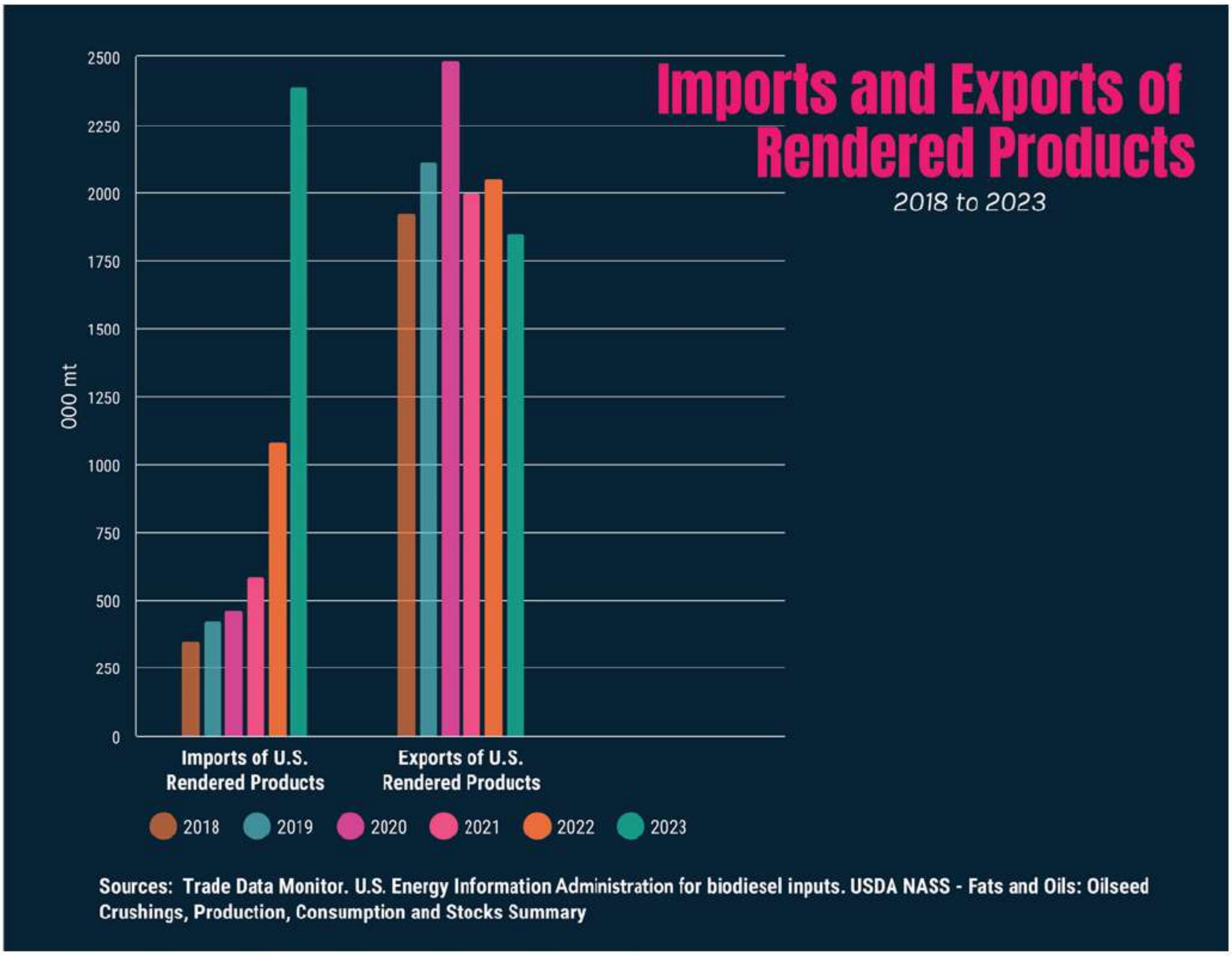

US Market Report

War, border crisis, political tensions, trade barriers and lower prices test the rendering industry's resilience.

By Dana Johnson Downing, NARA Senior Vice President of International Programs

Global events and market forces tested the resilience of the rendering and repurposed products industry in 2023. The industry's trajectory was impacted by a complex maze of issues and influences during the year, including geopolitical tension, trade restrictions, bureaucratic hurdles, border policy, shifting consumer preferences and rising demand for biomass-based diesel. These factors had discernible effects on trade relationships and market dynamics within the industry. This report will unpack some of the notable events in 2023 and how markets reacted.

Geopolitical Tensions, Global Events

The Russian-Ukrainian War and increased diplomatic tensions between the U.S. and China added a layer of uncertainty and hindered the possibility of exploring new market access avenues for rendered products. Despite challenging political circumstances that impeded progress in trade policy discussions with China, U.S. exports of rendered proteins to China soared to 361,047 (mt) in 2023, marking a significant record and making China the largest rendered protein market for the first time. The success in the Chinese market can be attributed in part to the North American Renderers Association's active engagement and hands-on approach in facilitating the registration of export facilities with Chinese authorities. This proactive involvement has been instrumental in establishing and maintaining a strong market presence in China.

In November, NARA Chairman Mike Glenn, alongside representatives from various U.S. agricultural export groups, embarked on a goodwill mission to China. The purpose of the mission was to engage in meetings with government officials and industry stakeholders. The primary objective was to convey gratitude on behalf of U.S. producers for the business relationship with China and to reaffirm the commitment to the Chinese market. Through these interactions, the delegation aimed to emphasize the positive relationship between U.S.

Table 1

	Average Annual Prices of Select Rendered Products ($/MT), 2008-2023																	
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	22-23
FATS	BFT Packer - Chicago	$753	$553	$737	$1,095	$963	$887	$801	$581	$638	$682	$556	$600	$678	$1,254	$1,649	$1,291	-22%
	Choice White Grease - Mo. River	$729	$511	$657	$1,020	$926	$846	$711	$498	$537	$549	$463	$512	$534	$1,066	$1,462	$1,174	-20%
	Yellow Grease - Mo. River	$604	$448	$577	$932	$788	$727	$612	$462	$505	$524	$408	$466	$461	$893	$1,266	$1,027	-19%
	Poultry Fat - Mid South	$709	$510	$628	$992	$864	$793	$660	$502	$546	$605	$566	$564	$558	$1,038	$1,376	$1,095	-20%
	Edible Tallow - Chicago	$840	$608	$775	$1,176	$1,068	$946	$865	$638	$714	$762	$690	$748	$828	$1,444	$1,817	$1,557	-14%
	Lard - Chicago	$445	$631	$849	$1,093	$1,279	$1,081	$959	$670	$708	$729	$718	$683	$820	$1,413	$1,850	$1,874	1%
PROTEIN	MBM - Ruminant Mo. Riv	$398	$406	$364	$413	$473	$464	$502	$359	$294	$273	$263	$215	$239	$338	$400	$446	11%
	MBM - Porcine Mo. Riv	$424	$441	$387	$462	$552	$527	$556	$377	$314	$314	$308	$234	$285	$389	$450	$489	9%
	Blood Meal Rum - Mo. Riv	$898	$829	$818	$949	$1,122	$1,232	$1,580	$1,070	$857	$931	$790	$714	$853	$1,035	$1,181	$1,134	-4%
	Blood Meal Porcine - Midwest	$1,086	$974	$937	$1,047	$1,214	$1,308	$1,643	$1,086	$899	$968	$822	$732	$910	$1,136	$1,436	$1,231	-14%
	PBM 57 pro - MidSouth	$536	$507	$448	$524	$594	$582	$610	$447	$330	$306	$295	$266	$277	$377	$422	$503	19%
	PBM - 64 pro - MidSouth	$747	$761	$742	$795	$919	$821	$871	$602	$614	$688	$721	$577	$698	$828	$837	$870	4%
	Feathermeal - Midsouth	$532	$594	$540	$565	$715	$701	$772	$521	$391	$437	$497	$390	$347	$533	$620	$635	2%

Source: The Jacobsen, Ryan Standard & Chloe Krimmel

The Jacobsen

producers and China, highlighting mutual appreciation and dedication to sustaining a robust market connection.

Trade Restrictions, Bureaucratic Hurdles

Trade barriers, coupled with bureaucratic challenges, continued to pose obstacles for the industry. In some instances, trading partners implemented unnecessarily stringent inspection and testing regimes, creating burdensome and expensive hurdles for exporters. Negotiations on trade policies and export approvals remained critical for the industry's success on the international stage.

While there was some noticeable progress on new market access for bovine, porcine and blood products in Central and South America, workers employed in rendering plants, pet food manufacturing, poultry and meat processing, and biomass-based diesel production would benefit from a broader and more proactive approach to trade policy.

One example of a bureaucratic hurdle was the administration's handling of the crisis at the Mexico-Texas border when border officials closed two key rail border crossings to shift resources in dealing with the surge of migrants. After a five-day closure that disrupted trade and sparked outrage from U.S. and Mexican businesses, the federal government reopened the border crossings.

Another bureaucratic hurdle that concerned renderers was the U.S. Environmental Protection Agency's proposed Meat and Poultry Products Effluent Guidelines and Standards — with an unnecessarily short 60-day comment period. Depending on how EPA decides to enact the proposed standards, some renderers may be required — at great cost — to upgrade their treatment systems for pollutants not currently restricted and meet lower effluent limits for pollutants currently regulated.

Under the least restrictive option, the EPA expects that 16 plants will close. The U.S. rendering industry is already at full capacity and can't sustain the loss of plants. NARA continues to work with a coalition of allied industries to prepare a detailed analysis and response to the draft rule at press time.

In 2023, the legislative branch also grappled with bureaucratic hurdles and chaos. Congressional proceedings were marked by a struggle to pass essential annual spending bills, leading to imminent threats of multiple government shutdowns. To avert these crises, lawmakers ultimately resorted to temporary legislation to ensure the continuous operation of the federal government. The challenges extended to major legislative initiatives, notably the Farm Bill, which oversees various agricultural and food programs, including crucial export promotion programs. The

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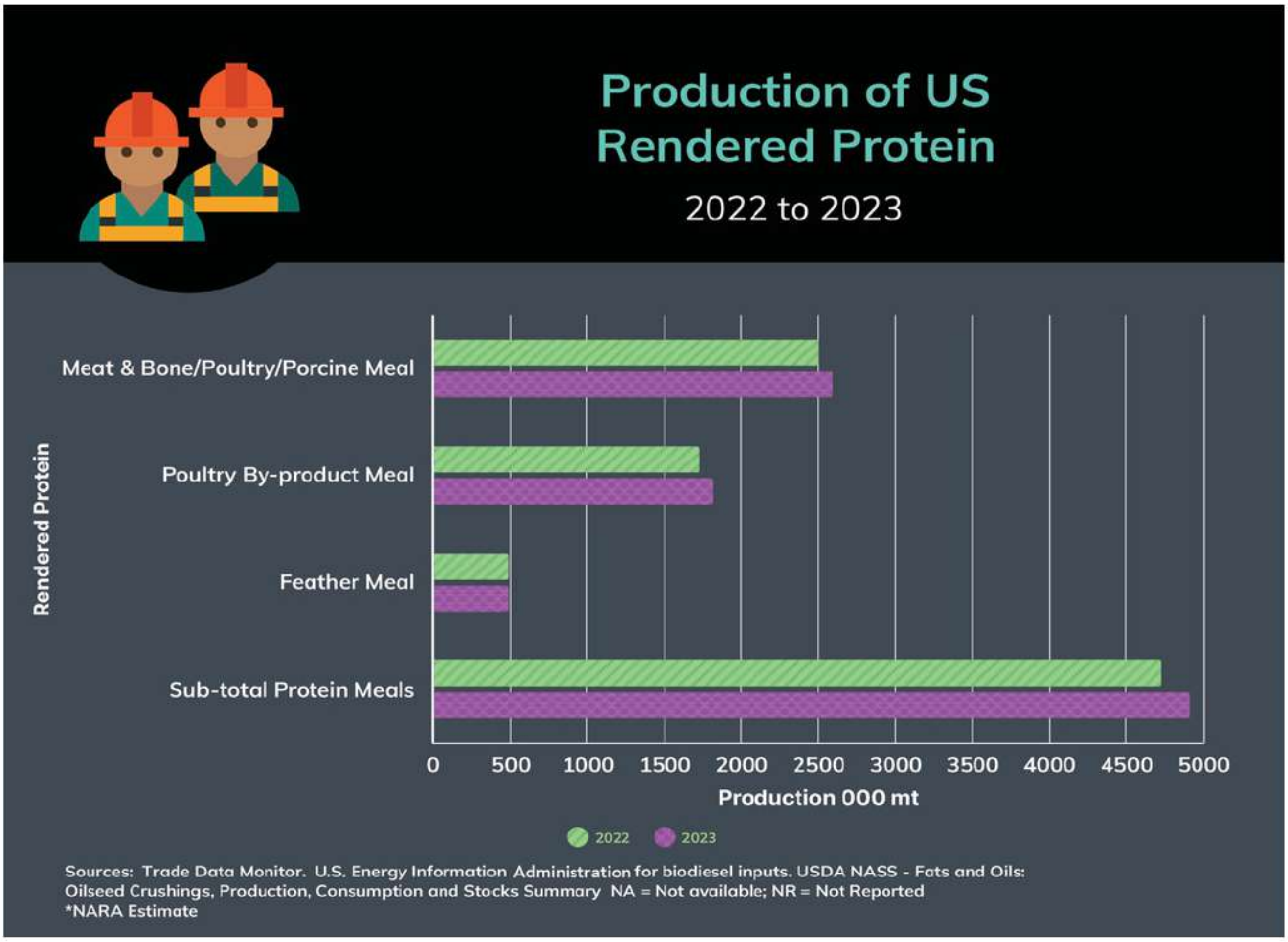
Table 2

US Production, Consumption and Export of Rendered Products for 2018-2023							
Category	2018	2019	2020	2021	2022	2023	% Change 2023/2022
Production				000 mt			
Tallow	2,770.9	2,767.4	2,601.9	2,860.8	2,834.2	2,793.1	-1.4%
Inedible Tallow	1,757.9	1,745.9	1,603.0	1,787.9	1,794.5	1,728.9	-3.7%
Technical Tallow	566.5	569.4	572.7	606.1	590.9	585.1	-1.0%
Edible Tallow	446.5	452.1	426.2	466.8	448.8	479.2	6.8%
White Grease	736.8	768.9	734.2	697.6	745.9	741.0	-0.7%
Lard	149.4	158.0	137.6	131.7	128.5	132.4	3.0%
Choice White Grease	587.4	610.9	596.6	565.9	617.4	608.6	-1.4%
Yellow Grease/Used Cooking Oil*	NR	NR	NR	NR	NR	NR	
Poultry Fat	1,025.6	1,133.9	1,146.5	957.1	918.0	1,039.6	13.3%
Other Grease	285.9	209.4	207.2	229.2	175.6	135.2	-23.0%
Sub-total Fats and Greases	4,819.2	4,879.6	4,689.8	4,744.7	4,673.6	4,708.9	0.8%
Meat & Bone Meal	2,658.2	2,694.4	2,475.5	2,518.8	2,509.0	2,594.2	3.4%
Poultry By-Product Meal	1,368.7	1,548.6	1,580.3	1,515.1	1,728.4	1,827.1	5.7%
Feather Meal	464.5	601.0	553.5	452.1	491.8	491.9	0.0%
Sub-total Protein Meals	4,491.3	4,844.0	4,609.2	4,485.9	4,729.1	4,913.2	3.9%
TOTAL Rendered Products	9,310.5	9,723.6	9,299.0	9,230.6	9,402.8	9,622.1	2.3%
Imports							
Tallow	139.3	192.0	243.1	333.3	554.1	795.0	43.5%
White Grease	35.8	27.1	23.0	30.4	49.6	71.5	44.1%
Lard	6.9	6.2	5.2	7.7	14.4	16.2	12.5%
Choice White Grease	28.9	20.9	17.8	22.7	35.2	55.3	56.9%
Yellow Grease/Used Cooking Oil	62.8	87.7	83.1	129.5	395.6	1,405.6	255.3%
Poultry Fat	0.6	3.5	2.1	1.3	3.0	2.3	-23.1%
Sub-total Fats and Greases	238.6	310.2	351.4	494.4	1,002.2	2,274.4	126.9%
Meat & Bone/Poultry/Porcine Meal	108.9	117.4	114.0	92.5	81.5	116.6	43.1%
Feather Meal	0.4	0.3	0.1	0.2	0.4	0.2	-50.0%
Sub-total Protein Meals	109.3	117.7	114.1	92.7	81.9	116.8	42.6%
TOTAL Rendered Products	347.9	428.0	465.5	587.1	1,084.1	2,391.2	120.6%
Consumption							
Biomass-Based Diesel							
Animal Fat	NA	NA	NA	1,224.9	1,273.1	2,251.3	76.8%
Tallow	NA	NA	NA	735.4	898.8	1,904.2	111.9%
Poultry Fat	NA	NA	NA	139.8	73.3	76.8	4.8%
White Grease	NA	NA	NA	314.0	301.0	270.3	-10.2%
Other	NA	NA	NA	35.7	NA	NA	
Recycled Oils	NA	NA	NA	1,535.2	2,273.1	3,092.8	36.1%
Yellow Grease/Used Cooking Oil	NA	NA	NA	1,535.2	2,273.1	3,092.8	36.1%
Sub-Total				2,760.1	3,546.2	5,344.1	50.7%
Meat & Bone/Poultry/Porcine Meal	3,157.1	3,233.3	2,980.8	2,932.7	3,237.1	3,350.9	3.5%
Feather Meal	355.0	510.8	463.5	325.5	299.6	211.4	-29.4%
Sub-Total	3,512.1	3,744.1	3,444.3	3,258.3	3,536.7	3,562.3	0.7%
Exports							
Inedible Tallow/Technical Tallow	326.9	301.5	299.8	339.5	275.2	108.4	-60.6%
Yellow Grease	360.7	439.0	761.9	557.3	391.6	192.4	-50.9%
Edible Tallow	117.9	121.6	103.0	113.5	68.8	45.7	-33.5%
Lard	16.8	22.5	18.1	81.3	26.7	17.0	-36.6%
Choice White Grease	0.4	0.7	5.9	0.1	0.2	0.1	-52.2%
Poultry Fat	14.8	12.9	19.0	17.0	17.0	19.2	12.5%
Sub-total	837.6	898.2	1,207.6	1,108.6	779.6	382.7	-50.9%
Meat & Bone/Poultry/Porcine Meal	978.6	1,127.1	1,188.9	1,193.6	1,081.7	1,187.0	9.7%
Feather Meal	109.9	90.5	90.1	126.7	192.6	280.7	45.7%
Sub-total	1,088.5	1,217.6	1,279.0	891.8	1,274.3	1,467.7	15.2%
TOTAL, All Rendered Products	1,926.1	2,115.8	2,486.5	2,000.4	2,053.9	1,850.4	-9.9%

Sources: Trade Data Monitor. U.S. Energy Information Administration for biodiesel inputs.
USDA NASS - Fats and Oils: Oilseed Crushings, Production, Consumption and Stocks Summary

NA = Not available; NR = Not Reported

*NARA Estimate



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Farm Bill faced an impasse, partly due to political divisions between the Republican-led House and the Democratic-led Senate.

Concern over the nation's growing agricultural trade deficit led lawmakers to call on the U.S. Department of Agriculture to create a new export promotion program. USDA Secretary Tom Vilsack tapped into the department's Commodity Credit Corporation to set aside $1.2 billion in funding for a new Regional Agricultural Promotion Program to prioritize market development spending with the objective of diversifying export markets, so the U.S. isn't overly reliant on trade with China, Canada, Mexico and the EU. The agency announced $300 million would be available in 2024.

Shifting Consumer Preferences Drive Sustainable Practices

Consumers are steering demand towards ecofriendly and sustainable production methods, prompting retailers and brands to adopt various strategies in line with their carbon reduction commitments. This aligns with global efforts to combat climate change. Those procuring rendered products for pet food, animal feed and industrial applications are pressuring their supply chains to contribute to an overall reduction in carbon footprints.

Beyond optimizing their supply chains, retailers and brands are increasingly investing in renewable energy, implementing energy-efficient measures and embracing circular economy principles, including recycling and minimizing food waste. The rendering industry stands ready to capitalize on the demand for sustainable practices by educating supply chain partners about its contributions to reducing food waste and carbon emissions within the circular bioeconomy. In 2024 and beyond, NARA and its members are prioritizing industry collaboration and transparent reporting to better meet customer demands.

Pet Humanization Trend Drives Market Dynamics

The trend of humanizing pets persisted in 2023, giving rise to new brands in the pet food and treats sector. More Americans view their dogs and cats as integral family members, spurring a surge in businesses dedicated to indulging and safeguarding these beloved pets. The shift from pet ownership to "pet parents" has led to a greater willingness to invest in premium food, medical care and supplies for household animals.

Pet food retailers and brands have embraced this humanization trend as a permanent shift and a strategic approach for increasing sales. While human-grade pet food remains a niche segment in the overall market, the industry faces the ongoing task of communicating the nutritional and sustainability advantages of processed animal proteins as essential components of pet diets.

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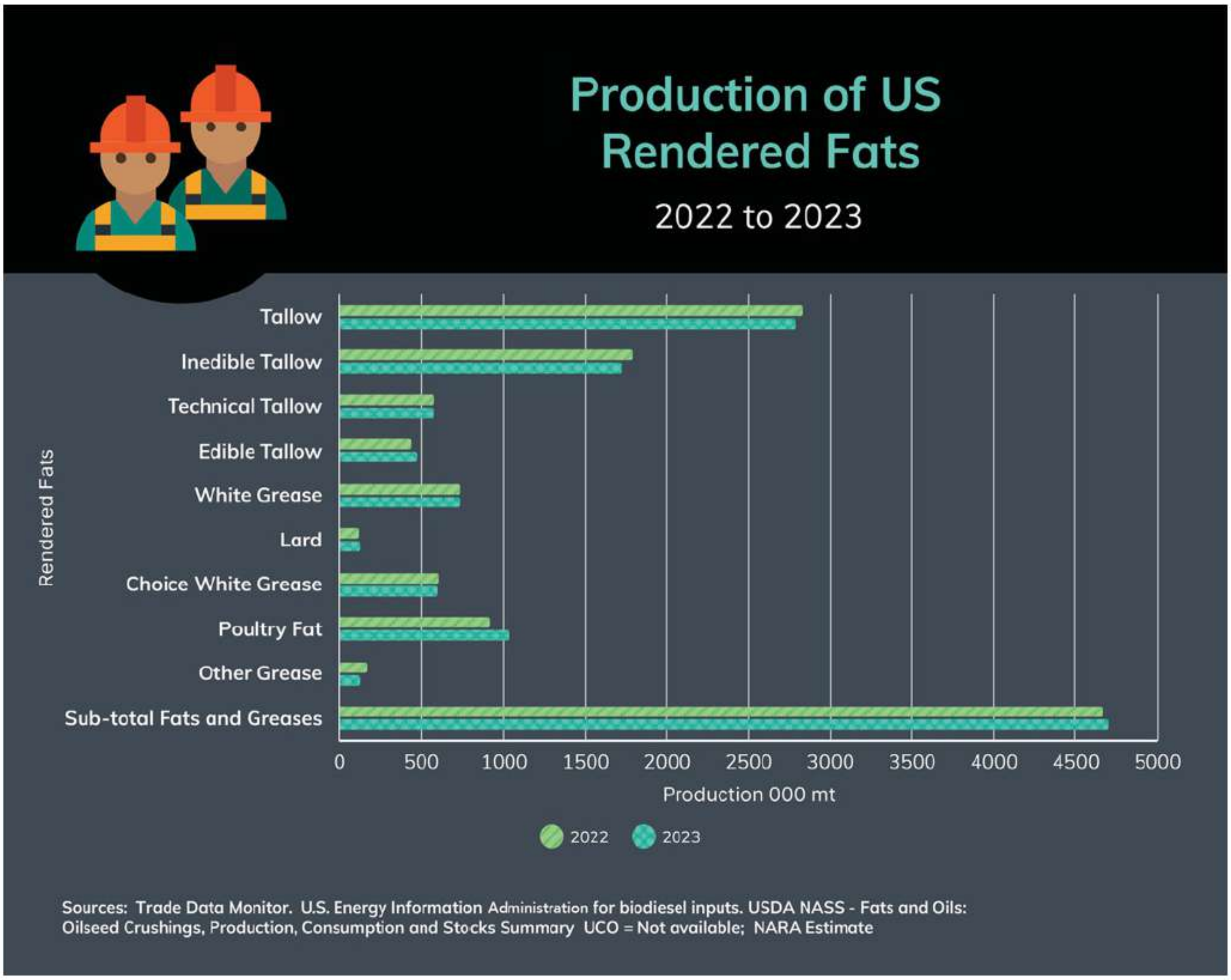

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As the animal by-products industry navigated through these market dynamics in 2023, adaptability, strategic planning and a forward-looking approach became essential for stakeholders to seize opportunities and overcome challenges.

Domestic Supply

Beef

The U.S. cattle inventory started the year on Jan. 1, 2023, at 88.1 million head and dropped to 87.2 million head by Jan. 1, 2024, according to USDA's National Agricultural Statistics Service. The 2024 inventory number is the lowest since 1951, reflecting the continued stress of drought on the nation's cow herd throughout 2023. Through most of the year, 50% of beef cows were living in dry conditions and 35% were in drought conditions, according to CattleFax.

As well, the 2023 calf crop was down 2.5% from the previous year and was the smallest calf crop since 2014, according to Derrell Peel, an extension livestock marketing specialist with Oklahoma State University. The number of replacement beef heifers dropped from 2023 to 2024 by 1.4% and represents the smallest number of replacements since 1950. Tight cattle supplies along with inflation, labor costs, plus continued drought conditions — including a prediction for the quick return of La Niña weather patterns — and catastrophic wildfires in regions with large cattle numbers all point to further delay in rebuilding the cow herd but also strong prices for producers.

Cattle slaughter in 2023 was down 4.3% compared to the prior year at 32.8 million head. In terms of beef production, CattleFax analysts report after a decline of 1.3 billion pounds in 2023, beef production is projected to be down 1 billion in 2024 as well to 26.96 billion pounds. There will be excess capacity at both the feedyard and packer level competing for less supply of cattle.

Pork

It was a rough year for U.S. pork producers in 2023. High input prices, fallout from animal welfare regulations in California and Massachusetts, competition from poultry and lackluster demand hit prices hard and producers found themselves in a cost-price squeeze. USDA's quarterly estimate of all hogs and pigs on Dec. 1, 2023, was 75 million head — up slightly from the same time frame in 2022. The breeding inventory of 6 million sows was down 3% and the number of market hogs was up slightly at 69 million head. While the number of sows was smaller, productivity helped offset that reduction. Hog slaughter in 2023 was actually up 2% at 127.9 million head, which represents a 20% increase compared with 10 years ago.

Table 3. US Annual Livestock and Poultry Slaughter, 2014-2022

Specie/Unit	2014	2015	2016	2017	2018	2019	2020	2021	2022	% 2023
Cattle - thousand head	30,266	28,843	30,578	32,189	33,005	33,555	32,786	33,850	34,322	32,840
Hogs - thousand head	106,958	115,512	118,220	121,317	124,432	129,913	131,563	128,986	125,322	127,969
Broilers & Mature Chickens - thousand head	8,669,628	8,822,692	8,908,986	9,050,702	9,160,910	9,339,249	9,346,660	9,325,584	9,546,222	9,501,611
Turkeys - thousand head	236,617	232,389	243,255	241,680	236,860	227,660	223,003	215,663	208,225	215,992
Ducks - thousand head	26,368	27,749	27,268	26,628	27,647	27,544	22,484	24,301	26,657	28,203

Source: USDA/National Agriculture Statistics Service

kents notes

Specie/Unit	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cattle - liveweight	1,330	1,360	1,363	1,349	1,350	1,344	1,373	1,371	1,369	1,365
Hogs - liveweight	285	283	282	282	283	285	289	288	289	287
Broilers & Mature Chickens - liveweight	6.00	6.12	6.16	6.20	6.26	6.32	6.41	6.46	6.49	6.55
Turkeys - liveweight	30.39	30.19	30.68	30.90	31.07	32.01	32.25	32.28	31.33	31.70
Ducks - liveweight	6.87	6.85	6.85	6.92	6.98	7.03	6.97	6.96	7.05	7.10

Source: USDA/National Agricultural Statistics Service
Livestock Slaughter Monthly https://usda.library.cornell.edu/concern/publications/rx913p88g
Livestock Slaughter Annual Summary https://usda.library.cornell.edu/concern/publications/r207tp32d
Poultry Slaughter Annual Summary https://usda.library.cornell.edu/concern/publications/pg15bd88s

Cattle Cycle:
https://www.ag.ndsu.edu/news/columns/spotlight-on-economics/spotlight-on-economics-the-cattle-cycle-revisited

Pork industry experts have predicted 2024 will be another extremely challenging year on the production side. Lee Schulz, associate professor and economist at Iowa State University, told *Pork* magazine that 2023 returns for farrow-to-finish operations were projected to average a loss of $32 per head. The forecast for 2024 is a loss of $21 per head. "If realized, 2023 and 2024 could go down as the worst two-year stretch for profitability in hog production ever," Shulz said.

Poultry

The U.S. poultry industry also struggled in 2023 with inflation and a fall in consumer demand being prime obstacles. Although 2023 saw an increase in per-capita chicken consumption, an increase in production and decrease in exports kept wholesale prices low. Fortunately, broiler producers were able to lock in higher prices with contracts. The 2023 Chicken and Eggs Summary from NASS estimated an increase of 1% in chicken

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Table 4. US Export Customers by Product (in metric tons), 2013-2023

Product/Country	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023/2022
Inedible Tallow												
Canada	14,841	18,493	20,797	22,600	20,000	35,418	29,840	47,722	60,869	111,447	45,420	-59.25%
Mexico	238,079	235,843	227,876	145,636	126,624	136,009	130,519	122,117	97,086	50,345	38,946	-22.64%
Singapore	0	5,000	14,275	46,312	119,240	88,421	100,600	46,000	151,758	109,355	21,950	-79.93%
Trinidad and Tobago	179	264	205	78	159	73	34	0	61	195	1,977	913.85%
Honduras	14,097	11,499	9,000	8,240	5,641	3,370	2,300	8,160	11,650	380	60	-84.21%
Total All Countries	*382,263*	*402,548*	*343,115*	*283,280*	*324,586*	*326,945*	*301,543*	*299,761*	*339,459*	*275,245*	*108,352*	*-60.63%*
Yellow Grease (includes UCO)												
Singapore	2,593	2,675	1,755	1,541	8,110	71,747	169,584	511,056	298,723	178,469	78,264	-56.15%
Mexico	95,892	95,574	72,564	50,034	63,372	39,267	48,625	58,400	92,222	96,063	62,095	-35.36%
Canada	11,533	10,604	11,716	9,073	7,726	7,968	8,739	7,998	9,513	25,405	24,459	-3.72%
Ecuador	99	373	48	301	554	1,388	1,410	2,060	3,495	6,488	4,931	-24.00%
Dominican Republic	18,082	15,518	9,585	10,639	9,652	7,943	7,215	9,908	11,309	9,833	4,370	-55.56%
Netherlands	68,449	29,173	43,022	64,041	68,929	69,718	68,667	66,120	23,666	14,746	3,247	-77.98%
China	144	276	965	1,796	1,952	2,330	2,493	3,790	3,256	3,331	2,184	-34.43%
Chile	16	7	6	62	166	401	176	299	162	1,175	2,070	76.17%
Colombia	388	439	593	1846	743	445	662	1,060	1,424	1,720	1,345	-21.80%
Australia	551	830	313	219	23	110	28	2	69	43	1,140	2551.16%
Japan	134	76	48	63	139	260	270	296	208	631	873	38.35%
Georgia	0	0	-	-	-	-	-	-	-	-	767	
Total All Countries	*361,031*	*333,133*	*252,959*	*286,226*	*300,198*	*360,682*	*439,045*	*761,856*	*557,270*	*391,559*	*192,409*	*-50.86%*
Edible Tallow												
Mexico	66,278	35,840	61,076	114,154	72,120	113,525	118,951	101,587	108,783	64,127	43,177	-32.67%
Canada	4,870	4,807	3,657	5,706	5,552	4,338	2,547	881	1,344	3,208	1,504	-53.12%
China	0	-	-	-	-	-	-	15	-	616	1,001	62.50%
Jamaica	0	-	-	73	-	-	-	-	-	-	49	
Total All Countries	*71,148*	*40,783*	*64,762*	*120,146*	*77,678*	*117,903*	*121,605*	*102,963*	*113,522*	*68,761*	*45,734*	*-33.49%*
Lard												
Mexico	28,299	18,848	17,691	16,924	15,876	16,173	22,097	17,515	80,631	26,469	16,496	-37.68%
China	0	0	4	0	0	0	0	0	257	0	304	
Marshall Islands	40	36	53	178	153	118	55	12	54	33	59	78.79%
Total All Countries	*29,398*	*21,390*	*19,768*	*19,050*	*17,181*	*16,825*	*22,488*	*18,097*	*81,293*	*26,730*	*16,957*	*-36.56%*
Choice White Grease												
Mexico	33	208	27	67	659	295	573	22	12	37	107	189.19%
Total All Countries	*491*	*639*	*202*	*374*	*797*	*421*	*661*	*5,909*	*111*	*224*	*107*	*-52.23%*
Poultry Fat												
Canada	11,065	13,072	10,943	9,320	10,125	8,815	7,074	6,526	5,526	5,418	6,477	19.55%
Guatemala	370	458	446	516	567	561	1,003	2,659	3,773	3,600	4,957	37.69%
Mexico	854	1,731	2,418	2,139	2,545	1,955	1,780	2,153	1,718	1,461	3,048	108.62%
Dominican Republic	644	577	616	671	443	403	586	646	548	1,068	1,232	15.36%
Indonesia	-	-	-	-	-	-	-	-	-	120	1,171	875.83%
Total All Countries	*14,895*	*18,173*	*16,376*	*14,728*	*16,065*	*14,835*	*12,862*	*18,980*	*16,988*	*17,045*	*19,174*	*12.49%*
Animal Protein Meals												
China	54,483	63,174	81,400	138,088	162,346	198,991	199,670	235,510	218,507	188,544	361,047	91.49%
Indonesia	168,479	156,059	199,067	277,859	303,588	321,452	385,010	333,233	335,414	331,498	288,632	-12.93%
Vietnam	1,780	1,613	8,214	28,416	39,528	65,629	115,544	190,485	124,192	125,840	158,250	25.75%
Mexico	83,474	74,874	103,789	99,618	129,371	197,099	197,636	200,824	254,696	151,972	155,877	2.57%
Ecuador	6,790	7,058	6,496	9,557	8,169	16,827	28,135	27,358	42,769	49,874	59,345	18.99%
Philippines	29,729	12,462	10,734	9,267	6,605	23,592	38,915	64,090	71,896	96,233	48,872	-49.21%
Canada	43,368	48,690	58,743	64,292	66,422	54,520	49,049	54,875	56,571	51,296	42,006	-18.11%
Honduras	3,406	1,100	3,704	10,693	4,102	8,694	7,520	12,654	31,157	17,718	26,669	50.52%
Guatemala	12,595	7,399	1,381	4,130	2,934	915	3,336	8,770	7,998	12,360	11,359	-8.10%
Peru	1,156	994	1,019	2,410	5,564	5,809	3,762	9,151	11,072	13,460	9,881	-26.59%
Chile	59,689	32,026	57,084	18,144	26,963	44,454	41,801	15,451	7,737	14,440	9,101	-36.97%
Thailand	14,965	5,743	5,166	3,493	17,137	18,273	32,180	18,854	15,385	12,025	6,800	-43.45%
Australia	0	0	0	0	73	6	77	145	1,310	2,174	1,941	-10.72%
Dominican Republic	0	307	1,352	14	18	0	-	188	-	766	1,199	56.53%
Japan	0	16	-	12	0	0	-	-	2	1,623	1,080	-33.46%
Colombia	2,276	1,523	950	459	925	1,204	1,561	1,494	2,701	3,142	1,023	-67.44%
Singapore	0	0	0	0	80	293	40	482	1	263	1,005	282.13%
Costa Rica	781	749	1,176	2,603	1,564	167	108	363	869	631	647	2.54%
Total All Countries	*518,458*	*438,689*	*561,288*	*704,871*	*807,182*	*978,600*	*1,127,147*	*1,188,905*	*1,193,602*	*1,081,733*	*1,186,977*	*9.73%*
Feather Meal												
Vietnam	4,120	7	2,637	1,440	-	3,925	3,763	11,124	26,691	45,839	111,650	143.57%
Indonesia	110,087	98,990	41,750	27,373	29,177	28,058	28,047	41,604	62,488	98,105	106,143	8.19%
Chile	52,972	48,135	24,403	10,046	11,744	30,289	43,443	23,049	23,272	38,575	49,831	29.18%
China	183	1,265	977	7,391	18,904	30,813	4,073	1,541	-	1,029	3,034	194.85%
Honduras	0	0	-	-	-	-	1,525	1,945	966	656	2,981	354.42%
Canada	8,961	16,227	15,573	16,872	18,241	15,072	7,175	6,784	7,212	5,150	2,869	-44.29%
Thailand	0	56	9	29	69	0	-	-	-	-	1,382	
Total All Countries	*178,815*	*165,952*	*87,000*	*63,580*	*80,123*	*109,902*	*90,454*	*90,075*	*126,738*	*192,603*	*280,680*	*45.73%*

Source: Trade Data Monitor

US Production & Use (Biomass-based Diesel) of Rendered Fat in MT; (Annual 2023)						
Product	Production	Imports	Total Supply	Consumption in Biomass-based Diesel	Percent of Production	Percent of TOTAL Supply
Poultry Fat	1,027,517	2,341	1,029,858	76,801	7%	7%
Tallow	2,839,986	794,968	3,634,954	1,904,018	67%	52%
White Grease	738,448	71,517	809,965	270,270	37%	33%
TOTAL*	4,605,952	868,826	5,474,778	2,251,090	49%	41%

Source: USDA/National Agricultural Statistics Service
U.S. Energy Information Administration

*TOTAL only includes poultry fat, tallow, and white grease.
"Yellow grease" and "other" categories are not accurate

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inventory at 522.6 million head. Broiler and mature chicken slaughter decreased half a percentage point to 9.50 billion head. Liveweight for the category was up 0.9% at 6.55 pounds.

Turkey slaughter was up 3.7% in 2023 at 215.9 million head. Turkey liveweights rose 1.2% to 31.7 pounds. Duck slaughter was up 5.8% year over year to 28.2 million — the highest level in 10 years. Liveweight increased slightly to 7.10 pounds.

Rendered Products – Fats

Production numbers were mixed for U.S. rendered fats in 2023. Total fats and greases amounted to 4.7 million metric tons (mmt), a nominal increase over 2022 of 0.8%. In the tallow category, inedible tallow was down 1.4% and technical tallow was 3.7% lower but edible tallow was up 6.8%. White grease production overall was down 0.7% while poultry fat was up 13.3% and other grease down 23%.

The volume for each category can be found in Table 2. The data in this table is compiled using the USDA/NASS *Fats and Oils: Oilseed Crushing, Production, Consumption and Stocks Annual Summary*. However, the yellow grease and used cooking oil (UCO) figures are based on NARA and industry estimates.

On the import side, the U.S. saw an increase in fat imports of 126.9% over 2022 amounting to 2.27 mmt – a huge part of that being UCO from China. Tallow imports rose 43.5%, white grease increased 44.1% and yellow grease/UCO ballooned 255.3%. The only category of rendered fats that saw a decrease in imports was poultry fat, which was down 23.1%.

Rendered Products – Proteins

The production of rendered protein in the U.S. grew 3.9% year over year to 4.9 mmt. Meat and bone meal (MBM) is the biggest protein category, and it rose 3.4% in 2023 while the next biggest category — poultry by-product meal (PBM) — grew slightly more at 5.7%. The amount of feather meal produced was unchanged compared to 2022 at 491.9 mt.

Protein imports as a whole rose 42.6% versus the year prior to 116.8 mt. Meat and bone/poultry/porcine meal imports increased 43.1% while feather meal imports dropped 50%.

As a whole, production of total U.S. rendered products — protein and fat — grew 2.3% for 2023 to a total of 9.6 mmt. Imports of total rendered products were up 120.6%.

Exports of US Rendered Products

Exports of U.S. rendered fats were all down in 2023 with one exception — poultry fat exports were up 12.5%, with most of that going to Canada, Guatemala and Mexico. Otherwise, all categories of fat exports were down roughly 30% to 60%, with overall fat exports down 50.9% at 382.7 mt.

On the other hand, U.S. rendered protein exports were up year over year with meat and bone/poultry/porcine meal exports up 9.7% and feather meal up 45.7%. Total exports of rendered protein products amounted to 1.46 mmt. The top destinations for protein meals were China, with a 91.4% increase; Indonesia, which saw a 12.9% drop; Vietnam, up 25.7%; and Mexico with a 2.5% increase. For feather meal, Vietnam and Indonesia were by far the two biggest markets in terms of volume, although exports to Honduras were up 354.4% and China was up 194.8%.

In total, all rendered product exports saw a decrease of 9.9% totaling 1.85 mmt. See Table 2 for more details and volume of all categories.

Rendered Product Prices

On the fat side of the ledger, fat prices were down considerably in 2023 with much of the blame due to EPA's biofuel-related actions, particularly with the Renewable Fuel Standard. In short, EPA finally issued a disappointing RFS "set" proposal in December 2022 that disregarded the biofuel growth and production capacity coming online by issuing lower than expected renewable volume obligations (RVOs).

It was a shocking course reversal from the agency's previous policy that had encouraged growth in the industry and helped generate a massive build-out of capacity. When the final rule was issued in June 2023, despite months of lobbying, EPA stuck with its modest growth policy for 2023-2025 RVOs. This resulted in a freefall in renewable identification number (RIN) credit prices by autumn. Since then, multiple biodiesel plants have closed.

According to data from The Jacobsen, renderers saw fat prices fall in every category compared to the previous year with one exception — lard prices were 1% higher. Otherwise, bleachable fancy tallow (BFT) packer fell 22%, choice white grease dropped 20%, yellow grease was down 19% and edible

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tallow dipped 20%. See Table 1 for more details.

On the protein side, prices were mixed. MBM (ruminant) prices were up 11% while MBM (porcine) rose 9%. Blood meal (ruminant) fell 4% and blood meal (porcine) was down 14%. PBM (57-pro) saw a 19% price gain in 2023 and PBM (64-pro) was up 4%. Feather meal prices were up by 2%.

One of the hurdles for rendered protein prices in the coming year will undoubtedly be the expected expansion of soybean crush capacity by 25%. Just one bushel of soybeans produces 11 pounds of oil and 48 pounds of meal. So, if crush capacity increases by 600 million bushels — that's going to result in 13 mmt of soybean meal on the market, which will certainly have a depressive effect on protein prices.

The Good News

While many of the same factors impacting rendering markets in 2023 will continue to influence supply and demand in 2024, NARA's aggressive work to open new international markets for U.S. products is paying off with the first new market access since 2020. In 2023, Chile and Colombia opened to U.S. exports of bovine MBM. Also, the first U.S. plants were approved for export to Indonesia since 2018. And as recently as mid-March, the Animal and Plant Health Inspection Service has posted the new requirements for bovine MBM exports to Ecuador.

NARA staff is also planning potential international trade missions in 2024 to further expand U.S. renderers' market access and build demand for U.S. protein based on quality, reliability and sustainability. They are also working to streamline regulatory burdens with both the U.S. government and our trading partners. To help accomplish all these goals, NARA has applied for funding from the new $1.3 billion RAPP in addition to the Market Access Program and Foreign Market Development funding the association has been awarded by USDA.

The Fats and Protein Research Foundation also continues to fund research on new, innovative applications for rendered animal products that could someday open new market channels. In fact, FPRF did a lot of research on the use of rendered animal fats in biofuels and it wasn't that long ago that biofuel was not even a player in the market for feedstocks. Who knows what the next big market for rendered products will be?

Whatever it is, NARA will be there for renderers advocating to get market access anywhere there could be buyers and educating the world about the unparalleled role rendering plays in sustainability efforts worldwide. **R**

Steve Temple of Steen Research describes a pilot project to take nitrogen out of wastewater and turn it into highly valued organic fertilizer.

Pacific Coast Renderers Meeting Features Innovative Solutions

By Sharla Ishmael

Speakers at the 91st annual meeting of the Pacific Coast Renderers Association, held in March in California, spoke about solutions to common rendering problems and how they can be dealt with through innovative solutions and training.

For instance, Steve Temple of Steen Research, a North American Renderers Association associate member company that provides chemical and engineering development services to renderers and processors, unveiled an ambitious pilot project aimed at tackling wastewater issues while establishing a lucrative new revenue stream.

Keep in mind, the U.S. Environmental Protection Agency has proposed new standards for nitrogen and phosphorus in the wastewater discharged from a category of businesses that includes rendering, so renderers may need to adjust their processes. Temple explained where nitrogen is generated in the rendering process, what form it takes in wastewater and the challenges of utilizing a biological process to deal with the nitrogen.

He has developed an alternative to biological processing that uses a chemical/mechanical method dubbed the "Temple Process." It removes 90% of the nitrogen and can also generate value — in the form of organic fertilizer. Working with Michael Koewler at Sacramento Rendering Co., Temple has a pilot project set up in a rendering plant to prove the concept.

There is also research ongoing at the University of California-Davis for this new type of fertilizer being generated that uses lactic acid instead of citric acid due to market changes. The research will study how the fertilizer interacts with agronomy, soil microbes and plants.

"We've got our registered fertilizer — AmmoNatural Lactic — approved for the process from the National Organics Board," Temple explained. "And then we had to go to the state and get recertification, so we also have approval from the California Department of Food and Agriculture. How much value is in this? The U.S. organic fertilizer market is projected to grow from $354.22 million in 2024 to $630.92 million by 2029. The thought is to sell it in 5- gallon and 6-gallon containers. At hydroponic stores, you'll see 6-gallon containers of organic fertilizer going for $130.

"So, you can really reduce your nitrogen footprint," he added. "And I feel like it's a really great opportunity to close the loop in rendering as far as an aspect that hasn't really been looked at because you guys are super resource rich. You've got all these animals that have been concentrating up all these nutrients through their life cycle and then they come into the plant and you're making meat and bone meal, blood meal and tallow. This is an opportunity to make something that has an incredible value for the industry and it solves a huge problem for you guys."

Dupps University

Richard Weeks with The Dupps Co., another NARA associate member, outlined his company's plans for an expansive new educational program to help solve another common rendering problem — the skills gap in the workforce.

"The thing that keeps us all up at night is people," Weeks said. "People are the hardest part of our business. ... Finding people is hard. Finding good people is even harder. And then keeping those people is hard again. So, one of the ways to keep them is to train and this is what we're looking to do with the Dupps University. We're still putting this together, it's in the development phase,

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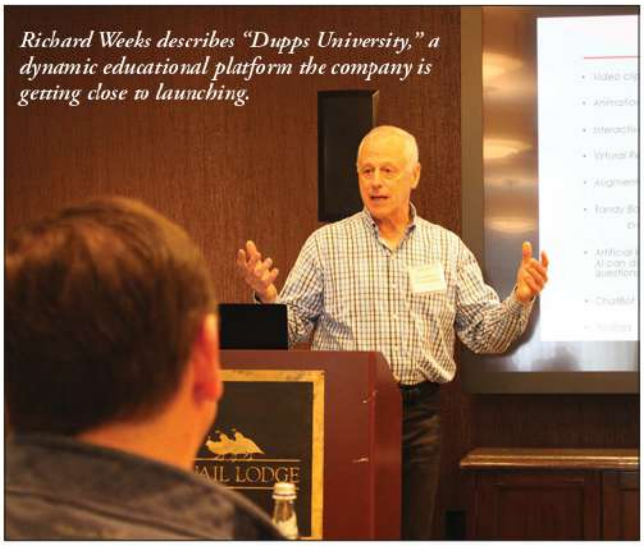
Pacific Coast Renderers Meeting *Continued from page 19*

but we're getting close. What we're putting together will be a dynamic, living document to keep up with all the changes that happen in this industry."

Weeks shared a sample table of contents for the training courses with chapters covering everything from an introduction to the company to the basics of rendering and all the different parts of the operations process. The presentations can be tailored for different audiences. Dupps also plans to implement the latest technology for the most effective teaching and he demonstrated one of those tools — an avatar of himself that could be programmed to say whatever needs to be said without Weeks saying the words in real life.

Active engagement will be key to "students" retaining the information presented. So, the company is incorporating interactive animation, virtual reality, augmented reality, artificial intelligence and more into the lessons. The company plans to start beta testing the program this summer in-house.



Richard Weeks describes "Dupps University," a dynamic educational platform the company is getting close to launching.

Glenn Stresses Need for Data

Michael Glenn, NARA chairman, vice president and chief financial officer of BHT ReSources, spoke about NARA's new strategic mission. He emphasized the need for better data collection within the industry to prove the value of rendering and to adapt to a changing world.

"We don't have enough information right now to tell our story," Glenn said. "Part of it is that renders are very secretive of their data, believe it or not. Who in here wants to give their customer list or share your production volume? But we have got to figure out a way that we can share this information and get it to a place that we can actually tell our true story. I think we'll figure out a way to do that, but we should be able to demonstrate our economic value."

Glenn also reminded PRCA members of the second annual National Rendering Day coming up April 21 and encouraged them to incorporate it into their companies' social media plans to amplify industry visibility.

Dr. Charles Starkey, vice president of scientific and regulatory programs at NARA, addressed recent regulatory developments, including the EPA leaving rendering out of a new Wasted Food Scale that is replacing the Food Recovery Hierarchy. He said NARA had received an apology over the phone for the unforced error but it will take more time and effort to get rendering put back in the agency's materials. Starkey also addressed changes to proposed pet food regulations and other issues on the regulatory and legislative fronts.

California Assemblymember Gail Perrin spoke to PRCA members about her priorities in the legislative session. Among her duties, Perrin is a member of the Committee on Natural Resources, which has jurisdiction over issues like waste management, organics recycling and biofuels.

Stephen Silva with the E.B. Wakeman Co. discussed market trends, traceability issues for used cooking oil (UCO), and the continued fallout from government policies in the biofuels sector.

"We all know what's happening with imports, really flooding in during the last year," Silva said. "Also, where we're at on biofuel capacity versus what some of the volume obligations are — that's certainly going to affect price. It started to affect price really quite a bit in the fall of 2023. It will continue to affect prices, I think, until 2025.

"Just look at some palm pricing and how that fits into feed rations," he added. "We also need to talk about some of these new traceability requirements for UCO, which to me is a really big thing that we've been talking about for a long time, but I think we're there. We may be having to make some changes on tracking traceability and records disclosure to continue selling UCO to the biofuels industry."

Dennis Albiani, president of California Advocates, spoke to PRCA members about bills being considered in California of interest to the rendering industry and the state's budget crisis that will result in cuts to some programs and raised fees for other government services. He also discussed the status of problematic regulatory issues such as the California Air Resources Board's push for electrification in the transportation sector that would impact trucking and other fleet vehicles used by industry.

Albiani, whose firm also works on behalf of the California Grain and Feed Association, challenged PRCA members to contribute to the CGFA's new political action committee. "Rendering has benefited from the CGFA relationship for years. However, I'm not aware of many of the folks participating in the PAC. So, I am proposing that every single major render contribute the $9,100 maximum. Just looking at the three major renderers, and a few smaller entities, that could be a $30,000 contribution. It helps CGFA and this helps rendering have a spot at the table. You know what, if you're not at the table, you're on the menu." **R**