US Market Report

Fat usage up but protein demand down

By Kent Swisher, National Renderers Association

Regardless of an individual's political leanings, one of the biggest events in the United States (US) last year was the inauguration of President Donald Trump on January 20, 2017. He brought an "America first" theme to the White House. On the trade front, one of his first actions was to pull the country out of the Trans Pacific Partnership, a trade agreement that was aimed at helping America compete with China. By May, US Trade Representative Robert Lighthizer notified Congress that Trump intended to renegotiate the North American Free Trade Agreement, or NAFTA. These negotiations began later in the year and continued through early 2018.

The new administration also committed to the enforcement of trade laws and agreements. In 2017, the US Department of Commerce increased its antidumping and countervailing duty investigations by over 50 percent. One of these investigations focused on Argentine and Indonesian biodiesel imports. In 2016 and 2017, imports of biodiesel into the United States were 40 percent of total domestic consumption; however, countervailing duties put in place in the fall of 2017 stopped imports of biodiesel from Argentina and Indonesia. While Indonesia imports were not substantial, Argentina accounted for over two-thirds of all US biodiesel imports. This action should give relief to US biodiesel producers in 2018.

The "all-vegetarian" diet trend in poultry production continued in 2017. Some experts report that over 25 percent of broiler operations now feed an all-vegetarian diet, a trend that has made the export market even more important for US animal proteins. Exports of meat and bone meal, poultry meal, and porcine meal have risen 87 percent since 2012 but that still has not been enough to support the downward trend in prices due to the drop in domestic demand.

The International Monetary Fund (IMF) estimates the world's economic growth rate increased from 3.2 percent in 2016 to 3.7 percent in 2017 led mainly by the strength in advanced economies. Output in these economies increased from 1.7 percent in 2016 to 2.3 percent last year. The IMF forecasts global growth to be 3.9 percent in 2018 and 2019.

Domestic Developments

Raw Material Supply Increases

US cattle slaughter in 2017 was 32.2 million head, up more than 5 percent from 2016, showing a strong upswing in the cattle cycle that began in 2016. Average live weight dropped slightly from 1,363 pounds in 2016 to 1,348 pounds last year. Swine and poultry production continue to surge as well. Hog slaughter was approximately 121.3 million head, up almost 3 percent over 2016, with live weight remaining unchanged at 282 pounds. Broiler and mature chicken production grew by nearly 2 percent in 2017, totaling over 9 billion birds slaughtered while live weight increased from 6.16 to 6.20 pounds, continuing an upward trend of heavier birds.

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 but it was discontinued in July 2011 after government cutbacks. Hence, in industry market reports after 2011, the data in table 2 was derived by the National Renderers Association using historic relationships between livestock production as reported by the National Agricultural Statistics Service (NASS) and historic rendered product production. However, in May 2015, NASS statisticians began surveying and publishing monthly rendered product production so 2016 was the first full year this data was available. Therefore, 2016 and 2017 production in table 2 is data from the NASS *Fats and Oils: Oilseed Crushings, Production, Consumption, and Stocks Annual Summary* publication that is released each March.

The 2012-2015 data in table 2 has been revised from previous reports published in *Render* 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 2017 is NASS data but prior to 2016 it was calculated using the relationship between yellow grease production numbers in the 2010 report *A Profile of the North American Rendering Industry* by Informa Economics and cooking oil consumption as reported by the US Department of Agriculture (USDA). Unfortunately, the NASS publication does not include consumption so data for rendered 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 by subtracting production estimates from export estimates and biodiesel use.

The increase in livestock slaughter in 2017 was reflected in overall increases in rendered product production to 10.5 million metric tons, up 1.4 percent from 2016. Over the last 5 years, total rendered product production has increased 4 percent with animal proteins rising 6 percent and fat up 2 percent.

In 2017, fat production was 5.7 million metric tons, up a slight 0.2 percent from 2016. Overall tallow production rose 1.4 percent to 2.6 million metric tons. Inedible tallow production increased to almost 1.7 million metric tons, up 4.8 percent over 2016. Technical tallow production was down 7.3 percent and edible tallow production remained unchanged at around 410,000 metric tons. Even though hog slaughter was up in 2017, white grease production was down 4.7 percent to 751,000 metric tons, lard production dropped 5.4 percent to 158,000 metric tons, and choice white grease production declined 4.5 percent to 592,000 metric tons. Yellow grease/used cooking oil production was 913,000 metric tons, down slightly from 2016. The other grease category was up nearly 10 percent in 2017 at 369,000 metric tons.

Animal protein meal production was close to 4.8 million metric tons in 2017, up nearly 3 percent over 2016. Meat and bone meal production was up about 3 percent at 2.8 million metric tons, poultry by-product meal rose 4 percent to 1.4 million metric tons, and feather meal was down 1 percent to 522,000 metric tons.

This is the first year imports of rendered products into the United States are included in table 2. While these imports have not been uncommon in the past due to intra North American trade and lamb meal imports for pet food production, recent increases of fat imports are due to US biodiesel and renewable diesel demand. In 2017, overall imports of fat were 167,500 metric tons, up 28 percent from 2016, with imports of fat into the United States increasing more than 73 percent over the past 5 years. Animal protein meal imports were 84,300 metric tons in 2017, up 1.8 percent. As mentioned previously, these imports were mainly lamb meal from Australia and New Zealand that are used by the US pet food industry.

Demand for Fats Up, Proteins Down

As mentioned earlier in this report, NASS does not include domestic consumption in its monthly surveys. Therefore, domestic consumption in table 2 is derived by adding production plus imports and then subtracting biodiesel/renewable diesel inputs, as reported by EIA, and subtracting exports as reported by the Global Trade Atlas. Table 2 does not account for any carryover stocks.

Domestic consumption of rendered products was up 2 percent in 2017 to 7.1 million metric tons. Over the past 5 years, domestic consumption has grown by 5 percent mainly due to increased fat use in the biodiesel/renewable fuel sector. In 2017, total rendered fat use in the United States for non-biodiesel/renewable fuel was slightly off showing a 1.4 percent decline from 2016 at 3.6 million metric tons. Over the last 5 years, domestic consumption of the same category was stable except for an increase of 1.5 percent in 2016. Domestic fat use for biodiesel/renewable diesel production continued to grow in 2017, reaching 1.2 million metric tons, a 4.3 percent increase from 2016 and a 33 percent increase over the last 5 years.

Domestic consumption of animal protein meals in 2017 tells a different story, which was virtually unchanged from 2016 at 3.8 million metric tons. Over the last 5 years, domestic use has dropped by over 143,000 metric tons, or roughly 4 percent. This decline in domestic consumption is mainly due to the all-vegetarian diet trend in the broiler industry. As reported earlier, between 25 and 30 percent of broiler operations now use all-vegetarian diets. This drop in demand occurred at the same time domestic production was increasing. Over the last 5 years, the total supply (production plus imports) of animal protein meals grew by 270,000 metric tons, about 6 percent. Hence, the supply/demand scenario for protein meals in the United States is critically off balance and shows the crucial need to grow new markets for animal protein meals.

Overall rendered product exports in 2017 were approximately 1.7 million metric tons, up 5.3 percent from

Continued on page 13

Table 1. Average annual prices of select rendered products, 2012-2017 (per metric ton)

Product (Location)	2012	2013	2014	2015	2016	2017	% Change 16/17
Fats							
Beef tallow, packer (Chicago)	$963	$887	$801	$581	$638	$682	7
Choice white grease (Missouri River)	$926	$846	$711	$498	$537	$549	2
Edible tallow (Chicago)	$1,068	$946	$865	$638	$714	$762	7
Edible tallow (Gulf)	$1,034	$966	$803	$563	$746	$731	-2
Lard (Chicago)	$1,279	$1,081	$959	$670	$708	$729	3
Poultry fat (Mid-South)	$864	$793	$660	$502	$546	$605	11
Yellow grease (Missouri River)	$788	$727	$612	$462	$505	$524	4
Protein meals							
Blood meal, porcine (Midwest)	$1,214	$1,308	$1,643	$1,086	$899	$968	8
Blood meal, ruminant (Missouri River)	$1,122	$1,232	$1,580	$1,070	$857	$931	9
Feather meal (Mid-South)	$715	$701	$772	$521	$391	$437	12
Meat and bone meal, porcine (Missouri River)	$552	$527	$556	$377	$314	$314	0
Meat and bone meal, ruminant (Missouri River)	$473	$464	$502	$359	$294	$273	-7
Poultry by-product meal, 57% protein (Mid-South)	$594	$582	$610	$447	$330	$306	-7
Poultry by-product meal, 67% protein (Mid-South)	$919	$821	$871	$602	$614	$688	12

Source: The Jacobsen.

Table 2. US production, import, consumption, and export of rendered products, 2012-2017 (000 metric tons)

Category	2012	2013	2014	2015	2016	2017	% Change 16/17
Production							
Tallow	2,608.7	2,589.3	2,441.4	2,385.7	2,559.5	2,594.9	1.4
Inedible tallow	1,643.4	1,631.2	1,538.0	1,502.9	1,587.4	1,663.8	4.8
Technical tallow	547.9	543.9	512.8	501.1	562.5	521.5	-7.3
Edible tallow	417.4	414.3	390.6	381.7	409.6	409.6	0.0
Poultry fat	1,025.2	1,040.2	1,056.5	1,088.8	1,113.3	1,095.3	-1.6
Yellow grease/used cooking oil	885.9	896.4	933.2	926.4	916.4	913.0	-0.4
White grease	720.0	718.0	707.3	758.7	787.6	750.5	-4.7
Choice white grease	569.2	567.6	559.2	599.8	620.3	592.3	-4.5
Lard	150.8	150.4	148.1	158.9	167.3	158.2	-5.4
Other greases	348.6	346.7	333.9	341.7	336.0	369.2	9.9
Subtotal	5,588.4	5,590.6	5,472.3	5,501.3	5,712.8	5,722.9	0.2
Meat and bone meal	2,643.8	2,629.9	2,532.4	2,591.8	2,711.5	2,790.2	2.9
Poultry by-product meal	1,345.9	1,365.6	1,387.1	1,429.4	1,382.1	1,438.8	4.1
Feather meal	505.3	512.7	520.7	536.6	527.2	522.0	-1.0
Subtotal	4,495.0	4,508.2	4,440.2	4,557.9	4,620.8	4,751.0	2.8
Total production	**10,083.4**	**10,098.8**	**9,912.4**	**10,059.2**	**10,333.6**	**10,473.9**	**1.4**
Imports							
Tallow	62.6	59.5	62.6	64.0	78.9	99.9	26.6
Yellow grease/used cooking oil	16.1	20.6	17.2	22.4	23.0	38.7	68.2
White grease	17.7	21.8	20.8	34.4	28.8	27.0	-6.3
Choice white grease	11.2	15.3	13.5	28.0	24.1	21.2	-12.1
Lard	6.5	6.4	7.3	6.5	4.7	5.8	23.3
Poultry fat	0.5	0.4	0.4	0.6	0.6	1.9	238.4
Subtotal	96.9	102.2	101.0	121.4	131.3	167.5	27.6
Meat and bone/poultry/porcine meal	70.4	73.8	69.6	64.1	82.2	83.6	1.7
Feather meal	0.5	1.0	0.4	0.2	0.6	0.7	11.1
Subtotal	70.9	74.7	70.0	64.3	82.8	84.3	1.8
Total imports	**167.7**	**177.0**	**171.0**	**185.7**	**214.1**	**251.8**	**17.6**
Consumption							
Feed, food, fatty acids, carryover, other	3,538.3	3,522.1	3,474.9	3,462.9	3,641.7	3,592.5	-1.4
Tallow	1,934.5	1,990.3	1,899.6	1,846.8	2,084.4	2,116.1	1.5
Poultry fat	931.4	952.6	959.0	983.7	999.4	1,000.9	0.2
White grease	526.4	498.5	492.5	505.9	534.8	491.4	-8.1
Yellow grease*	146.0	80.6	123.7	126.5	23.1	-16.0	-169.1
Biodiesel and renewable fuel	896.3	1,116.7	1,051.8	1,201.1	1,142.6	1,192.1	4.3
Animal fat	461.3	500.7	468.5	576.5	512.6	524.9	2.4
White grease	185.1	211.4	213.6	267.2	262.2	268.1	2.3
Tallow	174.6	205.0	161.0	195.0	150.6	176.5	17.2
Poultry fat	79.8	73.0	79.8	89.4	99.8	80.3	-19.5
Other	21.8	11.3	14.1	24.9	n/a	n/a	
Recycled oils	435.0	616.0	583.3	624.6	630.0	667.2	5.9
Yellow grease/used cooking oil	303.9	475.4	493.5	569.3	630.0	667.2	5.9
Other	131.1	140.6	89.8	55.3	n/a	n/a	
Subtotal	2,830.8	3,107.1	2,951.4	3,047.9	3,227.0	3,308.2	2.5
Meat and bone/poultry/porcine meal	3,515.8	3,415.4	3,414.7	3,399.4	3,331.2	3,344.4	0.4
Feather meal	413.6	334.8	355.1	449.8	464.2	442.1	-4.7
Subtotal	3,929.4	3,750.3	3,769.8	3,849.2	3,729.0	3,786.5	1.5
Total consumption	**6,760.2**	**6,857.3**	**6,721.3**	**6,897.1**	**6,956.0**	**7,094.7**	**2.0**
Exports							
Inedible tallow/technical tallow	486.7	382.3	402.5	343.1	283.3	324.5	14.6
Yellow grease	452.1	361.0	333.1	253.0	286.2	300.5	5.0
Edible tallow	75.4	71.1	40.8	64.8	120.1	77.7	-35.3
Lard	24.8	29.4	21.4	19.8	19.1	17.2	-9.8
Poultry fat	14.5	14.9	18.2	16.4	14.7	16.1	9.0
Choice white grease	1.4	0.5	0.6	0.2	0.4	0.8	113.1
Subtotal	1,055.0	859.2	816.7	697.2	723.8	736.7	1.8
Meat and bone/poultry/porcine meal	473.9	580.1	504.7	621.9	762.5	884.6	16.0
Feather meal	92.2	178.8	166.0	87.0	63.6	80.6	26.7
Subtotal	566.1	758.9	670.7	708.9	891.8	965.2	8.2
Total exports	**1,621.1**	**1,618.1**	**1,487.3**	**1,406.1**	**1,615.6**	**1,701.8**	**5.3**

Sources: Global Trade Atlas for exports, US Energy Information Agency for biodiesel inputs, and NASS *Fats and Oils: Oilseed Crushings, Production, Consumption, and Stocks Annual Summary* for 2017 production.
Notes: n/a = not available; *2017 domestic use is negative due to carryover from previous year.

2016 and up approximately 5 percent over the last 5 years. Of that amount, 965,000 metric tons were protein meals and 737,000 metric tons were fat. This export growth was carried by a dramatic increase in protein meals while being offset by a substantial decrease in fat exports. Over the last 5 years, rendered protein meal exports grew 70 percent by approximately 400,000 metric tons while rendered fat exports decreased 30 percent or close to 320,000 metric tons.

Outlook Mixed

As the US cattle cycle rebounds and poultry and pork production continues to increase, there will be a greater supply of rendered products on the market. According to the USDA *Agricultural Projections to 2027,* over the next 10 years, beef production is forecast to grow by 15 percent, pork production by 13 percent, and poultry production by 10 percent. Using these forecasts, it is projected animal protein meals will increase over 474,000 metric tons and approximately 812,000 metric tons of additional fat will be produced.

On the demand side, if the all-vegetarian diet trend continues, use of rendered protein meals and fats in livestock feed will continue to decline so the need for new markets for animal protein meals will be critical. With regard to fat, demand from the US biodiesel industry should increase partly due to the absence of Argentine biodiesel imports. In addition, demand from the renewable energy sector is projected to grow dramatically. In particular, Diamond Green is nearly doubling production at its renewable diesel plant in Norco, Louisiana, from 150 million gallons per year to 275 million gallons, increasing its raw material need from approximately 500,000 metric tons to over 1 million metric tons. This plant expansion is projected to be finished by the second quarter of 2018. In addition, Diamond Green will begin a feasibility study to further expand the plant to 550 million gallons, which would increase its need for raw materials to over 2 million metric tons. Therefore, the 10-year projected growth in rendered fat production should be absorbed by increased demand from the renewable fuel sector. However, the projected rise in rendered protein meal production will need to be offset by expanding existing markets and finding new markets for these products.

International Market Conditions

Protein Meal Exports Surge

Global demand for animal protein meals continued to grow dramatically in 2017 coming from the livestock feed, aquatic feed, and pet food sectors. According to the *2018 Alltech Global Feed Survey*, global feed production set a new record in 2016 by growing to over 1 billion metric tons and in 2017, global production increased by 2.6 percent to nearly 1.1 billion metric tons. The largest feed producer in the world is China, followed by the United States and Brazil. China is also the largest importer of feed ingredients in the world. In 2017, China produced 186.9 million metric tons of feed, down 0.5 percent from 2016. The United States produced 173 million metric tons of feed in 2017, up nearly 2 percent from the previous year, while Brazil produced 69.9 million metric tons of feed, up over 1 percent.

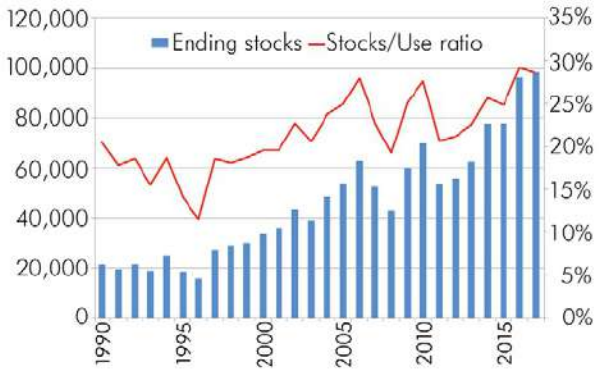
Total US meat and bone/poultry/porcine meal exports were up 16 percent in 2017 from the previous year, and have grown 87 percent in the last 5 years. The global expansion of poultry, pet, and aqua feeds have led the demand surge. Fish meal production has continued to decline so in diets that demand an animal protein, terrestrial animal protein meals are essential. Indonesia was the largest importer of US animal protein meals in 2017, taking 370,000 metric tons, up 11 percent over 2016. China imported 165,000 metric tons of non-ruminant animal protein meals last year, up 20 percent from 2016 and up over 600 percent in the last 5 years. Exports of non-ruminant meals to Mexico reached a record 130,000 metric tons in 2017, up 20 percent from 2016, mostly due to the porcine meal price dropping well below the price of soybean meal during several months last year.

Fat Exports Declining

Total rendered fat exports were 736,700 metric tons in 2017, up slightly from 2016. Over the last 5 years, fat exports have declined 30 percent. Inedible tallow exports to Mexico,

Continued on page 15

Chart 1. World soybean stocks, 1990-2017 (thousand metric tons)



Source: USDA/Foreign Agricultural Service.

Table 3. US annual livestock and poultry slaughter, 2012-2017 (thousand head)

Species	2012	2013	2014	2015	2016	2017	% Change 16/17
Broilers/Mature chickens	8,576,195	8,648,756	8,669,628	8,822,692	8,908,986	9,050,716	1.6
Cattle	32,951	32,462	30,266	28,843	30,578	32,175	5.2
Hogs	113,163	112,077	106,958	115,512	118,220	121,308	2.6
Turkeys	250,192	239,404	236,617	232,389	243,255	241,617	-0.7

Source: NASS.

Table 4. US export customers by product, 2012-2017 (in metric tons)

Product/Country	2012	2013	2014	2015	2016	2017	% Change 16/17
Inedible tallow							
Mexico	271,378	238,079	235,843	227,876	145,636	126,544	-13.1
Singapore	5,000	0	5,000	14,275	46,312	119,240	157.5
Canada	12,772	14,841	18,493	20,797	22,600	20,000	-11.5
Guatemala	19,117	13,332	21,470	20,449	20,094	15,249	-24.1
Venezuela	18,589	18,799	3,800	0	0	7,500	
Nigeria	0	0	0	0	0	7,500	
Turkey	79,495	45,871	59,474	20,898	19,249	7,200	-62.6
Morocco	10,501	5,000	9,000	7,000	7,198	6,450	-10.4
Honduras	24,597	14,097	11,499	9,000	8,240	5,641	-31.5
Dominican Republic	2,000	2,499	3,000	3,500	4,550	2,750	-39.6
Haiti	1,750	4,519	8,348	917	275	2,000	627.3
Colombia	7,199	3,899	6,100	8,000	0	1,856	
El Salvador	4,699	4,199	3,750	2,900	3,000	1,200	-60.0
Nicaragua	7,749	3,199	4,325	3,700	3,550	1,200	-66.2
Trinidad and Tobago	122	179	264	205	78	159	103.8
Total	**486,735**	**382,263**	**402,548**	**343,115**	**283,280**	**324,505**	**14.6**
Yellow grease (includes used cooking oil)							
European Union-28	154,095	147,289	153,813	128,128	185,000	176,348	-4.7
Mexico	113,534	95,892	95,574	72,564	50,034	63,454	26.8
Bosnia and Herzegovina	520	1,567	499	3,883	11,045	24,407	121.0
Dominican Republic	17,629	18,082	15,518	9,585	10,639	9,652	-9.3
Singapore	1,656	2,593	2,675	1,755	1,541	7,900	412.7
Canada	15,604	11,533	10,604	11,716	9,073	7,725	-14.9
Honduras	6,920	3,605	5,890	7,057	6,939	2,167	-68.8
China	572	144	276	965	1,796	1,952	8.7
Jamaica	4,802	6,991	7,300	1,310	1,568	1,211	-22.8
Colombia	584	388	439	593	1846	805	-56.4
Guatemala	7,611	3,799	7,125	6,066	651	618	-5.1
Ecuador	25	99	373	48	301	554	84.1
Nicaragua	2,449	1,052	1,932	712	187	543	190.4
South Korea	385	502	552	961	1,350	307	-77.3
Brazil	236	278	189	252	272	289	6.3
Total	**452,067**	**361,031**	**333,133**	**252,959**	**286,226**	**300,474**	**5.0**
Edible tallow							
Mexico	70,205	66,278	35,840	61,076	114,154	72,120	-36.8
Canada	5,163	4,870	4,807	3,657	5,706	5,552	-2.7
United Kingdom	0	0	0	0	0	4	
Total	**75,399**	**71,148**	**40,783**	**64,762**	**120,146**	**77,678**	**-35.3**
Lard							
Mexico	23,487	28,299	18,848	17,691	16,924	15,876	-6.2
Canada	598	596	612	393	988	605	-38.8
South Korea	0	19	0	0	0	346	
Total	**24,826**	**29,398**	**21,390**	**19,768**	**19,050**	**17,181**	**-9.8**
Choice white grease							
Mexico	92	33	208	27	67	659	883.6
Dominican Republic	11	0	66	22	3	54	1,700.0
China	27	38	0	58	136	37	-72.8
Total	**1,387**	**491**	**639**	**202**	**374**	**797**	**113.1**
Poultry fat							
Canada	10,667	11,065	13,072	10,943	9,320	10,111	8.5
Mexico	806	854	1,731	2,418	2,139	2,545	19.0
Peru	0	0	0	0	958	1,597	66.7
Guatemala	287	370	458	446	516	567	9.9
Dominican Republic	513	644	577	616	671	443	-34.0
Vietnam	143	160	157	180	188	227	20.7
Total	**14,536**	**14,895**	**18,173**	**16,376**	**14,728**	**16,051**	**9.0**

Market Report *Continued from page 13*

the largest importer, fell by more than 13 percent in 2017 and over 53 percent in the last 5 years. At the same time, Singapore has become the second largest export market for US tallow, importing about 120,000 metric tons for renewable fuel production. The European Union has continued to be the largest US export market for used cooking oil at 176,000 metric tons, or close to 60 percent of total yellow grease exports that go to biodiesel and renewable fuel production in export markets. To put this in perspective, 40 percent of all US rendered fat exports now go to biodiesel and renewable diesel production. The global use of US rendered fat is now mostly for biodiesel and renewable fuel production and for use in the oleochemical industry.

The key for rendered animal protein meals will be to continue to find niche markets like aquaculture and pet food.

Outlook

US rendered product production will continue to expand with increased livestock production. Over the next 10 years, more than 474,000 metric tons of animal protein meals and 811,000 metric tons of rendered fat are projected to be added into the supply chain. As mentioned earlier, the global demand for fat as a biodiesel/renewable energy source will continue to grow and offset the added supply. However, additional international demand will be needed to make up for the increased amount of animal protein meals due to the decreasing demand in the United States from the all-vegetarian diet trend in the poultry industry. Aside from that, the global protein meal market is awash in an oversupply of soybean meal. Global carryover stocks and high stock-to-use ratios for soybeans are at record highs (chart 1) so the key for rendered animal protein meals will be to continue to find niche markets for these products such as the aquaculture and pet food industries. **R**

Kent Swisher, vice president of International Programs at the National Renderers Association, has been reporting on the US rendering market in Render *for the past 14 years. He can be reached by email at kswisher@nationalrenderers.com.*

Table 4. US export customers by product, 2012-2017 (in metric tons), continued

Product/Country	2012	2013	2014	2015	2016	2017	% Change 16/17
Animal protein meals							
Indonesia	197,397	227,122	218,855	257,694	333,465	369,070	10.7
China	23,420	54,483	63,174	81,400	138,088	164,515	19.1
Mexico	99,043	83,474	74,874	103,789	99,618	129,392	29.9
Canada	38,044	43,368	48,690	58,743	64,283	66,287	3.1
Vietnam	2,050	1,780	1,613	8,214	28,392	39,764	40.1
Chile	45,937	59,689	32,026	57,084	18,144	26,963	48.6
Thailand	12,884	14,965	5,743	5,166	3,492	16,904	384.1
Malaysia	2,060	16,902	13,300	1,446	3,842	16,807	337.5
Ecuador	2,620	9,796	10,299	8,470	11,550	15,808	36.9
Philippines	33,035	29,729	12,462	10,734	9,267	6,605	-28.7
Cambodia	206	5,308	305	0	0	5,574	
Peru	680	1,156	994	1,019	2,410	5,564	130.9
Honduras	900	3,406	1,100	3,704	10,693	4,102	-61.6
Germany	0	0	12	0	16,939	3,945	-76.7
Guatemala	1,037	12,595	7,399	1,381	4,130	2,934	-29.0
Sri Lanka	0	0	0	0	0	1,964	
Myanmar	0	0	0	0	120	1,905	1487.5
Panama	659	353	65	62	278	1,760	533.1
Costa Rica	349	781	749	1,176	2,603	1,564	-39.9
Total	**473,929**	**580,107**	**504,726**	**621,889**	**762,455**	**884,563**	**16.0**
Feather meal							
Indonesia	46,929	110,087	98,990	41,750	27,373	29,177	6.6
China	0	183	1,265	977	7,391	19,422	162.8
Canada	17,035	8,961	16,227	15,573	16,889	18,136	7.4
Chile	25,667	52,972	48,135	24,403	10,046	11,744	16.9
Philippines	0	0	0	100	200	800	300.0
Colombia	0	0	0	0	150	726	384.0
Peru	0	0	0	578	0	427	
Total	**92,195**	**178,815**	**165,952**	**87,000**	**63,596**	**80,551**	**26.7**

Source: Global Trade Atlas.

Educating on Food Safety, Pet Food, and Rendering

By Tina Caparella

"Food security is national security," declared United States Department of Agriculture (USDA) Secretary Sonny Perdue as he addressed attendees at the Poultry Market Intelligence Forum at the International Production and Processing Expo (IPPE) in Atlanta, Georgia, in late January. "My goal at USDA is to create an environment where ag businesses can become safe, strong, and proud of what you all do. I think our role as policymakers is to create a fertile environment and a fertile field for you all to do what you do best, that is to innovate, create, and execute in a way that is profitable to you.

"We all know trade is critically important to your industry," Perdue continued. "We all want a fair and modernized free trade agreement. The president wants that too." Perdue, who grew up on a dairy and diversified row crop farm in rural Georgia, is convinced the United States will get a sound-science trade agreement everyone can live with. He complimented poultry producers on their advancement in research and manufacturing, noting that the industry is one of the bright spots in US manufacturing productivity.

"We must depend on sound science, not political science, to make decisions on food safety," Perdue added. He explained the close working relationship USDA has with the Food and Drug Administration, Environmental Protection Agency, Secretary of Interior, and Secretary of Commerce and shared how he is striving to build a strong partnership with the agriculture industry.

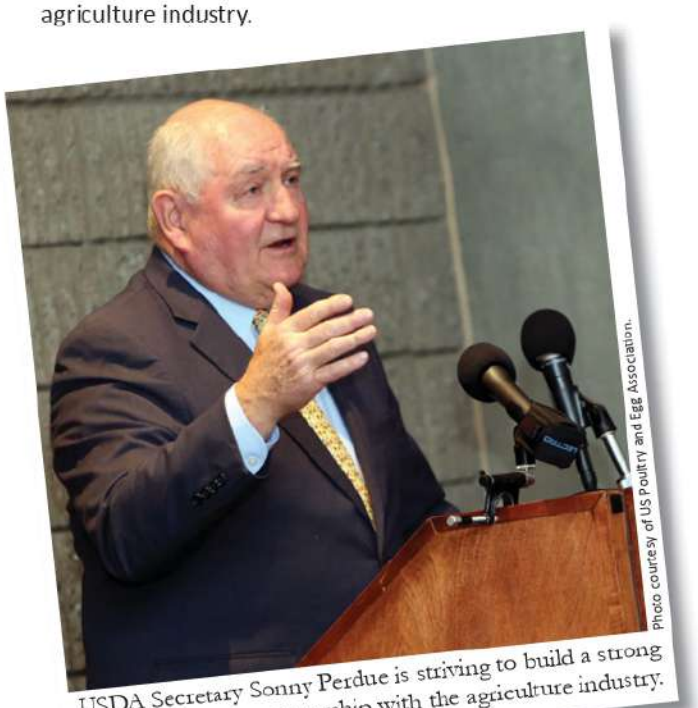


Photo courtesy of US Poultry and Egg Association.

USDA Secretary Sonny Perdue is striving to build a strong partnership with the agriculture industry.

"My goal at USDA is to be the most efficient, most effective, customer-focused agency in the US government," Perdue went on. "We want to treat you as the customer." He said USDA is seeking the industry's input on identifying regulations that are a burden by setting up an interactive regulatory reform task force.

Other speakers at the forum addressed trends and market drivers for the poultry industry in 2017 and moving forward in 2018, such as no antibiotics and a move toward vegetarian diets. Michael Donohue, AgriStats, showed that in June 2011, nearly all broiler producers were using animal proteins and fats in feed rations but by October 2017, only 75 percent were including these nutritional products in feed due to the all-veg diet trend. In addition, fewer by-products are going to rendering as more of the bird is being used by the packer and consumer.

Pet Food Focus

Another educational session at IPPE centered on pet food, which saw $110 billion in global sales in 2017, a growth of about five percent annually over the past five years. Jared Koerten, Euromonitor International, reported that while the United States and Canada continue to be the strongest markets for dog and cat food, Brazil is now the second largest market, up from the sixth place spot in 2012, followed by the United Kingdom in third. He described Blue Buffalo, the fifth largest US pet food manufacturer and the number one brand in 2016 that was just acquired by General Mills for $8 billion, as the poster child for the shift in pet food as consumers are driven by emotion and often seek pet foods produced with similar ingredients as what they eat.

John Stewart, American Feed Industry Association (AFIA), disclosed that projected pet food exports for 2017 are expected to be similar to 2016, which is trending downward due to increased manufacturing overseas. Canada, Japan, and Mexico are the top three export markets for US pet food so the North American Free Trade Agreement (NAFTA) is very important.

"NAFTA is huge to our economy and especially huge to the pet food market and agriculture," Stewart noted. Animal food exports, which are comprised mostly of feed ingredients, to Canada and Mexico have nearly tripled over the past 20-plus years, growing from $764 million in 1994 to $3 billion in 2016. Half of all pet food exports go to Canada and Mexico so the priority is to preserve current trade agreements that enjoy tariff-free market access. Stewart encouraged all to reach out to lawmakers and share why trade is so important to their business.

George Collings, Collings Nutrition Solutions, took conference attendees on a journey through the history of pet food, showing advertisements from the 1940s, 1950s, and 1960s that brought about a revolutionary change in how

An attentive crowd learns about the aspects of rendering.

From left, John Stewart, AFIA, talks pet food with Scott Lehoullier, Peterson Company, and Ken Giesbrecht and Roger Giesbrecht, both of Hogan Farms in Canada.

consumers can help the health of their pet. Ads talked about meat by-products and grains, and were always very positive. Where are we today? Collings showed the overwhelming increase of what used to be 50 to 60 available feed ingredients to what is now nearly 500 today. He also noted how the industry's positive image has become more negative in recent years due in part to social media providing an outlet for anyone to state their opinion of a food or ingredient as fact.

"Pet products have become more about what is not in them rather than what they actually contain," Collings stated. With the humanization of pets, many consumers want to feed their companions the same foods they eat, but many human ingredients are not approved for or necessarily nutritional for pets. Collings urged attendees to use positive messaging when dealing with consumers as negativity fuels more negativity.

Dr. David Meeker, National Renderers Association (NRA), told conference goers that, "this is not your father's rendering industry" as it operates a lot differently than it did just five years ago. Due to government regulation and customer demand, including pet food companies, many rendering plants now have dedicated species lines or facilities to ensure specific products are not comingled. Meeker reiterated the sentiment that negativism is keeping some in the pet food industry from using animal proteins and fats.

"We need to talk about animal by-products as part of helping pet food be sustainable as all of the food-producing animal is being used," he commented.

Rendering's Sustainable Story

Wrapping up the week-long IPPE was the International Rendering Symposium where NRA President Nancy Foster kicked things off with an overview of the $10 billion US and Canadian industry. She declared that "rendering is sustainable and is an essential link in the food and feed chain." AFIA's Leah Wilkinson followed with an explanation of the purpose and activities of the American Association of Feed Control Officials (AAFCO). Animal feed is now termed "food" under the federal Food Safety Modernization Act (FSMA) and any unapproved food additives are considered chemical hazards under FSMA. Wilkinson reported that US states have the authority to set their own regional feed ingredient definitions in addition to adopting AAFCO definitions, and that AAFCO is looking at modernizing the entire pet food label with "friendlier" terminology for pet food ingredients.

"Consumers are not sure what 'by-products' and 'meals' are," Wilkinson said.

Tim Law, Darling Ingredients Inc., stated that today's pet food consumer now considers their dog or cat as family and not a pet. There are roughly 164 million dogs and cats in 85 million US households spending approximately $1,800 per year per dog and $1,100 per year per cat. Globally, adult dog owners post a photo or talk about their dog six times per week on social media while some animals even have their own social media accounts. The top 10 pet influencers on social media – such as Grumpy Cat – reach 68 million people worldwide.

"Consumers want for their pet what they want for themselves," Law shared. According to petfoodindustry.com and a Nielsen study, the top human food trends for the pet food industry in 2018 are:

- full disclosure as consumers demand transparency;
- self-fulfilling practices that include the health benefits of owning a pet and the health benefits of their food;
- a new era of personalized shopping, such as e-commerce and home delivery; and
- an aversion to genetically modified organisms and other bioengineered food ingredients.

"It's not just about the pet anymore, it's about the pet parent," Law concluded.

Mike Rath, also of Darling Ingredients, focused on the federal Renewable Fuel Standard (RFS) and what it means for the rendering industry. Increased compliance costs along with loss of export markets and greater trade barriers for animal fats and proteins has US renderers looking for alternative markets, which is where renewable fuels has stepped in. Signed into law in 2007, the RFS is designed to increase the use of renewable fuels in the US fuel supply to help reduce emissions and create energy independence. Biodiesel and renewable diesel both use animal fats and used cooking oil as feedstocks that have experienced increased domestic usage as the RFS fuel volume obligations have been raised over the years.

Dr. B.J. Bench, Tyson Foods, spoke on oxidation of rendered products, which is the breakdown of organic compounds. He shared that the challenges for the industry are understanding degradation, antioxidants, and laboratory results. Bench and Tyson Foods are leading an initiative with other NRA renderer

Continued on page 18

Education *Continued from page 17*

members and several laboratories, pet food companies, and universities to validate peroxide value fat extraction and testing methods.

"We need standardization through collaboration," Bench commented.

Allyson Jones-Brimmer, Animal Agriculture Alliance, showed ways the industry can adapt to rising social pressures, such as those consumers who are hungry to learn more about where their food comes from. She noted that communication and transparency are important to maintaining customer, community, and consumer confidence, and put a face on animal agriculture and rendering operations in an effort to make emotional connections, such as showing photos of employees, family farms, and products on company websites. Most of all, Jones-Brimmer said the rendering industry needs to tell its sustainability story, including how rendering repurposes and reuses as much of the animal as possible.

"Share how there is more to a cow than milk and steaks, and more to a pig than chops and bacon" using infographics, she remarked, many of which are available on Animal Agriculture Alliance's Facebook page.

NRA's Meeker echoed rendering's sustainable message, adding that sustainable ingredient sourcing for livestock feed or pet food must include rendered products, which are produced safely under regulatory standards. NRA's Dr. Jessica Meisinger highlighted the activities of a newly established Pet Food Alliance that will focus on uniting members of the pet food and rendering industries to address challenges such as:

- oxidation and maintenance of product quality;
- *Salmonella* and other threats to product safety;
- consumer perception; and
- industry sustainability.

Dr. Merlin Lindemann, University of Kentucky, talked about rendered products from a nutritional standpoint. A growing population of over nine billion people worldwide by 2050 will desire more food-producing animals that will need safe feed ingredients. Lindemann noted that animal protein meals are a natural source of digestible amino acids, phosphorous, and metabolizable energy that can help lower diet formulation costs. In addition, including animal proteins in a chicken's diet is keeping with the animal's natural behavior.

Finishing out the rendering symposium with a view on a changing import/export climate was NRA's Kent Swisher, who showed an expected 13 to 14 percent growth in US rendered proteins and fats over the next 10 years based on USDA meat production projections. Swisher explained that historically, a rise in meat production leads to an increased demand for rendered products, yet in the past few years an all vegetarian poultry diet movement has meant less animal protein meals being used domestically thus reducing prices. This resulted in more US proteins being exported in 2016, especially to China, which is a large poultry producer along with Mexico.

"Markets are changing," Swisher commented. "Animal proteins were primarily used domestically and fat was exported. Now that has flipped due to the domestic biofuels industry using tallow, yellow grease, and used cooking oil and poultry's push for all-veg diets." His takeaway message is there is a domestic protein glut that needs a home in the export market. **R**

World Feed Production Stays above 1 Billion Metric Tons

The 2018 Alltech Global Feed Survey estimates that international feed tonnage has exceeded 1 billion metric tons (MT) for the second consecutive year, with a total of 1.07 billion MT produced in 2017. The feed industry, valued at $430 billion, has seen 13 percent growth over the past five years for an average of 2.5 percent per annum.

The seventh edition of the annual survey is the most comprehensive, covering 144 countries and more than 30,000 feed mills. China and the United States remain the top two countries, producing one-third of all animal feed, and that predominant growth came from the pig, broiler, and dairy feed sectors as well as the European and Asia-Pacific regions. The top seven feed-producing countries in 2017, in order of production output importance, were China, the United States, Brazil, Russia, Mexico, India, and Spain. These countries contain approximately 54 percent of the world's feed mills and account for 53 percent of total production.

US Hide, Skin, and Leather Exports Increase in 2017

The United States (US) hide, skin, and leather industry exported more than $2.08 billion in cattle hides, pig skins, and semi-processed leather products in 2017, a $40 million increase over 2016. US hides and skins companies – including producers, processors, brokers, and dealers – regularly export more than 90 percent of total US production of these products and are one of the top raw material suppliers to the global leather manufacturing industry.

According to US Department of Agriculture data, exports of wet salted cattle hides (cattle hides that have been preserved using brine solutions) reached nearly $1.48 billion in value, a six percent increase from 2016 levels. Meanwhile, exports of wet blue cattle hides (semi-processed hides that have undergone the first stages of leather tanning) fell seven percent from 2016, totaling $656 million in value. Lower market prices for US hides and wet blues in 2017 were offset by a five percent increase in cattle slaughter for the year, making more hides available at a lower price per piece.

China was the largest buyer of salted cattle hides, with imports valued at more than $871 million, while Italy was the single largest destination for wet blue cattle hides, with imports valued at more than $216 million in 2017. Other large export markets included South Korea, Mexico, Taiwan, and Vietnam.

US pigskin exports showed significant gains, rising 48 percent in value to $48.6 million in 2017. Mexico was the largest market for US pigskins with Thailand and Taiwan rounding out the top three destinations. Together, all three countries accounted for the vast majority of US pigskin exports. Significant gains were also seen in exports to China, which increased to $1.4 million in value. The United States regained full market access for pigskin exports to China in 2015.

Export data continues to show that global leather consumption remains sluggish, including reduced leather utilization in footwear globally. **R**