



China: Making Moves to Reduce Food Loss & Waste

**IPPE-International Rendering Symposium
Atlanta, GA
Feb 2, 2024**

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OUTLINE

- ◆ Food Loss vs. Food Waste (FLW) and Roles of Rendering in FLW Reduction
- ◆ USDA-NARA-ASMI Cooperation in Promotion of FLW Reduction in China
- ◆ Review of Chinese Market for Rendered Products and Other Ingredients out of FLW
- ◆ Chinese FLW Reduction

Food Loss and Food Waste

Global Food Loss and Waste (FLW) Adds Up

- Roughly 1/3 of food produced or roughly 1.3 billion tonnes/year (FAO, 2011).
 - Up to 14% between the post-harvest and retail stages (FAO, 2019).
 - Around 17% at the retail, foodservice, and consumer stages (UNEP, 2021).
- Costs \$936 billion each year (WEF)
- Around 8-10% of GHG emissions from human activity including 800 million tons CO₂e annually from food decomposing in landfills (UNEP; FAO, 2015).

About 1/4 of freshwater used by agriculture for crop production/year is associated with FLW (Kummu et al., 2012).

这部分粮食大约是每年13亿吨的数量



Courtesy of Dr. Jean Buzby, USDA Food Loss and Waste Liaison in the U.S. Department of Agriculture's Office of the Chief Economist

Rendering in Prevention or Reduction of Food Loss and Waste (FLW)

- ◆ Edible Rendering
- ◆ Prevention/100% Reduction of Food Loss occurred between post-harvest and retail: Packer Renderers, Independent Renderers Collecting Raw Material from Packing Houses, Blood Processors
- ◆ Reduction of Food Waste occurred post retail and food services: Independent Renderers Collecting Raw Material from Retails and UCO Processors

Federal Programs in Support of Reduction of FLW

- ◆ Emergency Food Assistance Program (TEFAP)
- ◆ Local Agriculture Market Program (LAMP)
- ◆ Compositing and Food Waste Reduction Program (CFWR)
- ◆ Rural Energy for America Program (REAP)
- ◆ Community Food Projects (CFP)
- ◆ Food and Agriculture Service Learning Program (FASLP)
- ◆ Farm Storage Facility Loan Program

1st Food Waste Reduction and Nutrient Recycling Technology Forum

- ◆ USDA-NARA-ASMI Cooperation
- ◆ FLW Impacts (Economical, Ecological and Social)
- ◆ Promotion of Programs and Education
- ◆ Rendering, Blood Processing, Bakery,
- ◆ Dairy, Fishery, Heparin, Insects
- ◆ Exploration of Direct Uses of Food Waste in Animal Feeding

USDA's Campaign on Food Loss and Waste Reduction -Food Waste Reduction and Nutrient Recycling Tech Forum



USDA's Campaign on Food Loss and Waste Reduction -Food Waste Reduction and Nutrient Recycling Tech Forum



USDA's Campaign on Food Loss and Waste Reduction -Food Waste Reduction and Nutrient Recycling Tech Forum



10:37 4G

食物损耗消减与养分回收科技论坛

艾牧私塾 关注 | 个人中心

食物损耗消减与养分回收科技论坛 Food Waste Reduction and Nutrient Recycling Technology Forum

锤磨后的鸡肉粉

互动 排行榜 介绍

07-17 10:27

直播助手 姚光源 - 艾牧 (北京) 农业咨询有...

直播助手 QR

感谢刘总的精彩讲解

直播助手 姚光源 - 艾牧 (北京) 农业咨询有...

下面将由鑫瑞森贸易有限公司总经理李军雁为大家作题为《进口鸡肉粉在动物饲料与宠物食品中的应用》的报告

说点什么吧-

小鹏通提供技术支持

USDA's Campaign on Food Loss and Waste Reduction -Food Waste Reduction and Nutrient Recycling Tech Forum



【解说】7月17日，食物损耗消减与养分回收科技论坛(下称“论坛”)在广州召开。本次论坛是我国首次举办食物损耗消减与资源化利用领域国际化的专业会议，吸引了来自餐厨回收、环保、饲料、宠物食品行业的40余家头部企业高管现场参会。

【解说】浙江大学海洋学院教授王岩



USDA and Cooperators Boost Reduction and Re-utilization of Food Loss and Waste in Asia



USDA and Cooperators Boost Reduction and Re-utilization of Food Loss and Waste in Asia

Published 9:46 PM GMT+8, July 26, 2023

Share

GUANGZHOU, China, July 26, 2023 /PRNewswire/ -- The Food Waste Reduction and Nutrient Recycling Technology Forum was held in Park Hyatt Hotel in Guangzhou, China on July 17, 2023 to introduce US efforts toward the reduction of food loss and waste (FLW) to interested colleagues in China. In addition, the Forum shared practical success cases in reduction and re-utilization of FLW worldwide. The aim of this forum was to boost reduction of escalating FLW across the globe and potential re-utilization through innovative technologies. USDA's Agricultural Trade Office (ATO) in Guangzhou launched this forum and hopes to hold similar discussions in the future. North American Renderers Association (NARA) and Alaska Seafood Marketing Institute (ASMI) participated in the forum and shared their industrial expertise in processing by-



食物损耗消减与养分回收科技论坛于7月17日圆满召开

新华网北京2023-07-17 22:58 来源于：广东南

食物损耗消减与养分回收科技论坛于今日在广州帕克悦酒店隆重举行，全球食物损耗与浪费达到了惊人的13亿吨，并占据了全球食物总产量的14%和17%。常见的填埋处理加剧了温室气体-甲烷的生产并对全球气候变化产生负面的影响。食物损耗与浪费的消减与资源化利用对于减少全球贫困人口，减少温室气体排放，并减少处理食物废弃物的过程当中对于土地、水、人力、能源的消耗都具有极为重要的意义。本次论坛特邀了多位食物损耗消减与养分回收科技领域的权威专家，介绍了四方发达国家的企业与政府针对食物供应链的生产端至零售端出现的食物损耗以及在零售端和消费者端的出现的食物浪费现象，所采取的措施与资源化利用的先进经验。USDA广州农业贸易处处长JonAnn Flemings与USDA食物损失浪费项目联络人Jean Busby先后介绍了USDA对于食物损耗浪费领域所做的国内供需、科研、外展以及监管指导的工作，以及USDA、EPA、和FDA在食物损耗浪费领域跨区域上的跨部门协作，与企业界共同成立的2000食物损耗浪费减损联盟，并分享了全球多个国家在食物损耗浪费减损领域上的经验和创新。



论坛演讲嘉宾代表合影

Four hundred fourteen media worldwide reported the news on the Forum with average potential audience of 683,468.

食物损耗消减与养分回收科技论坛于7月17日圆满召开

食物损耗消减与养分回收科技论坛于今日在广州柏悦酒店隆重举行。全球食物损耗与浪费达到了惊人的13亿吨。并占据了全球食物总产量的14%和17%。可见的浪费增加了温室气体排放对全球气候变化的影响。减少食物浪费对于减少全球温室气体排放至关重要。减少食物浪费对于减少全球温室气体排放至关重要。减少食物浪费对于减少全球温室气体排放至关重要。



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论坛嘉宾合影留念

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论坛嘉宾合影留念

合影 作者 通讯员 供图

中新网广东新闻7月18日电 (王正 岑柏霞)食物损耗消减与养分回收科技论坛(下称“论坛”)17日在广州举行。该论坛聚焦食物损耗消减与资源化利用领域国际化,吸引了来自餐厨回收、环保、饲料、宠物食品行业的40余家知名企业高管现场参会。

据介绍,论坛介绍了海内外针对食物供应链的生产浪费至零售端出现的食物损耗及浪费现象,多位专家学者分享了食物损耗与浪费的消减措施与资源化利用的先进经验。

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论坛嘉宾合影留念

Main Chinese gateway media's reports on the Forum (ChinaNews, Sina, Sohu, Tencent, Phoenix and Huanqiu)

USDA-NARA FLW Reduction Forum Planned for 2024



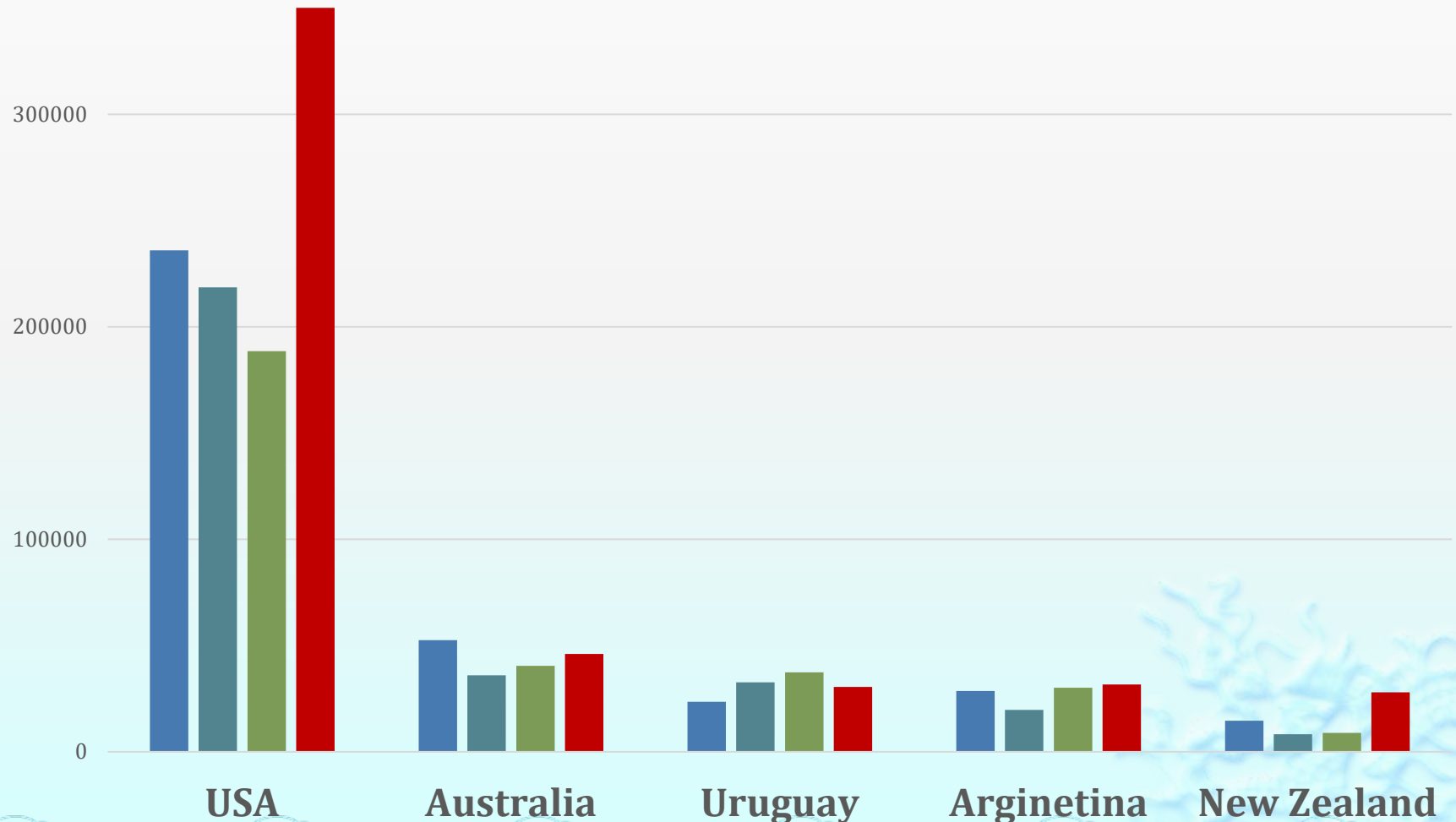
China's Moves of FLW Reduction

- ◆ Global Trade of Rendered Proteins to China
- ◆ China's Feed, Pet Food Industries and Demands for Rendered Proteins World Wide
- ◆ NARA's Education on Agencies, Industries and Pet Parent Communities in China and Service to US Rendering Industry and NARA Members
- ◆ China's Moves on FLW Reduction in China

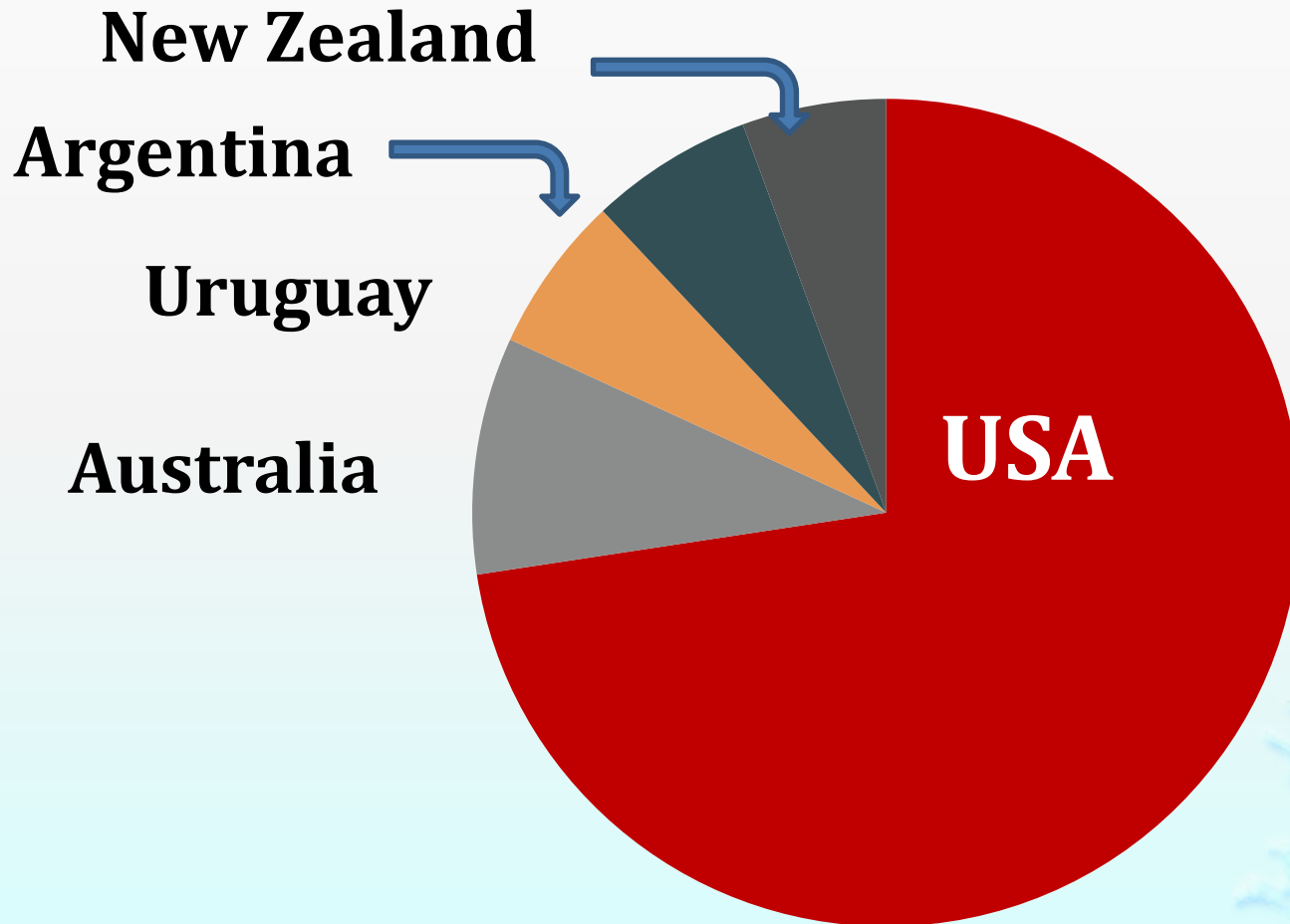
Global Trade of Rendered Proteins to China (2011-2023)

Year	U.S.	Australia	Uruguay	Argentina	NZ	Totals
2011	11117	38392	38733	---	4375	92617
2012	23421	10877	34641	---	7958	76896
2013	54300	12723	33916	---	13940	114879
2014	63155	18499	29742	---	19782	131178
2015	80610	38020	41087	---	19032	178749
2016	138043	15975	51344	9010	9611	223983
2017	164515	33166	45643	11025	11684	266033
2018	199034	57104	41367	16119	23457	337801
2019	199671	62046	33764	24390	18532	338403
2020	235911	52589	23475	28566	14695	355236
2021	218508	36026	32734	19732	8211	315212
2022	188544	40501	37423	30121	8928	305517
2023	361046	46055	30507	31671	27990	497269

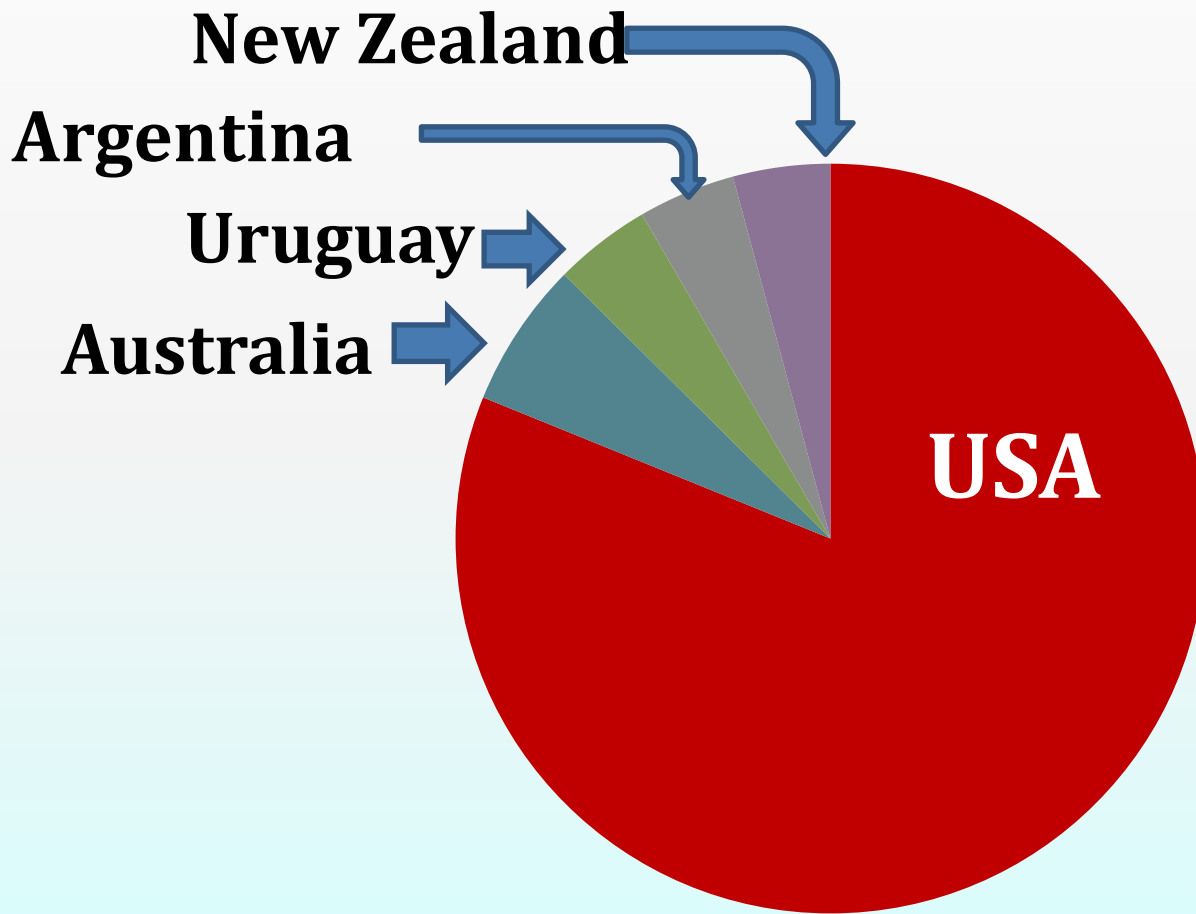
Global Trade of Rendered Proteins to China in 2023



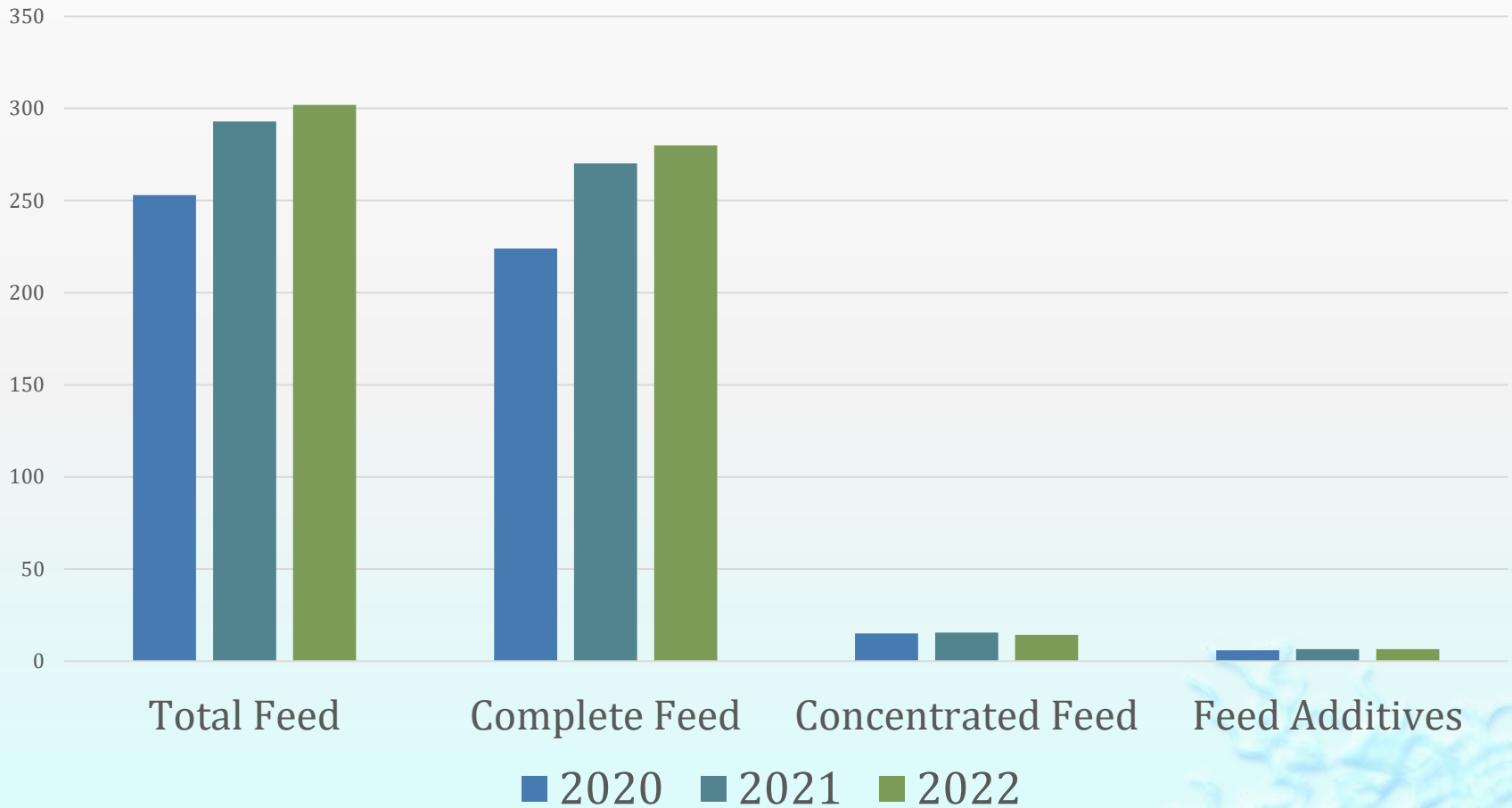
China's Market Share of Import of Rendered Proteins by Volume



China's Market Share of Import of Rendered Proteins by Value

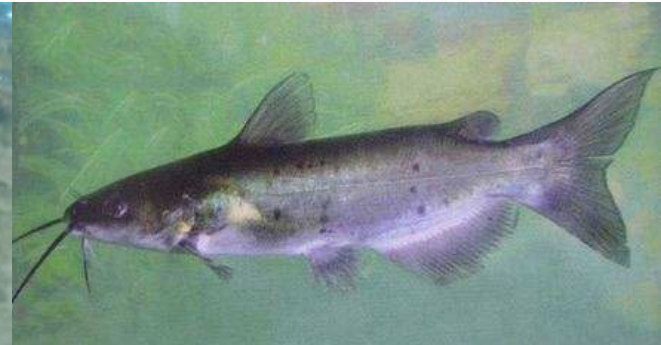


Chinese Feed Production (MMT)

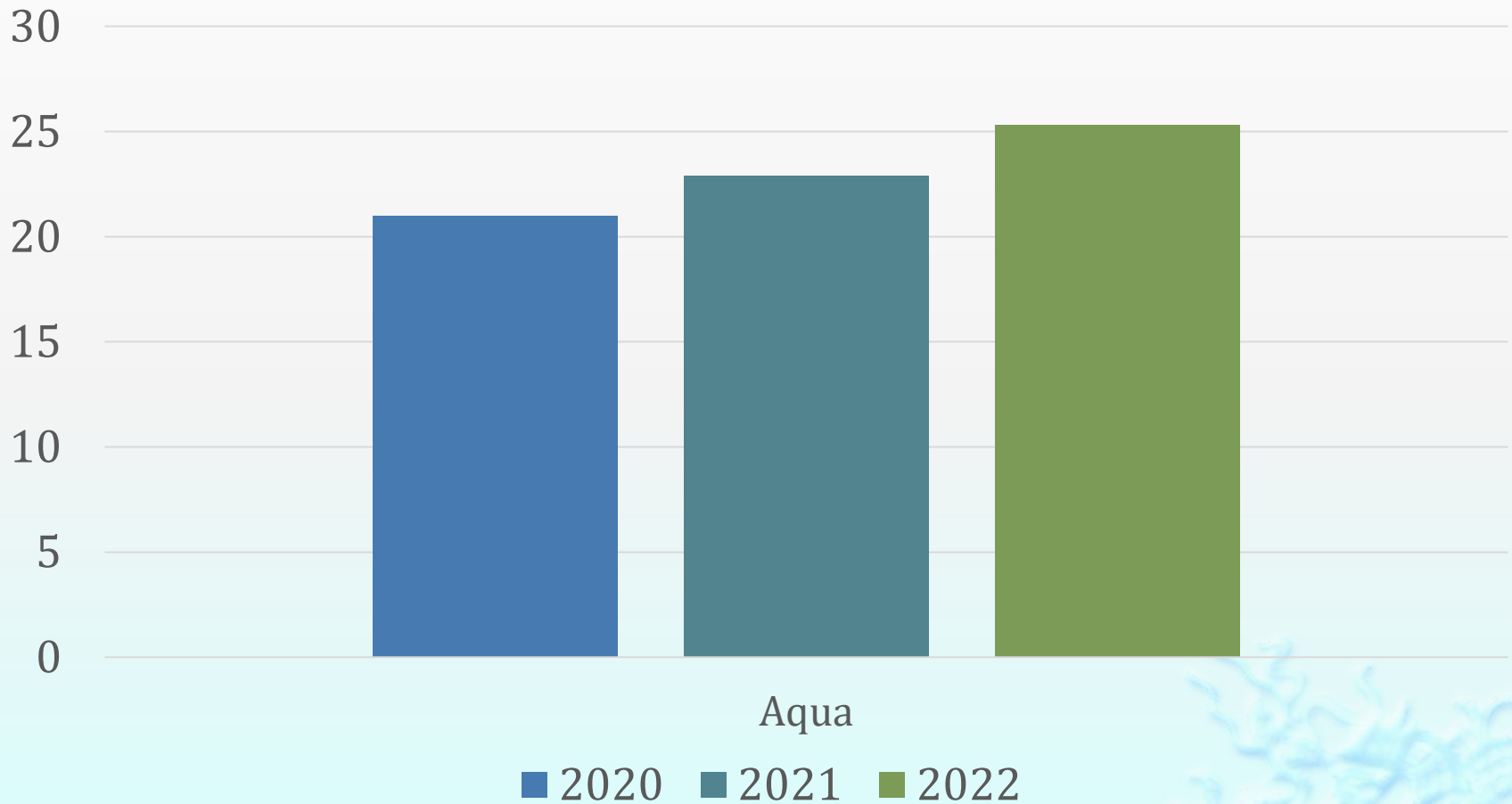


No. 1 Feed Production in the world

Evolution of Chinese People Eating Habits and Demand of Animal Proteins by Aquaculture



China's Aquafeed Production (MMT)



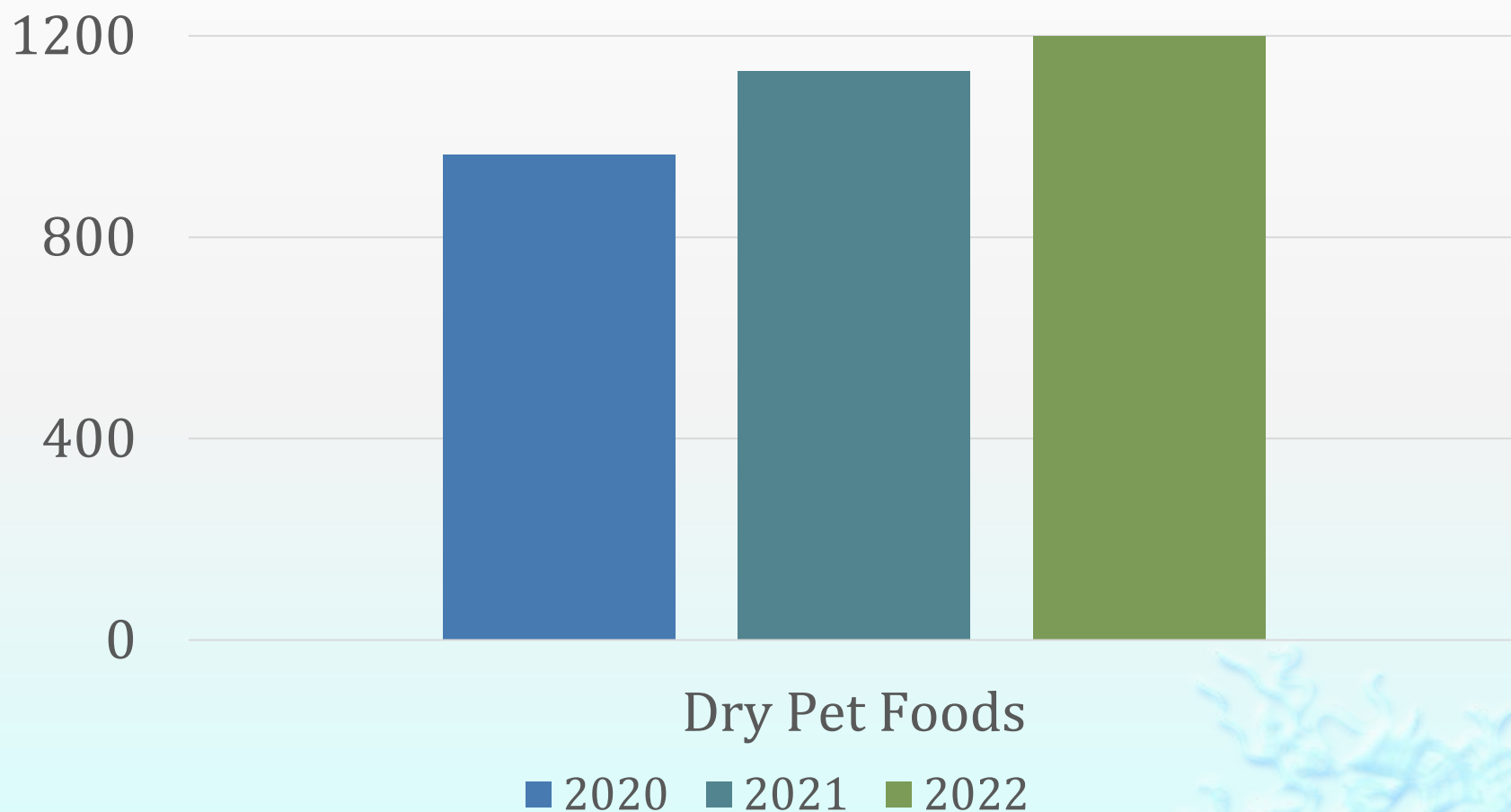
No. 1 Aquafeed Production in the world

Evolution of Chinese People Life Style and Demand of Animal Proteins by Pet Food Industry

- ◆ Strong economy and improved household income
- ◆ Urbanization and high price of real estates
- ◆ Birth control program since late 70's
- ◆ Strong demand for companionship and companion animals
- ◆ Regulations on pet food import
- ◆ Continued growth in pet food production in China (1.4 MMT)



Chinese Pet Food Production (TMT)





- ◆ NARA's Education on Agencies, Industries and Pet Parent Communities in China and Service to US Rendering Industry and NARA Members





NARA's Achievements

- ◆ Maintenance of Non-Ruminant Trade Protocol in Past 2 Decades
- ◆ Trade Protocols Established in 2015 for AI Occurrences
- ◆ Registration in Ministry of Agriculture and Rural Affairs
- ◆ Establishment of China's PBM Standards and Grading

The 4th
China
International
Companion
Animal Food
Ingredients
Conference
(CAFIC
2023)



NARA's Promotion on Pet Food Brand Holders



A+ Aquafeed Technology Forum on March 12, 2023

首届 A+ 水产饲料高峰论坛



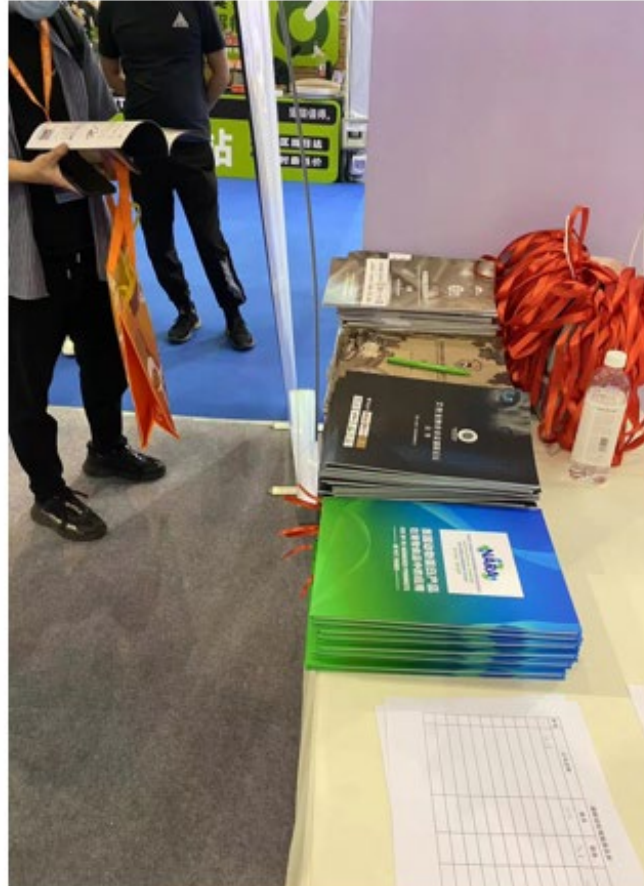
NARA
NORTH AMERICAN RENDERERS ASSOCIATION
Reclaiming Resources, Sustainably

优秀北美动物蛋白油脂生产企业的联盟

APC BHT Cargill DARLING Farmers Union Industries
G.A. WINTZER & SON CO. Holmes & Narver JBS MANITOWOC Marfrig
National Beef Sanimax Smithfield Tyson VALLEY INDUSTRIAL INC. WEST COAST

第七届国际饲料加工与质量安全
技术研讨会-后天南京见

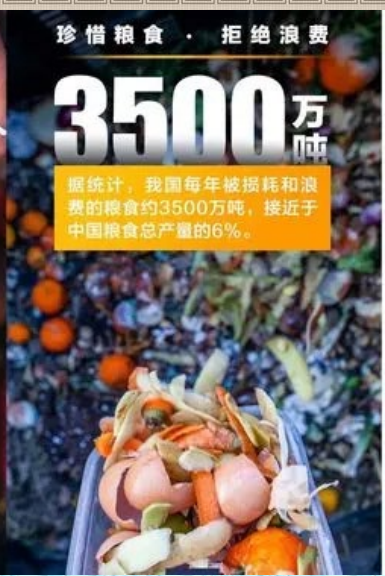
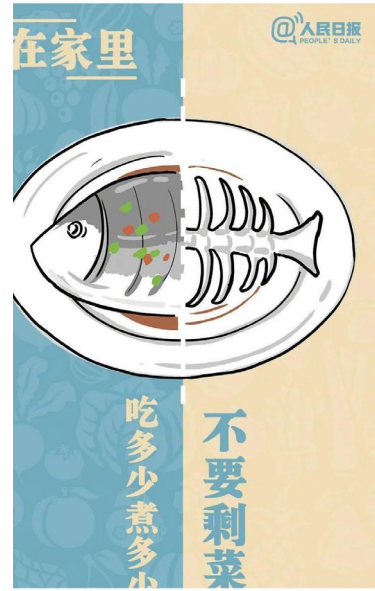




NARA's Promotion on
 Pet Food Distributors,
 Channels and Pet
 Owners
 Feline-Eye Epicure
 Forum

China's Moves on FLW Reduction in China

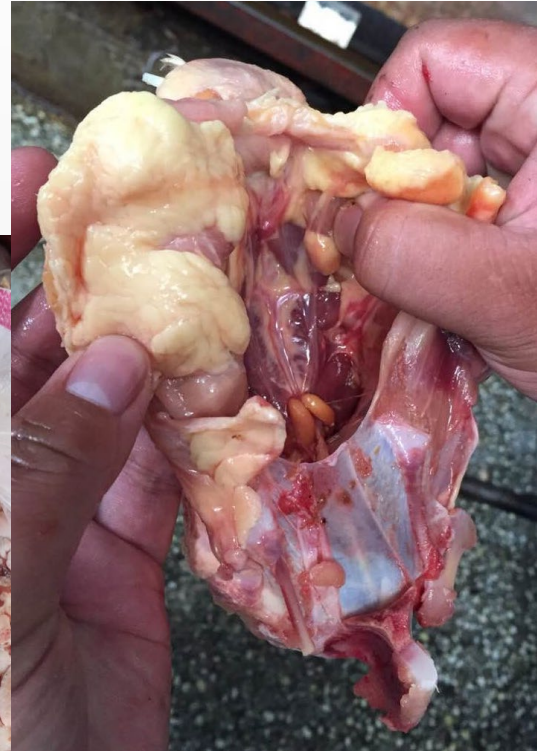
- ◆ Education of People and Societies
- ◆ Status of Chinese Local Rendering
- ◆ China's Insect Farming



Offal from Chinese Meat Industry -For Human Foods



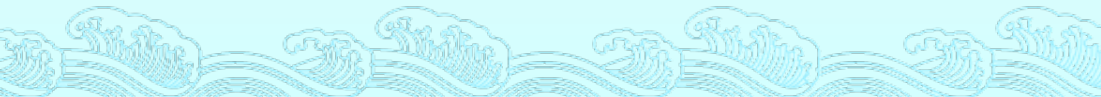
Offal from Chinese Meat Industry -For Meat Meal Production



Local Meat Meal Production-”Double Cooking”



Local Meat Meal Production -Cooking



Local Meat Meal Production

-1st Press



Local Meat Meal Production

-Meat Cake for Collection and Further Processing



Local Meat Meal Production

-2nd Processing



Local Meat Meal Production

-2nd Press and Grind



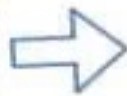
Raw Material



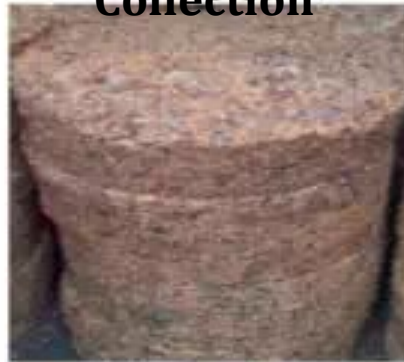
Cook



Hot Oil (220-240°C)
for 4-6h



Meat Cake for
Collection



1st Press



Fat-
Extra
ction
and
2nd
Press

Crax



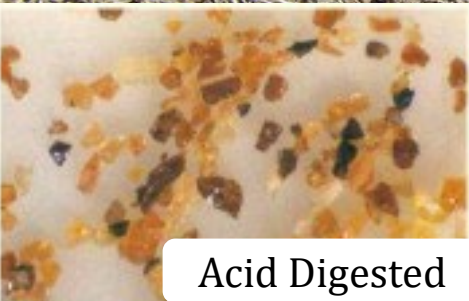
Grind



Finished Products

Local Meat Meal Production

By-Products from Chinese Meat Industry -For Feather Meal



Acid Digested



"Fleather" Meal



Ground Raw Feather



Ground Raw Feather



膨化羽毛粉 (20X)

Extruded Feather Meal



膨化羽毛粉 (400X)

Extruded Feather Meal



酶解羽毛粉

Enzyme Digested



酶解羽毛粉

Enzyme Digested

显微镜检

By-Products from Chinese Meat Industry -For Blood Meal and Plasma



Differences

	US Made	Locally Made
Cooking	Controlled Thermal Treatment in Super Cooker	Water or Fats Boiled Double Cooking
Scale	Large Scale (10 TMT min.)	Household mainly, evolving.....
Bio-safety and prevention of contamination	In compliance with OIE guideline	TBD
Residual program	Monitoring Veterinary Medicine, antibiotics Residual	Lack
Environmental Monitor program	Monitor polyexthene, PCBs, dioxins etc.	Lack
Stability Test	OSI applies	Lack

Differences (Continued)

	US Made	Locally Made
Bioavailability	High	Varied
Freshness	High	Varied
Association	Cover 95% of rendering capacity	Does not exist
APPI/Code of Practice	Well Implemented	Does not exist
FSMA	Implemented	Does not exist
WRO	Member	Non-member
Volume	4.6 MMT Animal Protein 5.7 MMT Animal Fats including UCO	600,000 MT Estimated

Chinese Insect Farming as a Solution of FLW and Direct Feeding of FLW

