018	2019	% Change 18/19
Inedible tallow							
Mexico	235,843	227,876	145,636	126,624	136,009	129,975	-4.4
Singapore	5,000	14,275	46,312	119,240	88,421	100,600	13.8
Canada	18,493	20,797	22,600	20,000	35,428	29,841	-15.8
Morocco	9,000	7,000	7,198	6,450	13,750	13,050	-5.1
Turkey	59,474	20,898	19,249	7,200	11,260	10,750	-4.5
Guatemala	21,470	20,449	20,094	15,249	13,608	6,800	-50.0
Colombia	6,100	8,000	0	1,856	9,200	4,200	-54.3
Honduras	11,499	9,000	8,240	5,641	3,370	2,300	-31.8
Nigeria	0	0	0	7,500	10,400	2,000	-80.8
Dominican Republic	3,000	3,500	4,550	2,750	3,750	1,450	-61.3
El Salvador	3,750	2,900	3,000	1,200	500	500	0.0
Trinidad and Tobago	264	205	78	159	73	34	-53.4
China	0	0	0	0	385	0	-100.0
Total	402,548	343,117	283,282	324,587	326,954	301,000	-7.9
Yellow grease (includes UCO)							
Singapore	2,675	1,755	1,541	8,110	71,747	178,709	149.1
European Union–28	153,813	128,128	185,000	176,004	172,093	160,812	-6.6
Mexico	95,574	72,564	50,034	63,372	39,267	48,625	23.8
Bosnia and Herzegovina	499	3,883	11,045	24,407	38,388	26,096	-32.0
Canada	10,604	11,716	9,073	7,726	7,933	8,714	9.8
Dominican Republic	15,518	9,585	10,639	9,652	7,943	7,215	-9.2
Jamaica	7,300	1,310	1,568	1,211	3,511	3,464	-1.3
Honduras	5,890	7,057	6,939	2,167	6,497	3,145	-51.6
China	276	965	1,796	1,952	2,330	2,493	7.0
Morocco	0	0	0	41	0	1,510	
Ecuador	373	48	301	554	1,388	1,410	1.6
Trinidad and Tobago	1,144	2,193	353	166	433	1,407	224.9
Guatemala	7,125	6,066	651	618	1,583	778	-50.9
Colombia	439	593	1,846	743	445	662	48.8
South Korea	552	961	1,350	307	3,205	380	-88.1
Total	333,133	252,959	286,226	300,198	360,701	448,150	24.2
Edible tallow							
Mexico	35,840	61,076	114,154	72,120	113,525	118,770	4.6
Canada	4,807	3,657	5,706	5,552	4,338	2,547	-41.3
Total	40,783	64,762	120,146	77,678	117,903	121,424	3.0
Lard							
Mexico	18,848	17,691	16,924	15,876	16,173	22,115	36.7
Canada	612	393	988	605	264	259	-1.9
Total	21,390	19,768	19,050	17,181	16,825	22,506	33.8
Choice white grease							
Mexico	208	27	67	659	295	573	94.2
China	0	58	136	37	26	36	38.5
Hungary	0	0	0	0	0	14	
Total	639	202	374	797	421	661	57.0
Poultry fat							
Canada	13,072	10,943	9,320	10,125	8,822	7,075	-19.8
Peru	0	0	958	1,597	2,511	2,080	-17.2
Mexico	1,731	2,418	2,139	2,545	1,955	1,780	-9.0
Guatemala	458	446	516	567	561	1,003	78.8
Dominican Republic	577	616	671	443	403	586	45.4
Colombia	82	107	91	75	100	107	7.0
Total	18,175	16,376	14,725	16,064	14,842	12,862	-13.3
Feather meal							
Chile	48,135	24,403	10,046	11,744	30,289	43,443	43.4
Indonesia	98,990	41,750	27,373	29,177	28,058	28,043	-0.1
Canada	16,227	15,573	16,872	18,241	15,072	7,095	-52.9
China	1,265	977	7,391	18,904	30,813	4,073	-86.8
Vietnam	7	2,637	1,440	0	3,925	3,763	-4.1
Honduras	0	0	0	0	0	1,525	
Peru	0	578	0	427	761	1,325	74.1
Total	165,952	87,001	63,579	80,123	109,902	90,371	-17.8

Feed Survey, global feed production declined 1 percent in 2019, from 1.13 MMT in 2018 to 1.12 MMT in 2019. Feed production in the Asia Pacific region (the largest) declined over 5.5 percent in 2019 due mainly to ASF affecting its swine industries. Production in Europe remained steady at 363,300 MT while production in North America increased 1.6 percent in 2019 totaling 236,000 MT. Feed production in Africa grew 7.5 percent in 2019 compared to 2018.

Total US meat and bone meal/poultry/porcine meal exports were up 15 percent in 2019 from the previous year totaling over 1 MMT. In the last five years, exports in this category have grown 68 percent and have doubled in the last six years. The global expansion of poultry, pet, and aqua feeds have led the demand surge. As fish meal production declines, terrestrial animal protein meals are essential for diets that require an animal protein.

Indonesia was the largest importer of US animal protein meals in 2019 at 404,200 MT, an increase of 17 percent from 2018. China imported 199,700 MT of non-ruminant animal protein meals last year, unchanged from the previous year. Until the trade war, exports of animal proteins to China were growing, but the retaliatory tariffs, along with ASF in China, slowed demand. Going into 2020, with retaliatory tariffs now eliminated and the swine industry rebounding, a resurgence in exports is expected. Exports of animal proteins to Mexico increased 3 percent in 2019 to 115,700 MT. In early 2020, negotiations between US and Mexico authorities were completed that now allow the export of bovine MBM to Mexico. This should spur an increase in exports in 2020.

Total fat exports were 906,600 MT in 2019, up over 8 percent from 2018. Exports of all rendered fats hit a historical low of 697,000 MT in 2015, but have since rebounded mostly due to overseas demand from biodiesel and renewable diesel. In 2019, Singapore became the largest importer of US yellow grease/UCO, totaling 178,800 MT, up 150 percent from

2018. EU was the second largest, importing over 160,800 MT of UCO, down 6.6 percent from the year before. Inedible tallow exports dropped 7.9 percent in 2019 to 301,000 MT, with Mexico being the largest export market followed by Singapore. Biodiesel and renewable diesel demand are now a major part of the export markets for rendered fats: 80 percent of all yellow grease/UCO exports and over 33 percent of all inedible tallow exports are used overseas as a feedstock for renewable fuel production.

Future Looks Bright

On the domestic front, the US rendering industry will see increased production over the next 10 years as livestock production grows, so an increase of animal protein meals of approximately 594,000 MT and additional animal fats of 894,000 MT is projected. Animal protein meal exports to China should strengthen in 2020 as the retaliatory tariffs are now retracted, China is rebuilding its swine sector, and more US plants are now eligible to export due to phase one of the US/China free trade agreement. Exports of animal protein meals to Indonesia should remain strong while the southeast Asia market improves as that region also recovers from ASF.

Strong government support in the renewable fuels sector, specifically low carbon intense feedstocks, will spur increased demand for rendered fats both domestically and overseas. In addition, the US/China trade agreement grants market access for edible tallow and lard to China, a large market, growing exports to that region.

Going into 2020, there is optimism for a rebound in demand for many rendered products due to positive market access successes like the expansion in China, the opening of markets for animal proteins in Taiwan and Mexico, and successful trade negotiations in the multiple agreements now being discussed. Even with the doubling of rendered animal protein exports over the last six years, there is still opportunity to expand internationally; however, COVID-19 may create challenges as the virus continues to spread. **R**

Table 4. US export customers by product, 2014–2019 (metric tons) (continued)

Animal protein meals							
Indonesia	218,855	257,695	333,465	368,823	346,104	404,146	16.8
China	63,174	81,400	138,088	164,515	199,034	199,670	0.3
Mexico	74,874	103,789	99,618	129,371	112,375	115,697	3.0
Vietnam	1,613	8,201	28,383	33,595	53,543	95,760	78.8
Canada	48,690	58,743	64,292	66,422	54,512	49,134	-9.9
Chile	32,026	57,084	18,144	26,963	44,454	41,801	-6.0
Philippines	12,462	10,734	9,203	6,518	23,587	37,118	57.4
Thailand	5,740	5,163	3,480	17,119	18,263	32,198	76.3
Ecuador	7,058	6,496	9,557	8,169	16,827	28,135	67.2
Malaysia	13,300	1,446	3,823	15,300	9,271	12,555	35.4
Honduras	1,100	3,704	10,693	4,102	8,694	7,520	-13.5
Myanmar	0	0	120	1,905	4,872	5,163	6.0
Peru	994	1,019	2,410	5,564	5,809	3,762	-35.2
Guatemala	7,399	1,381	4,130	2,934	915	3,336	264.6
Sri Lanka	0	0	0	1,914	2,456	2,055	-16.3
Cambodia	305	0	0	5,574	2,006	1,647	-17.9
Colombia	1,523	950	459	925	1,204	1,561	29.7
Taiwan	55	0	198	82	0	540	
South Korea	387	141	15	46	74	387	423.0
Total	501,482	619,900	760,367	868,548	906,462	1,042,961	15.1

Source: Global Trade Atlas.