

**Voluntary Report** – Voluntary - Public Distribution

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**Report Name:** Forage Market Update

**Country:** Japan

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**Report Category:** Agricultural Situation, Grain and Feed

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**Report Highlights:**

This report replaces and corrects a report published on November 10, 2022 with the same title. This report correctly attributes the conversion factors for future forage production and dry matter to FAS/Tokyo and updates the consumption analysis with current data. Japan imports approximately 2.6 million metric tons of forage annually, primarily from the United States, Australia, China, and Canada. The Ministry of Agriculture, Forestry and Fisheries is encouraging increased domestic forage production with support payments but a limited labor supply constrains production. FAS/Tokyo forecasts forage demand to weaken slightly over the next two years due to a projected decrease in dairy herds. Japanese beef cattle producers continue to seek new rice straw suppliers to ensure a predictable and steady supply. China is currently the sole foreign supplier of rice straw with market access.

## Terminology and Abbreviations

Marketing Year (MY): May to April

Japanese Fiscal Year (JFY): From April 1 to March 31.

Forage: Plants and plant-based products for feeding cattle, including fresh grass, hay, straw, and silage.

Imported Forage: HS1214 (breakdown below) and HS1213.

HS Code	Description
HS1213	Cereal straw and husks, unprepared, whether or not chopped, ground, pressed or in the form of pellets.
HS121410	Alfalfa meal and pellets.
HS121490010	Swedes, mangolds, fodder roots, hay, clover, sainfoin, forage kale, lupines, vetches and similar forage products, in cube.
HS121490090	Swedes, mangolds, fodder roots, hay, clover, sainfoin, forage kale, lupines, vetches and similar forage products, excluding those in cube.

Source: Trade Data Monitor

## Production

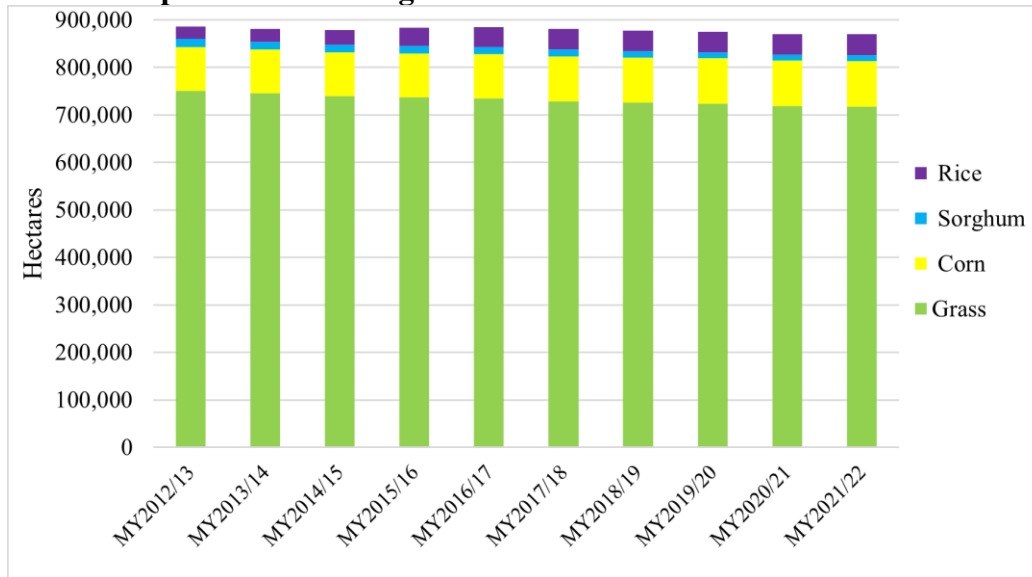
In Marketing Year (MY) 2021/22, Japan produced 24 million metric tons of fresh forage grass, equivalent to approximately 4.8 million tons in dried matter (DM) volume as hay.<sup>1</sup> On Honshu, Japan's main island, producers begin to harvest fresh grass in May. In Hokkaido, the large island to the north of Honshu, the harvest begins in June. Producers harvest grasses two to three times a year, with the final harvests typically in September and October. Forage producers mainly cultivate grasses from the poaceae family, such as ryegrass, timothy, and orchard grasses. Japan's acidic soils limit production of legumes, including alfalfa.

Labor shortages limit the ability for producers to meet domestic demand, which has resulted in reduced planted forage grass acreage, see Chart 1. Cattle farmers produce most forage in Japan, but herd size expansion has outpaced the ability for many producers to remain self-sufficient for forage with the land, labor, and equipment at their disposal. To meet demand, a growing forage production industry, including specialized producers, contractors, and total mixed ration centers, is on the rise. Still, domestic forage is typically distributed and consumed locally or within the region of production. Hokkaido produces roughly 60 percent of Japan's forage. With less land suitable for forage production, cattle farmers outside of Hokkaido rely more on purchased forages, mainly imported.

Rice farmers are increasingly converting acres to forage grasses and whole crop corn, sorghum, and rice silages in their paddy fields to take advantage of Ministry of Agriculture, Forestry and Fisheries (MAFF) support payments (see Policy section). Paddy field production now accounts for 16 percent of total forage production, with increases in whole crop corn and rice silage, see Chart 1. FAS/Tokyo forecasts increasing silage acres to backstop declining grass forage production.

<sup>1</sup> This paper uses the DM conversion factor of 0.2 to convert volumes from fresh grass to hay.

**Chart 1. Japan Planted Forage Hectares**



Source: MAFF

Corn, Sorghum, and Rice are processed into and consumed mainly as whole crop silage.

Japan produced 8.1 million tons of rice straw as a byproduct of rice production in 2020, MAFF estimates that cattle feeders used only nine percent, or 719,000 tons, as feed. Rice growers plow into the field or burn most rice straw and use limited amounts for cattle bedding and compost.

In response to surging prices and logistical disruptions of imported hay, MAFF announced increased support payments for producers and distributors to increase forage production and improve utilization of rice straw for feed (see Policy section). FAS/Tokyo expects labor shortages to remain a hurdle for increasing forage production and distribution.

### Consumption

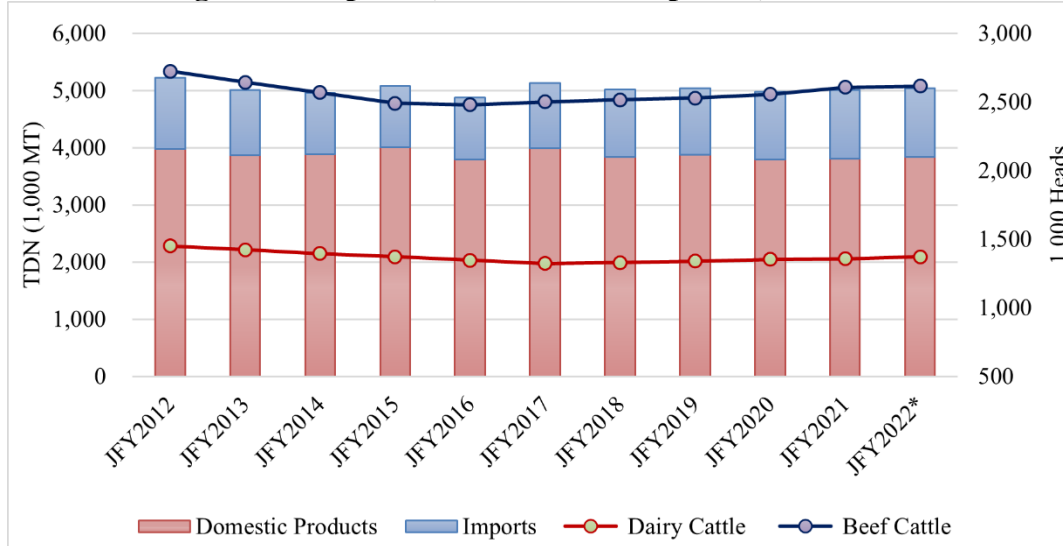
FAS/Tokyo forecasts MY2022/23 forage demand to decrease slightly based on a projected reduction in dairy cattle inventories. Since the latter half of 2022, dairy farmers have been reducing milk production due to sluggish demand. MAFF has also announced a support payment program for dairy farmers that ship low performing cattle for slaughter ahead of schedule in 2023 to curb dairy production.

MAFF estimates that in Japan Fiscal Year (JFY)<sup>2</sup> 2021, cattle feeders fed 5 million tons of forage on a total digestible nutrients (TDN) basis, of which domestic product accounted for 76 percent, see Chart 2.

MAFF estimates that in 2020, cattle feeders fed 945,000 MT of rice straw, 75 percent domestic and 25 percent imported, see Chart 3. Beef cattle consume almost all rice straw in Japan and rice straw demand tracks closely with beef cattle inventories. Unless utilization of domestic rice straw improves, FAS/Tokyo forecasts demand for imports to remain strong.

<sup>2</sup> Japan Fiscal Year (JFY) runs from April 1 to March 31.

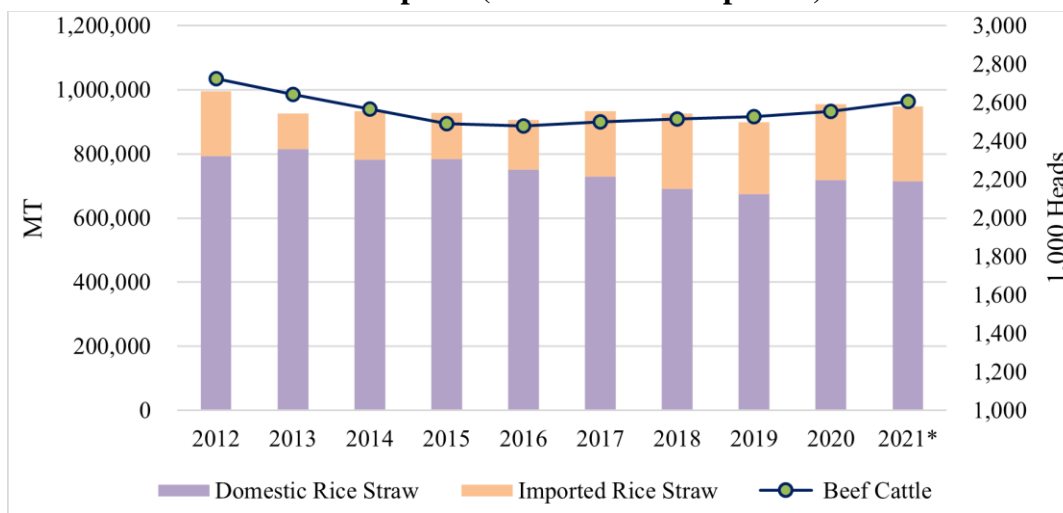
**Chart 2. Forage Consumption (Domestic and Imported) and Cattle Inventories**



Source: MAFF (Cattle inventories updated on February 1 of each year.)

\*FAS/Tokyo estimate for JFY2022 Consumption

**Chart 3. Rice Straw Consumption (Domestic and Imported) and Beef Cattle Inventories**



Source: MAFF (Cattle inventories updated on February 1 of each year); Trade Data Monitor

\*FAS/Tokyo estimate for domestic rice straw consumption in 2021.

## Trade

Forage imports have been stable since MY2018/19. In MY2021/22, Japan imported approximately 2.6 million tons of forage (HS1214 and HS1213), of which hay and hay cube products accounted for 83 percent, see Table 1. Imports of cereal straw and husks have increased over the last decade, reflecting strong demand for rice straw. According to MAFF Plant Protection Station, timothy hay and oats hay each accounted for 18 percent (460,000 MT each) of imports, followed by alfalfa at 15 percent (390,000 MT), sudangrass at 11 percent (274,000 MT), rice straw at 9 percent (234,000 MT), ryegrass at 6 percent (158,000MT), and wheat straw at 5 percent (117,000 MT) in 2021. Bermuda hay and straw, klein grass, and fescue straw accounted for the remaining tonnage.

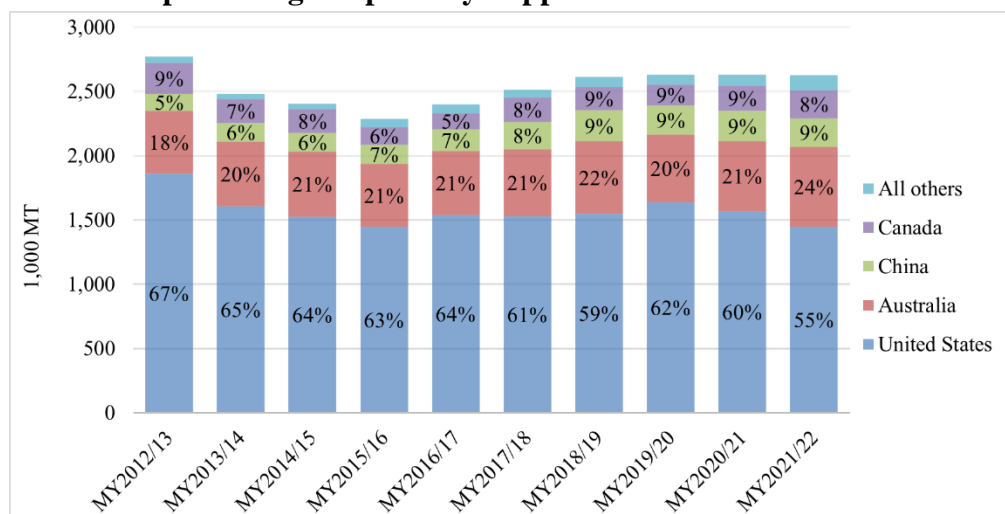
**Table 1. Japan Forage Imports (MT)**

	Hay HS121490090	Hay Cube HS121490010	Alfalfa Meal and Pellets HS121410	Cereal Straw and Husks HS1213	Total HS1214 and HS1213
MY2012/13	2,173,151	216,795	104,927	278,305	2,773,178
MY2013/14	1,933,936	187,715	79,399	278,978	2,480,028
MY2014/15	1,865,601	179,399	87,269	270,896	2,403,165
MY2015/16	1,781,872	158,185	75,300	271,040	2,286,397
MY2016/17	1,881,859	152,990	70,563	294,477	2,399,889
MY2017/18	1,946,535	155,079	81,016	332,770	2,515,400
MY2018/19	2,032,787	147,435	84,381	348,533	2,613,136
MY2019/20	2,065,310	145,932	75,828	344,710	2,631,780
MY2020/21	2,044,462	135,008	80,313	373,311	2,633,094
MY2021/22	2,061,825	132,196	78,101	354,599	2,626,721

Source: Trade Data Monitor

The United States, Australia, China, and Canada are the primary forage suppliers to Japan, accounting for 96 percent of imports in MY2021/22, see Chart 4. U.S. market share has declined from 69 percent in MY2012/13 to 55 percent in MY2021/22 on a metric ton basis, as prices for U.S. forage products have steadily increased. In recent years, prices for Japanese importers jumped further as drought in the United States limited supply, the Japanese Yen weakened against the U.S. dollar, and container shipments face ongoing logistical challenges.

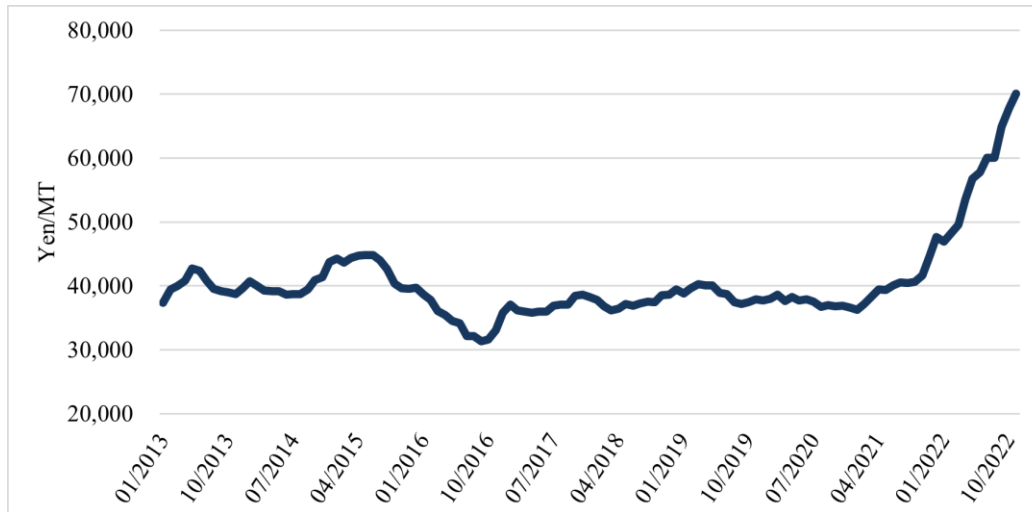
The United States is the leading supplier of alfalfa hay, klein grass, sudangrass, bermudagrass, ryegrass and fescue straw. Australia is the primary supplier of oats hay and wheat straw. China is the sole supplier of rice straw. The United States and Canada are leading suppliers of timothy hay, see Table 2 at the end of this report.

**Chart 4. Japan Forage Imports by Suppliers and Market Share**

Source: Trade Data Monitor

Despite efforts by importers to diversify suppliers and products, the price of imported forage from all sources continues to surge, hitting record highs in November 2022 at 70,061 yen/ton, 57 percent higher than one year ago, see Chart 5.

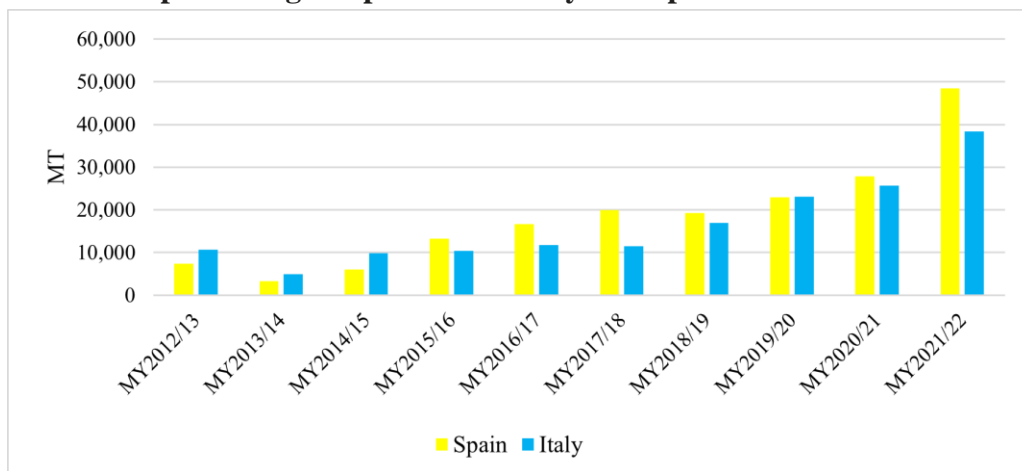
**Chart 5. Japan Forage Imports Monthly CIF Unit Prices**



Source: Trade Data Monitor

Forage imports from Italy and Spain have steadily increased over the last decade due to price competitiveness, see Charts 6 and 7. In 2021, Japan imported alfalfa hay and ryegrass from Spain and Italy. Importers also increased purchases from New Zealand, which also supplies alfalfa and ryegrass. According to industry reports, demand for imported corn silage<sup>3</sup> has increased as importers seek reasonably priced substitutes for imported hay and feed grains. Japan imports corn silage primarily from Spain, Canada, and Vietnam.

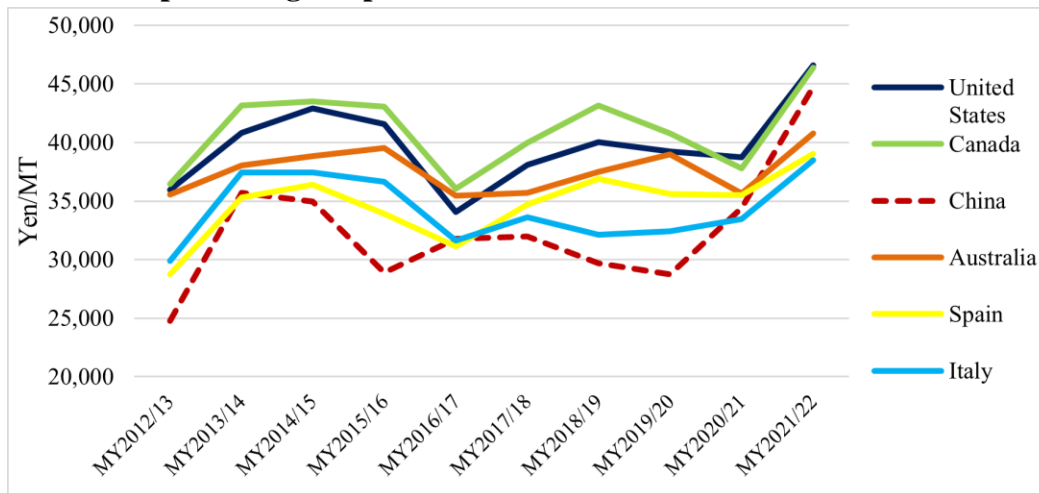
**Chart 6. Japan Forage Imports from Italy and Spain**



Source: Trade Data Monitor

<sup>3</sup> Japan Customs classifies corn silage into HS121490.

**Chart 7. Japan Forage Import CIF Unit Prices**



Source: Trade Data Monitor

### Rice Straw

China is the only rice straw supplier with market access in Japan ([JA2020-0078](#)). However, Japan has occasionally suspended imports of Chinese rice straw due to animal disease outbreaks in China, leading to concern among Japanese beef cattle farmers about the reliability of supply. Japan requires rice straw imports from China be heat-treated prior to export. Of the 19 MAFF-approved heat treatment facilities 16 are in Dalian and these facilities were occasionally not able to operate under COVID-19 restrictions, creating supply chain concerns for Japanese importers and cattle feeders. In response, MAFF encouraged rice growers and forage suppliers to work together to improve utilization of domestic rice straw for feed (see Policy section). Beef cattle farmers will substitute rice straw with ryegrass, fescue straw, and wheat straw, but have a strong preference for rice straw.

### **Policy**

#### Support to Increase Forage Production and Improve Domestic Supply Chains

MAFF provides, under the “Direct Payments for Rice Paddy Utilization” ([JA2021-0031](#)) program, support payments to farmers who shift production from table rice to other crops, including forage crops such as forage grass, whole crop silage corn, whole crop silage sorghum, and whole crop silage rice. In JFY2022, MAFF paid 350,000 yen (\$2,700)<sup>4</sup> per hectare for forage production in paddy fields.

As part of the Government of Japan’s policy to improve food security, MAFF will increase support for forage production and domestic supply chain improvement for domestic forages. Starting in JFY2023, MAFF will provide an additional 120,000 yen (\$930) per hectare to forage producers and contractors for expansion of forage production and collection of rice straw when they have sales contracts with livestock farmers of at least five years. To improve and establish supply chains of domestically produced rice straw and hay, MAFF will provide support payments to domestic forage distributors and suppliers to cover a part of the transportation costs to livestock farmers. Also beginning in JFY2023, MAFF will provide 7,800 yen (\$60) per metric ton to farmers who increase production of and have sales contracts of at least three years for whole crop silage corn, whole crop silage sorghum, and forage grasses.

<sup>4</sup> 129yen/USD

**Table 2. Japan Hay and Straw Imports (MT)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Alfalfa Hay</b>									
United States	421,675	391,003	372,972	378,435	399,307	394,864	413,840	398,477	378,609
Australia	1,118	866	1,979	981	388	228	191	200	200
Canada	808	5,084	6,349	4,028	3,824	5,316	2,238	3,935	5,132
Spain	73	319	2,512	878	616	316	645	1,246	2,529
New Zealand	1	0	0	0	24	1	145	48	254
All others	0	34	677	0	25	249	146	49	209
<b>Total</b>	<b>423,673</b>	<b>397,306</b>	<b>384,488</b>	<b>384,322</b>	<b>404,184</b>	<b>400,974</b>	<b>417,060</b>	<b>403,907</b>	<b>386,933</b>
<b>Oats Hay</b>									
Australia	386,149	399,937	393,307	385,414	428,173	458,921	403,198	390,883	457,050
United States	7,760	3,783	1,591	1,257	2,067	1,622	888	2,075	1,838
All others	709	347	249	131	490	189	596	43	126
<b>Total</b>	<b>394,618</b>	<b>404,067</b>	<b>395,147</b>	<b>386,802</b>	<b>430,730</b>	<b>460,732</b>	<b>404,682</b>	<b>393,011</b>	<b>459,015</b>
<b>Timothy Hay</b>									
United States	368,688	282,715	279,524	328,708	336,183	297,794	349,543	372,395	327,529
Canada	118,482	96,477	92,378	78,525	101,618	116,229	103,389	107,010	128,947
All others	7	0	0	0	0	0	0	63	42
<b>Total</b>	<b>487,177</b>	<b>379,192</b>	<b>371,902</b>	<b>407,232</b>	<b>437,800</b>	<b>414,022</b>	<b>452,932</b>	<b>479,405</b>	<b>456,476</b>
<b>Sudangrass</b>									
United States	309,090	300,134	282,782	256,672	263,222	269,499	297,322	294,510	274,206
Spain	61	597	1,491	510	409	46	0	0	0
All others	6,641	712	0	0	196	0	0	0	0
<b>Total</b>	<b>315,793</b>	<b>301,443</b>	<b>284,273</b>	<b>257,183</b>	<b>263,826</b>	<b>269,545</b>	<b>297,322</b>	<b>294,510</b>	<b>274,206</b>
<b>Ryegrass</b>									
United States	178,487	166,320	169,083	182,409	161,908	165,092	177,679	163,305	150,253
New Zealand	0	0	0	0	0	0	0	3,664	2,421
Spain	0	20	119	218	403	1,111	1,416	2,833	5,182
All Others	20	21	45	20	44	381	952	1,193	404
<b>Total</b>	<b>178,507</b>	<b>166,362</b>	<b>169,245</b>	<b>182,647</b>	<b>162,355</b>	<b>166,584</b>	<b>180,050</b>	<b>170,996</b>	<b>158,261</b>
<b>Rice Straw</b>									
China	110,547	150,992	144,165	155,776	204,537	235,708	224,354	217,920	233,655

Source: MAFF Plant Protection Station, Trade Data Monitor.

Ryegrass includes Italian ryegrass.

**Attachments:**

No Attachments.