

Market Report 2001

2001 Was a Struggle;

By Jim Rudbeck

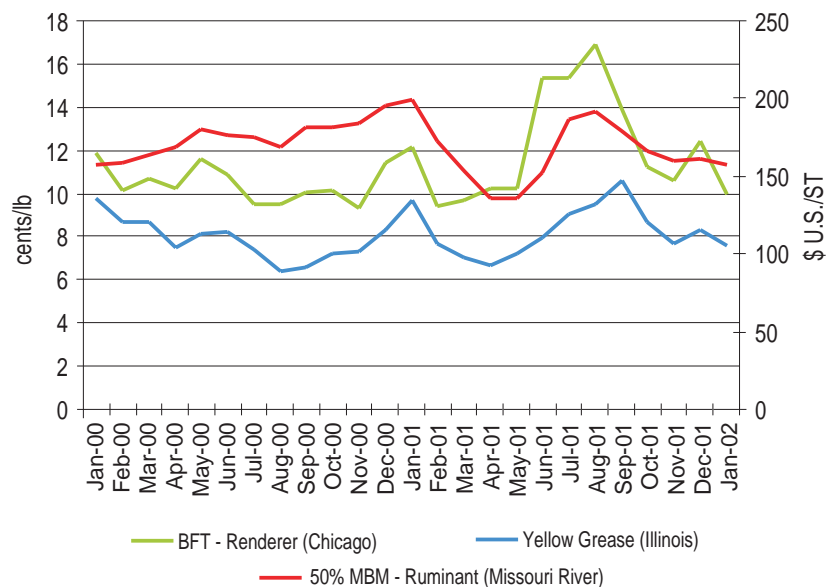
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Over the past several years, the North American rendering industry has struggled under the twin clouds of bovine spongiform encephalopathy (BSE) and burdensome supplies of fats, oils, and proteins in domestic and overseas markets. The results have been depressed market prices and dwindling exports of tallow. A bright spot is meat and bone meal exports that continue to increase.

Neither the United States nor Canada have confirmed a single case of BSE in native-born cattle, yet our industry is severely impacted by developments elsewhere in the world that have tarnished the image of rendered products and caused government regulators to react precipitously, that is, not based on available science, in prohibiting imports. The United States and Canada, beginning in 1986, began to erect a triple firewall against BSE that includes: specific country and product import prohibitions; intensive surveillance of animals in high-risk categories; and, a prohibition against the feeding of mammalian derived proteins, with some limited exceptions, to ruminant animals.

In response to a 1998 request by the U.S. Department of Agriculture (USDA) for a national BSE risk analysis, a Harvard Center for Risk Analysis study released in November 2001 said that, "...the U.S. is highly resistant to any introduction of BSE" and added that "...measures taken by the U.S. government and industry make the U.S. robust against the spread of BSE to animals or humans should it be introduced into this country." Following the study's release, the USDA and Department of Health and Human Services in February issued a series of comment papers and "advanced notices of proposed rule making" with the laudable goals of seeking to further lower the country's already low BSE risk. Unfortunately, this can also cause foreign governments to continue to pause in their recognition of this country's BSE status, thereby continuing uncertainties in international markets.

Chart 1. Domestic Tallow, Yellow Grease, and Meat and Bone Meal Prices, January 2000-January 2002



Source: The Jacobsen Archives: Feed Bulletin and Fats and Oils Bulletin

Will 2002 Fare Better?

The root cause for depressed prices over the past several years is that this country is growing more and more soybeans and not finding sufficient outlets for the oil and meal produced from these beans. Along with higher production of soybeans in South America and palm oil in Asia, this is contributing to an ever-growing glut in world fat, oils, and protein markets. Animal by-products trade is only at the margins in these huge commodity markets. For

two years. This past year, the averages for fats and greases as shown in Table 1 were stronger than for meals, but all were roughly 40 percent less than in 1998.

U.S. Production Declines in 2001

Unlike farmers, who can plant more or less each season, or livestock and poultry producers, who can breed fewer or greater numbers of animals or market animals at different

Table 1. Average Annual Prices of Selected Rendered Products, 1997-2001

Product/Location/Unit	1997	1998	1999	2000	2001	% Change
<i>Inedible Tallow and Greases</i>						
Packer Bleachable (CAF Chicago-cents/lbs.)	20.73	17.11	12.97	9.96	11.70	+17
Renderer Bleachable (CAF Chicago-cents/lbs.)	20.70	16.98	13.17	10.50	12.11	+15
Choice White Grease (FOB Central US-cents/lbs.)	18.46	13.69	11.40	9.45	10.52	+11
Yellow Grease (FOB Central US-cents/lbs.)	14.65	11.41	9.38	7.70	8.26	+7
Packer Bleachable (CAF Gulf-cents/lbs.)	20.79	17.81	13.22	9.92	11.67	+18
<i>Edible Tallow and Lard</i>						
Edible Tallow (CAF Chicago-cents/lbs.)	23.42	19.05	15.15	11.61	13.68	+18
Lard (CAF Chicago-cents/lbs.)	23.39	17.73	14.93	12.24	14.91	+22
Edible Tallow (CAF Gulf-cents/lbs.)	23.13	19.16	14.83	11.51	12.96	+13
<i>Protein Meals</i>						
Meat and Bone Meal, 50% Protein (Central US-\$/ton)	263.47	158.66	139.28	174.36	165.88	-5
Meat and Bone Meal, 50% Protein (Panhandle-\$/ton)	263.34	161.39	145.44	173.83	166.35	-4
Blood Meal, 85% Protein (Central US-\$/ton)	551.65	341.11	302.49	375.66	364.87	-3

Source: U.S. Department of Agriculture (USDA)/Agricultural Marketing Service (AMS), Market News Branch

example, global animal fat and grease trade is roughly 2.5 million metric tons per year, minuscule next to palm oil, which is approaching 17 million tons annually, and soybean oil, which is in the range of seven to eight million tons per year. Likewise, world trade in animal protein meals is less than 1.5 million tons per year as opposed to soybean meal that exceeds 40 million annually and fish meal that approaches four million.

Size alone is not the only difference between this country's rendering and the competing farming industries. Government support is another huge difference. This past year, government direct subsidies to soybean farmers was \$3 billion and to corn producers, \$4.4 billion. In addition, these industries have legislated check-off programs to support market promotion and research. By comparison, for 2001, we estimate that the value of rendered product production was \$2.7 billion. And, these returns all came from the market place.

Chart 1 shows the roller coaster ride of domestic tallow, yellow grease, and meat and bone meal prices over the past

weights, U.S. renderers have little control over their annual supply of raw materials. It comes basically from the country's annual slaughter on cattle, hogs and poultry. Roughly half the weight of all cattle and hogs and 30 percent of poultry slaughtered goes through the rendering process – around 50 billion pounds per year. The U.S. Census Bureau conducts a monthly industrial survey and reports production and consumption data. This is by no means a balanced U.S. supply and demand report, but it is the only data available to the industry.

For 2001, the Census reports that the production of rendered products was 18.2 billion pounds, a decrease of three percent from the year before. The data reported in Table 2 more or less correlates with that in Table 3, which indicates that cattle slaughter declined 2.4 percent the same year. The census survey results indicate that consumption of fats and greases increased just one percent; decreases in food uses for tallow and lard were off set by higher feed use

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Table 2. Production, Consumption, and Export of U.S. Rendered Products for 1997-2001 (in million lbs.)

Category	1997	1998	1999	2000	2001 ¹	% Change
Production						
Inedible Tallow and Greases	6,249.3	6,575.0	7,075.8	7,149.4	6,822.3	-5
Inedible Tallow	3,504.4	3,611.6	3,859.1	3,889.9	3,748.9	-4
Greases	2,706.6	2,927.6	3,171.8	3,221.2	3,176.8	-1
Edible Tallow	1,488.1	1,536.8	1,729.3	1,840.4	1,845.2	0
Lard ²	471.2	544.3	535.9	517.9	403.2	-22
<i>Sub-total</i>	8,208.6	8,656.1	9,341.0	9,507.7	9,070.7	-5
Meat Meal and Tankage	5,676.9	5,535.1	6,058.7	5,759.4	5,532.6	-4
Meat and Bone Meal	4,252.2	4,236.0	4,713.7	4,399.8	4,327.5	-2
Dry Rendered Tankage	1,353.5	1,260.6	1,285.1	1,311.5	1,194.5	-9
Feather Meal	684.6	807.2	836.1	810.5	779.3	-4
All Other Inedible Products ³	2,208.4	2,287.7	2,531.3	2,723.6	2,770.9	2
Total	16,778.5	17,286.1	18,767.1	18,801.2	18,153.5	-3
Consumption						
Inedible Tallow and Greases	3,398.6	3,442.2	3,727.7	3,661.9	3,656.5	0
Soap	245.0	227.7	229.3	147.9	⁴	
Feed	2,400.9	2,451.8	2,750.9	2,755.7	2,830.2	3
Inedible Tallow	822.7	748.5	960.1	908.4	935.4	3
Greases	1,578.1	1,703.3	1,790.7	1,847.3	1,891.7	2
Lubricants	83.6	90.3	100.5	102.5	⁴	
Fatty Acids	620.3	608.2	577.9	584.2	577.7	-1
Edible Tallow	642.7	439.0	428.5	456.1	532.9	17
for edible use	316.8	265.8	268.0	289.9	265.5	-8
for inedible use	325.9	173.2	160.3	166.2	267.4	61
Lard	380.8	412.8	388.5	343.9	299.8	-13
for edible use	284.0	299.7	260.5	249.3	230.4	-8
for inedible use	96.8	113.1	128.0	94.7	69.4	-27
Total	4,422.1	4,294.0	4,544.7	4,461.9	4,489.2	1
Exports						
Inedible Tallow	1,684.3	2,295.8	1,930.8	1,740.3	1,335.1	-23
Yellow Grease	350.4	463.4	404.4	402.5	406.3	1
Other Inedible Fats and Oils	234.4	377.0	504.3	461.9	399.1	-16
Edible Tallow	184.9	246.6	317.0	244.2	364.7	49
Lard	90.4	131.4	147.5	174.0	103.4	-41
<i>Sub-total</i>	2,544.4	3,514.2	3,304.0	3,022.9	2,608.6	-14
Meat and Bone Meal	641.4	689.1	841.5	958.7	1,029.9	7
Feather Meal	78.9	67.1	46.4	54.9	92.9	69
<i>Sub-total</i>	720.3	756.2	887.9	1,013.6	1,122.8	11
Bone and Bone products	40.9	45.3	58.4	78.3	81.0	15
Total, All Rendered Products	3,305.6	4,315.7	4,250.3	4,114.8	3,812.4	-7

Sources: U.S. Census Bureau of the Census, M311K series for Fat and Oils: Production, Consumption and Stocks. U.S. Census Bureau for exports.

1. Preliminary data compiled by summing monthly data from M311K reports. Subject to change in final annual report.

2. Not included in Census report, estimated by adding reported lard consumption and exports.

3. Includes poultry fat and by-product meal, blood meal, and raw products for pet food.

4. Withheld to avoid disclosing data for individual companies.

Table 3. U.S. Annual Commercial Livestock Slaughter, 1997-2001 and Forecast for 2002

Specie/Unit	1997	1998	1999	2000	2001	% Change 01/00	Forecast 2002
Cattle – thousand head	36,316	35,465	36,150	36,248	35,364	-2.4	33,910
Hogs – thousand head	91,961	101,029	101,554	97,976	97,943	0	97,550
Broilers and Turkeys – million head	8,026	8,111	8,377	8,529	8,641	+1.3	8,843

Source: USDA/Economic Research Service

of fats. The Census Bureau discontinued reporting monthly tallow moving into soap making because too few companies are reporting under this category. U.S. consumption of protein meals is not reported by the Census, but a calculation of production less exports would indicate that apparent consumption declined four percent in 2001.

Although not reported by the U.S. Census Bureau, as a result of having to live with sustained low prices, renderers are finding some new uses for their products. When fuel costs have been high, renderers and allied industries have substituted tallow and yellow grease for natural gas and fuel oil as burner fuels. In January 2002, the USDA announced that animal fats and oils and yellow grease would be included in the department's bioenergy program, a first for animal by-products. Previously, the program only included vegetable oils. This is a short-term program set to expire in September 2002. Hopefully, it will set a precedent to include animal fats and oils and yellow grease in other government energy programs.

Overall Exports Continue to Slide

The American rendering industry is export directed – over 20 percent of annual production goes overseas. However, largely due to shifting competitive factors and the ever-present specter of BSE related regulations, exports of fats and greases have been decreasing while those of protein meals are on the rise. In 2001, meal exports rose 11 percent, while fat and grease shipments fell 14 percent. Overall, U.S. exports declined seven percent, which follows on a decline of four percent a year earlier (see Table 2 for product details).

Again in 2001, U.S. exports of fats and greases were under extreme competitive pressures from palm oil and from increased exports by Australia and New Zealand to Asian markets. As an example, Australian exports were a record 450,000 tons, up 17 percent from 2000. Globally, U.S. exports declined 14 percent from 2000 following a decrease of eight

percent that year. Inedible tallow has been the hardest hit by increased competition, mainly in soap making and other industrial uses. Exports of yellow grease, which competes well with palm oil in animal feed, were unchanged in 2001. In the category "other inedible fats and greases," exports weakened last year. For both edible tallow and lard, Mexico is by far the major market. In 2001, export of lard to Mexico declined while those of edible tallow increased, but the combined total rose 36 percent.

Looking at Table 4 – U.S. Export Customers by Products – inedible tallow exports in 2001 were lower around the globe. The decline in 2001 was 23 percent; since 1998, 41 percent. This corresponds to a period of rapid increases in palm oil exports. There were several notable exceptions in 2001, such as the European Union (EU). Early in the year, EU buyers turned to the overseas markets due to uncertain domestic supplies when both BSE and foot and mouth disease were reported in new countries. Russia also turned to the United States because of reduced supplies from the EU. Colombia, Guatemala, and Venezuela returned to more historic import levels from the United States in 2001.

Overall yellow grease exports have been surprisingly steady over the past three years. In 2001, a large increase to the Dominican Republic offset losses elsewhere. Shipments to Venezuela, the United States' second largest market after Mexico, declined nine percent. The "other inedible fats and oils" category in Table 4 mainly includes feed fats, and under it, there was a 100 percent decline in shipments to Venezuela in 2001 due to a product reclassification by the Venezuelan government.

U.S. Meal Exports Do Better

This past year marked a major turning point in the trade of animal protein meals, and despite a 40 percent (over 650,000 tons) decline in the level of world trade, U.S. exports rose 11 percent. Meat and bone meal exports were seven percent higher while those of feather meal doubled.

The initial reason for the huge decline in world trade was that on January 1, 2001, the EU temporarily

banned both the domestic feeding and exports of animal meals due to BSE cases in additional EU and neighboring countries. The EU has had a 40 percent share of world trade in recent years. In addition, as a reaction to the new BSE cases, many of EU's neighboring markets, such as Poland, also stopped imports, not just from the EU, but from all countries. Since there has been no BSE diagnosed in native-born cattle in the United States or Canada, application of these restrictive measures to imports of meat and bone meal from the United States or Canada is not

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scientifically justifiable, but that has not stopped their imposition.

In September, the first case of BSE in a native-born animal in a non-European country was confirmed in Japan. Japan reacted by suspending meat and bone meal imports, and again from all countries, regardless of their BSE status. China followed by imposing a 13 percent value added tax (VAT) that slowed that country's imports of animal meals. It should be noted that Japan had significantly increased its imports of EU meat and bone meal over the past several years, while China had not.

As a result of this contraction in trade opportunities, competition intensified in remaining markets. Indonesia reacted by upping imports for the third consecutive year as its poultry and fish production rebounded with a strengthening economy. As a result, U.S. exports to Indonesia doubled. The U.S. market share also rose to over 45 percent from 32 percent in 2000. In 2000, prior to their export suspension, the EU had tripled sales to Indonesia. Indonesia has emerged as the world's largest importer of animal proteins, over 350,000 tons in 2001, and is now the

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Table 4. U.S. Export Customers by Product (in metric tons), 1997-2001

Product/Country	1997	1998	1999	2000	2001	2001/2000
Inedible Tallow						
Mexico	192,365	273,472	213,872	200,299	175,940	-12.2
Turkey	141,149	107,768	93,701	117,073	88,399	-24.5
EU-15	115,342	101,682	66,083	67,726	72,163	+6.6
Guatemala	28,095	46,950	54,432	42,818	47,232	+10.3
Colombia	37,685	57,674	53,323	20,448	27,622	+35.1
Nigeria	4,000	7,298	26,853	30,500	25,539	-16.3
Japan	37,663	35,590	37,320	28,861	21,386	-25.9
Russian Federation	0	4,499	26,638	16,564	20,386	+23.1
Dominican Republic	27,722	25,254	22,376	23,284	19,631	-15.7
Venezuela	15,465	16,593	14,987	10,055	13,485	+34.1
El Salvador	18,229	17,879	26,150	25,372	11,159	-56.0
Honduras	14,022	21,146	21,849	18,146	10,968	-39.6
Korea; Republic of	4,862	19,691	56,434	51,252	9,000	-82.4
Nicaragua	10,025	9,818	4,699	8,898	8,999	+1.1
Canada	18,807	16,633	16,361	10,552	8,332	-21.0
Peru	0	8,699	1,774	500	7,343	+1,370.0
China, Peoples Republic of	30	9,499	30,726	19,093	3,687	-80.7
<i>Total All Countries</i>	764,082	1,028,071	875,799	789,399	605,586	-23.3
Yellow Grease						
Mexico	35,535	52,195	57,797	67,018	71,901	+7.3
Venezuela	42,135	41,646	33,704	36,513	33,396	-8.5
Dominican Republic	6,112	394	107	3,510	14,901	+304.5
Canada	15,862	11,299	11,740	12,043	12,623	+4.8
EU-15	9,084	35,352	20,748	15,045	7,924	-47.3
El Salvador	12,938	13,254	10,751	10,631	6,648	-37.5
Panama	2,301	2,644	96	10,095	5,069	-49.8
Peru	4	1,004	0	39	5,061	+12,875.0
Guatemala	2,371	4,269	2,578	5,979	5,060	-15.4
China; Peoples Republic of	993	2,454	12,959	8,209	4,792	-41.6
Korea; Republic of	19,926	27,874	21,292	7,735	2,722	-64.8
<i>Total All Countries</i>	158,954	210,265	183,421	182,573	184,310	+1.0
Other Inedible Fats and Oils						
Mexico	34,471	31,518	25,196	32,120	36,692	+14.2
Israel	9,469	28,853	37,407	31,231	34,346	+10.0
Canada	22,506	24,878	29,270	24,990	30,296	+21.2
Dominican Republic	4,330	10,411	22,552	21,761	23,483	+7.9
EU-15	7,803	24,860	31,761	6,866	10,102	+47.1
Venezuela	8,338	12,472	26,638	44,957	135	-99.7
<i>Total All Countries</i>	106,306	171,022	228,857	209,509	181,042	-13.6
Edible Tallow						
Mexico	49,940	52,168	46,269	52,594	104,682	+99.0
Canada	19,570	20,811	24,020	23,719	23,876	+0.7
Korea; Republic of	6,719	12,019	28,442	14,622	12,857	-12.0
China; Peoples Republic of	1,644	3,392	7,949	7,396	9,235	+24.9
Japan	0	0	1,801	5,128	7,762	+51.3
<i>Total All Countries</i>	83,642	111,799	143,795	110,764	165,408	+49.3
Lard						
Mexico	31,501	30,134	31,984	45,688	29,281	-35.9
China; Peoples Republic of	2	674	6,993	10,593	75	-99.3
Canada	12,498	12,302	11,928	9,270	9,270	0.0
<i>Total All Countries</i>	53,729	59,412	66,867	78,930	46,902	-40.6
Meat and Bone Meal						
Indonesia	74,894	22,017	80,897	51,745	108,923	+110.5
Mexico	65,682	98,136	94,106	80,851	78,830	-2.5
Egypt	521	3,101	15,325	36,895	73,577	+99.4
China; Peoples Republic of	33,833	46,144	60,004	97,201	59,404	-38.9
Canada	40,789	47,909	41,077	41,688	45,286	+8.6
Thailand	24,194	17,805	22,042	23,023	31,659	+37.5
Bangladesh	0	0	0	40	14,840	+37,000
Philippines	5,864	15,124	20,081	31,087	13,547	-56.4
Venezuela	2	3,221	6,391	29,432	13,380	-54.5
<i>Total All Countries</i>	290,914	312,522	381,493	434,881	467,170	+7.4
Feather Meal						
Indonesia	23,527	7,189	11,254	11,568	23,724	+105.1
<i>Total All Countries</i>	35,778	30,425	21,029	24,922	42,124	+69.0
Grand Total	1,515,457	1,957,490	1,927,618	1,866,510	1,729,299	-7.3

Source: U.S. Census Bureau. Note: Exports to Hong Kong included with the Peoples Republic of China.

United States' number one market (see Table 4).

Indonesia eclipsed China for the number one position. Last year, China imposed a 13 percent VAT on meat and bone meal, but none on competing imported fish meal. It further adopted a policy that favored domestically crushed soybean meal in poultry and swine rations. As a result, U.S. exports fell 39 percent in 2001, but as the National Renderers Association (NRA) has also targeted aqua-feeds, the U.S. market share rose from 66 percent in 2000 to 75 percent. Also in Asia, U.S. exports increased 38

percent to Thailand. In that country, the NRA has also focused promotional efforts on the growing aquaculture market.

U.S. exports of meal doubled to Egypt in 2001. Egypt had been a traditional EU market, but in 1999 Egyptian officials began to be concerned about European materials when dioxin was found in feeds. Well before then, the NRA's regional director had been promoting U.S. meals in the Egyptian market. The U.S. industry also made adjustments to local market conditions. From a less than one percent market share in 1997, by 2001, the U.S. share was nearly 100 percent.

The Outlook for 2002

At the beginning of this article, it was said that the North American rendering industry has been struggling under the twin clouds of BSE and burdensome fats, oils, and protein supplies in the home market and overseas over the past several years. The early signs are for much of the same in 2002, although there are positive signs that meat and bone meal trade was picking up.

Concerning the ongoing implications of BSE, although neither the United States nor Canada has diagnosed BSE in native-born cattle,

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Table 5. U.S. Exports of Rendered Products To Regions, Annual 1997-2001 (in metric tons)

Export Region	1997	1998	1999	2000	2001	% total
Latin America						
Mexico	409,658	537,623	469,224	478,887	498,589	
Central America	101,894	154,792	162,885	155,429	129,599	
Andean Region	103,903	135,763	140,795	141,724	91,474	
Carribean	63,206	73,683	79,148	80,851	83,824	
Others	7,199	74,479	8,037	15,027	16,936	
<i>Subtotal</i>	685,860	976,340	860,089	871,918	820,422	47
Europe						
EU	133,471	173,884	128,685	90,783	92,028	
Others	2,349	11,323	36,786	18,728	24,041	
<i>Subtotal</i>	135,820	185,207	165,471	109,511	116,069	7
Middle East						
Turkey	141,149	111,640	102,584	117,167	88,399	
Others	20,285	45,516	59,045	51,199	44,792	
<i>Subtotal</i>	161,434	157,156	161,629	168,366	133,191	8
Asia, Near East	506	34,897	5,871	18,155	15,684	1
Africa						
Egypt	17,548	26,560	37,927	50,192	78,139	
Other North Africa	28,490	47,173	12,425	10,033	4,000	
Others	17,704	43,248	37,816	35,534	29,027	
<i>Subtotal</i>	63,742	116,981	88,168	95,759	111,166	6
Asia, Far East						
Indonesia	99,837	29,206	92,151	63,313	132,647	
China; Peoples Republic of	38,414	65,325	124,851	143,289	79,970	
Japan	50,882	48,482	46,618	43,400	32,959	
Korea; Republic of	36,474	63,277	113,117	77,269	27,703	
Others	77,647	101,699	107,134	105,794	77,591	
<i>Subtotal</i>	303,254	307,989	483,871	433,065	350,870	20
Canada	140,042	141,840	141,830	132,397	141,514	8
Total	1,515,457	1,957,490	1,927,618	1,886,510	1,729,299	
Value Total - million	\$697.8	\$811.4	\$676.0	\$554.5	\$544.5	
Average Unit Value	\$460/mt	\$415/mt	\$351/mt	\$294/mt	\$315/mt	

Source: U.S. Census Bureau

Note: Exports to Hong Kong are included with the Peoples Republic of China. Andean region is Venezuela and Colombia.

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our product's image remains tarnished. The application of restrictive measures to imports from either country is not scientifically justifiable, but that has not stopped their implementation. The NRA will continue to make our case and we have asked for support from our governments. But as many other governments are tempted to adopt the EU's so-called "precautionary principle," which disregards scientific facts, we face an ongoing challenge.

A year ago we wrote, "...early indications are that the Argentine and Brazilian near-term soybean crops will increase and that farmers in the United States intend to increase soybean acreage again. U.S. soybean production will once again largely depend on the weather." Like a broken record, we can say the same again this year about the fats and oils supply outlook. On a more positive note, there are market reports that China has stepped up meat and bone meal purchases. The government has equalized the VAT between meat and fish meals and the South American fish catch is reduced, thereby reducing competitive supplies. This could also be a boost to sales of U.S. meat and bone meal elsewhere. ❖

WEB PAGE ADDRESSES

Association or Agency	Web Address
American Feed Industry Association	www.afia.org
American Meat Institute	www.meatami.org
Animal and Plant Health Inspection Services	www.aphis.usda.gov
Animal Protein Producers Industry	www.animalprotein.org
Association of American Feed Control Officials	www.aafco.org
Australian Renderers Association	www.ausrenderers.com.au
California Grain and Feed Association	www.cgfa.org
Center for Veterinary Medicine	www.fda.gov/cvm
Fats and Proteins Research Foundation	www.fprf.org
Food and Drug Administration	www.fda.gov
Food Safety and Inspection Service	www.fsis.usda.gov
National Biodiesel Board	www.biodiesel.org
National Cattlemen's Beef Association	www.beef.org
National Renderers Association	www.renderers.org
Occupational Safety and Health Administration	www.osha.gov
Pacific Egg and Poultry Association	www.pacificegg.org
Pet Food Institute	www.petfoodinstitute.org
Render Magazine	www.rendermagazine.com
U.S. Department of Agriculture	www.usda.gov
U.S. Poultry and Egg Association	www.poultryegg.org