USDA Foreign Agricultural Service
GAIN Report
Global Agricultural Information Network

Voluntary _ Public

Date: 7/28/2015
GAIN Report Number: SP1520

Spain

Post: Madrid

Spanish Fodder Consolidates its Presence in Export Markets

Report Categories:
Grain and Feed

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Report Highlights:

Spain's dried fodder production forecast for MY 2015/16 is expected to reach 1.5 million MT. Favorable prices for dried fodder along with low corn prices may have triggered the marginal increase in area planted. Warmer than usual temperatures since the beginning of May, may have benefited irrigated alfalfa yields thanks to a faster dry out after harvest. Third-country exports, particularly to the United Arab Emirates and China, continue their steady growth.

Disclaimer: This report presents the situation for forage production and exports in Spain. This report contains the views of the authors and does not reflect the official views of the U.S. Department of Agriculture (USDA). The data are not official USDA data.

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Abbreviations used in this report:

EC	European Commission
EU	European Union
FAS	Foreign Agricultural Service
GTA	Global Trade Atlas
CAP	Common Agricultural Policy
SPS	Single Payment Scheme
BP	Basic Payment
EFA	Ecological Focus Area
MAGRAMA	Ministry of Agriculture, Food and Environment
ESYRCE	Crop surface area and yields survey
AEFA	National Dried Alfalfa Producers Association
AQSIQ	China's General Administration of Quality Supervision, Inspection and Quarantine

HS Codes: Harmonized System codes for commodity classification used to calculate trade data.

Harmonized Codes for Dehydrated Fodder:

1214	Rutabagas (Swedes), mangolds, fodder roots, hay alfalfa (lucerne), clover, sainfoin, forage kale, lupines, vetches and similar forage products, whether or not in the form of pellets.
121410	Alfalfa (Lucerne) meal and pellets; dehydrated, sun-cured and other.

121490	Hay (including alfalfa, whether or not double compressed, and Timothy); clover; and other.

MS	EU Member State(s)
MT	Metric ton (1,000 kg)
MY	Marketing year (May/April)
PS&D	Production, Supply and Demand
Ha	Hectares
ºC	Celsius degrees
N/A	Not Available

ADF	Acid Detergent Fiber
NDF	Neutral Detergent Fiber
RFV	Relative Feed Value

Area and Production

In MY 2014/15, the total area planted to fodder crops declined compared to previous season. For MY2015/16 a rebound is anticipated at the expenses of lower corn plantings. With better margins compared to corn, the implementation of the new CAP reform, along with the steady growth of exports, are seen as the key drivers for the tepid area increase.

Table 1. Area Planted to Dried Fodder under Contracts with Dehydrating Plants (Ha)[1]

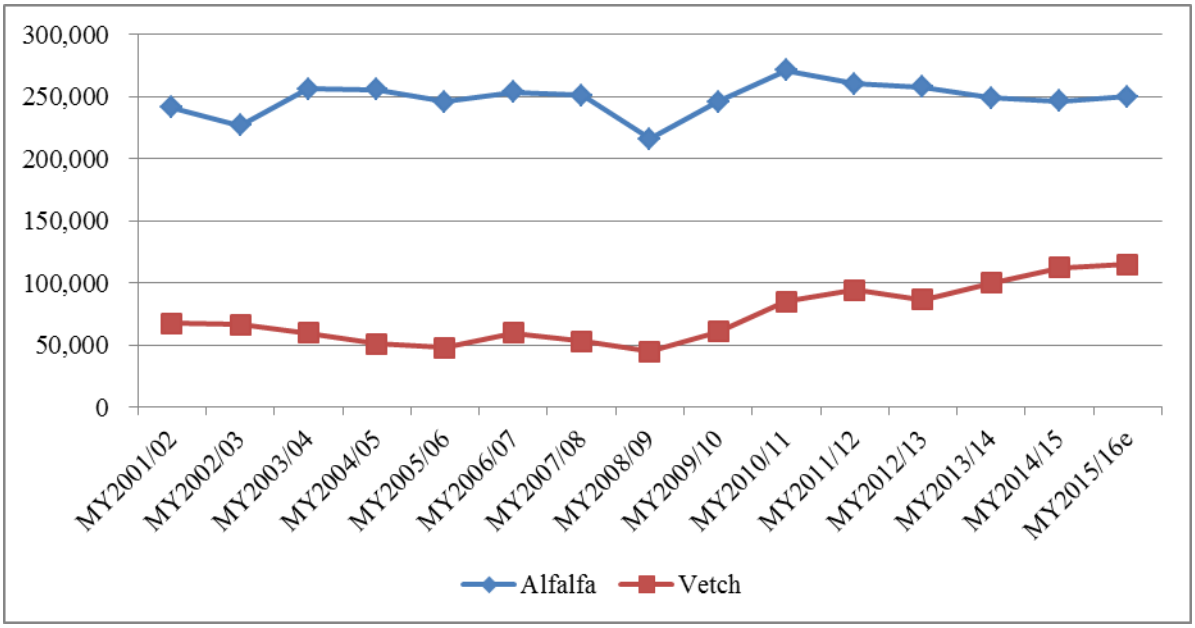
Market	Alfalfa	Vetch	Sainfoin	Fescue	Corn	Rye	Other	Total
2006/07	164,020	4,716	956	5,596	1,190	8,274	7,176	191,928
2007/08	143,554	4,583	506	6,043	1,197	7,744	5,994	169,623
2008/09	122,411	4,039	679	5,696	1,248	5,972	5,993	146,038
2009/10	135,747	9,106	641	9,748	1,076	8,301	4,074	168,693
2010/11	147,065	12,375	469	7,724	1,1,74	8,063	7,946	184,815
2011/12	140,887	14,166	760	4,051	1,230	6,946	10,431	178,920
2012/13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	144,674
2013/14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	151,956
2014/15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	141,011
2015/16f	N/A	N/A	N/A	N/A	N/A	N/A	N/A	142,000

Source: FEGA (Spanish Agricultural Guarantee Fund) AEFA and FAS Madrid estimates.

[1] *Since April 1, 2012, (MY2012/13) the aid for dehydrated fodder scheme is incorporated into the farmer's Single Payment Scheme (SPS) and processors no longer receive a specific the aid. Hence, as of MY2012/13, no official information on the area planted to dried fodder is available. From MY2012/13 on, data in* ***Table 1*** *are based on the National Dried Alfalfa Producers Association survey.*

Since MY2012/13 official information (FEGA) is no longer available. Data as of MY2013/14 is based on industry estimates. While crop specific areas are no longer published, according to contacts, alfalfa represents over 80% of the area planted to dried fodder under contracts with dehydrating plants.

Graph 1. Area Planted to Main Fodder Crops (Hectares)[2]



Source: ESYRCE. MAGRAMA and FAS Madrid estimates.

There are two major alfalfa growing areas in Spain: Castile y Leon and Aragon, although significant volumes are also produced in Catalonia and Castile-La Mancha (**Graph 2**).

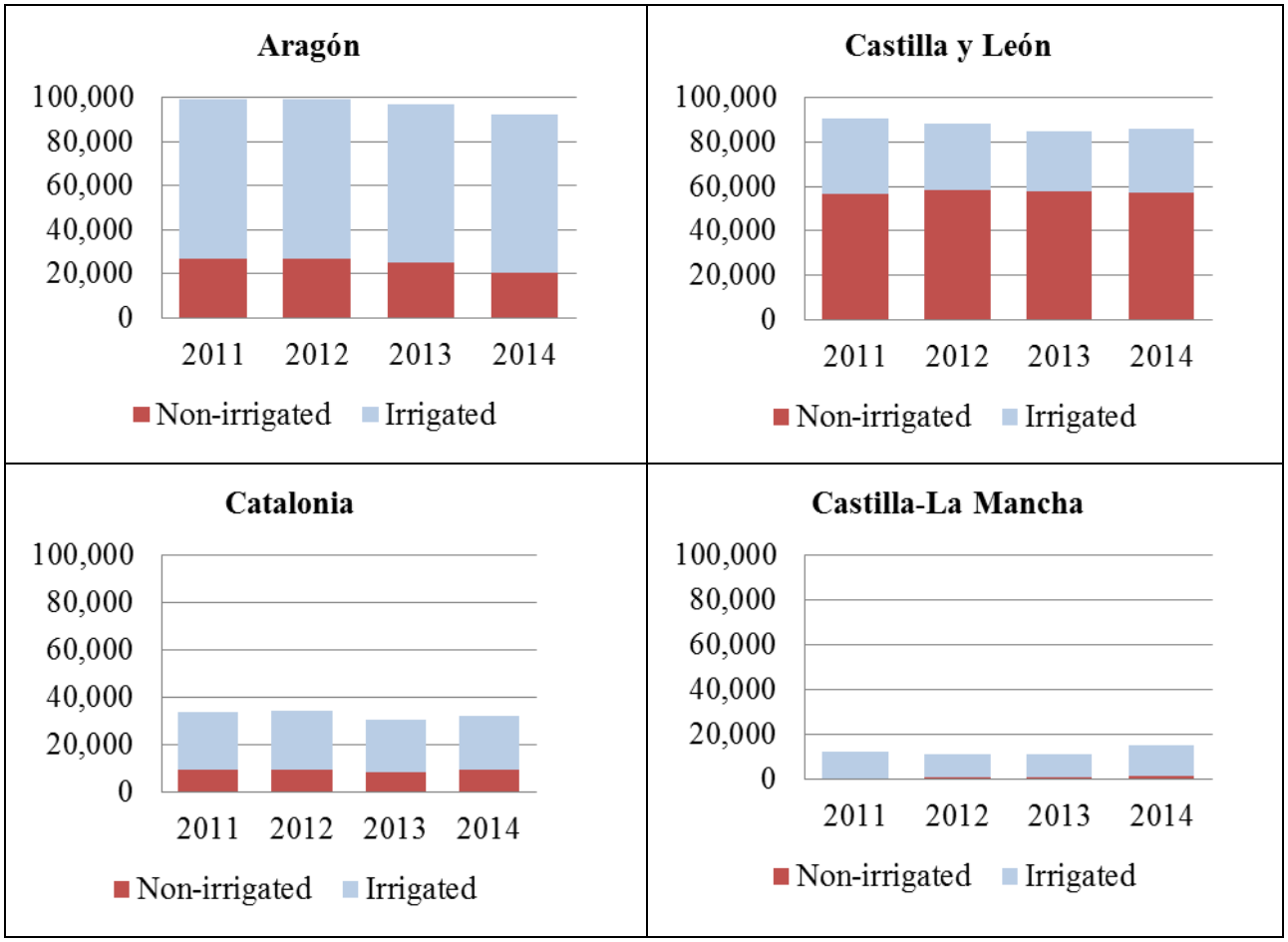
Agricultural practices differ among the alfalfa producing regions. Alfalfa producers in Spain mostly use local varieties. Broadly speaking, alfalfa type "Tierra de Campos" is grown in Castile y Leon, in heavy clay soils, in most cases with no irrigation, whereas "Aragón" is grown in the Ebro Basin and the large majority of it is irrigated.

While alfalfa produced in Castile y Leon (Central Plateau) is mostly consumed by the domestic herd, dried fodder produced in Aragon and Catalonia (Ebro basin) is devoted to the export market.

The fact that China has become such a strategic market for Spanish dried fodder (See **Trade** section) may introduce some variation in agricultural practices as, according to industry sources, China's demand is characterized by stringent quality requirements. Farmers may opt for targeting quality at the expenses of yields, which in the medium to long run, may reduce production volumes.

[2] *Data for area planted to alfalfa and vetch in **Graph 1** differ from those showed in **Table 1,** as **Graph 1** includes total area (with uses different than dehydrating process) and **Table 1** includes only area under contracts whose production is subject of industrial transformation.*

Graph 2. Area Planted to Alfalfa in Spain's Main Producing Regions (Hectares)*

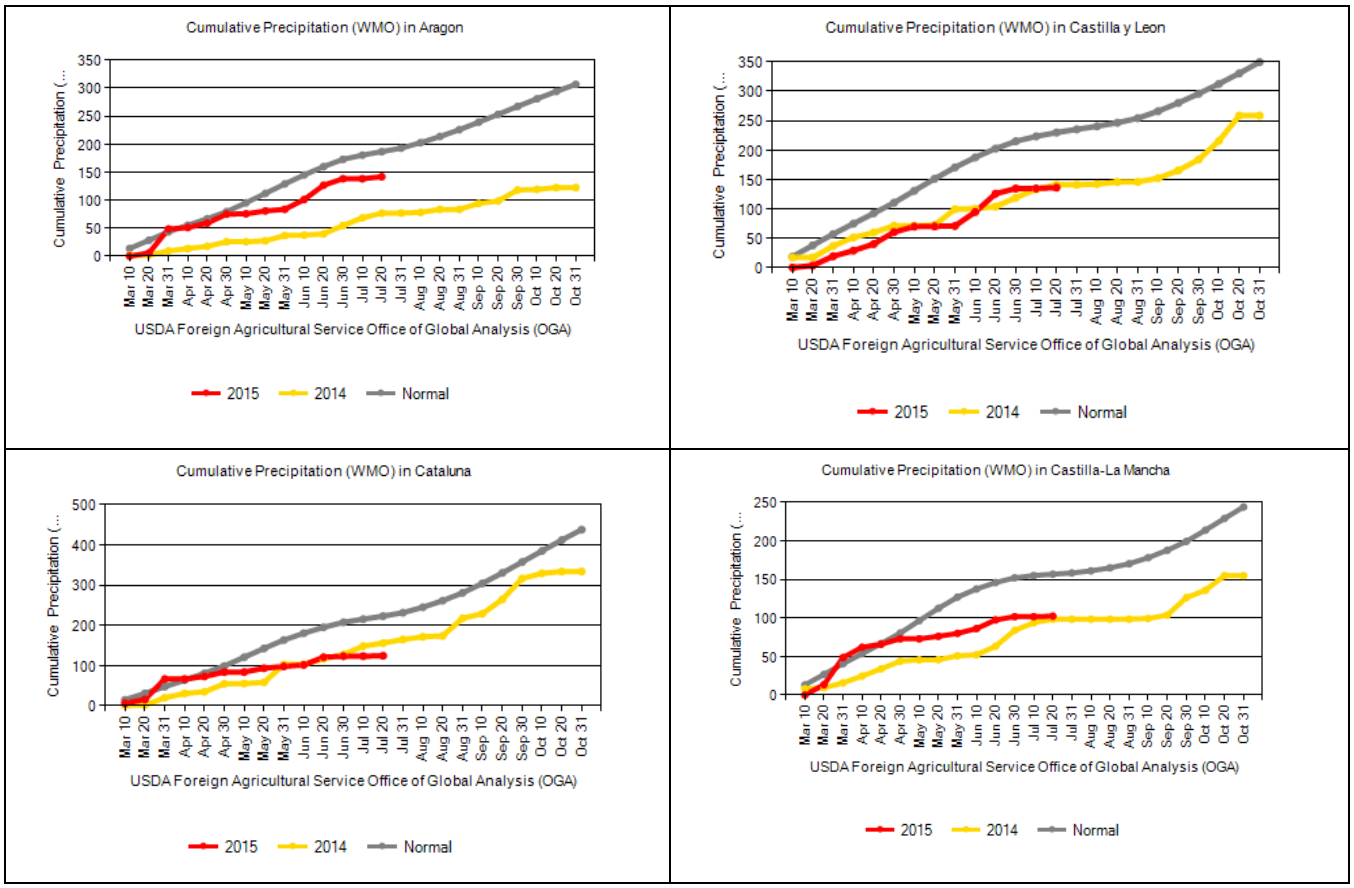


Source: ESYRCE. MAGRAMA

In MY2014/15 lower area planted to alfalfa resulted in a production decline. For MY2015/16 area planted to alfalfa is anticipated to remain fairly stable. The tepid increase could be partially explained by greening compliance (See **Policy** Section) better margins than corn and the continued success in the export markets.

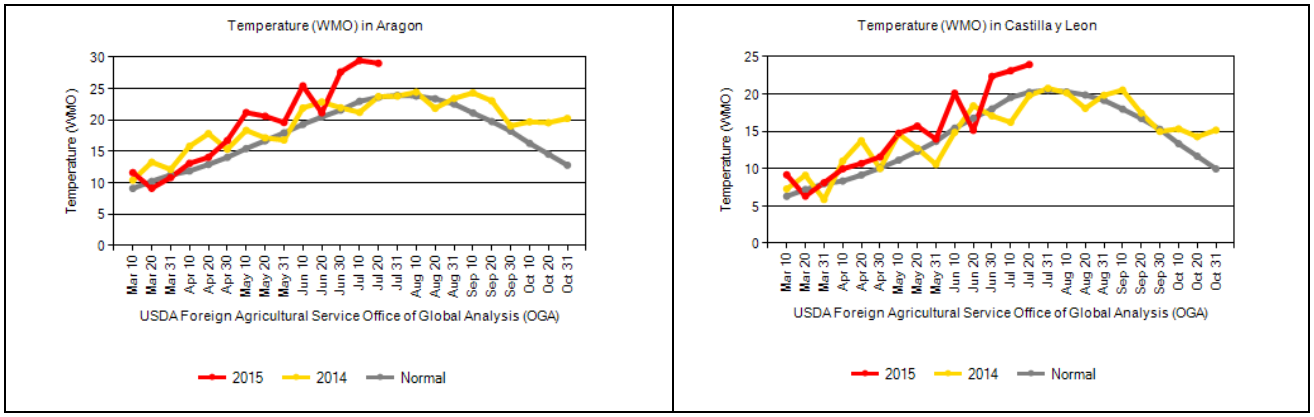
In MY2015/16 dried fodder production is anticipated to remain at similar levels as in MY2014/15. Climate conditions for fodder production in MY2015/16 were very favorable until the beginning of May, when high temperatures (**Graph 3**) and lack of precipitation (**Graph 4**) significantly reduced alfalfa yield expectations, particularly in non-irrigated land. On the contrary, alfalfa grown in irrigated land, which represents the vast majority of alfalfa production, may have benefited from a faster dry out after harvest while triggering extra irrigation needs.

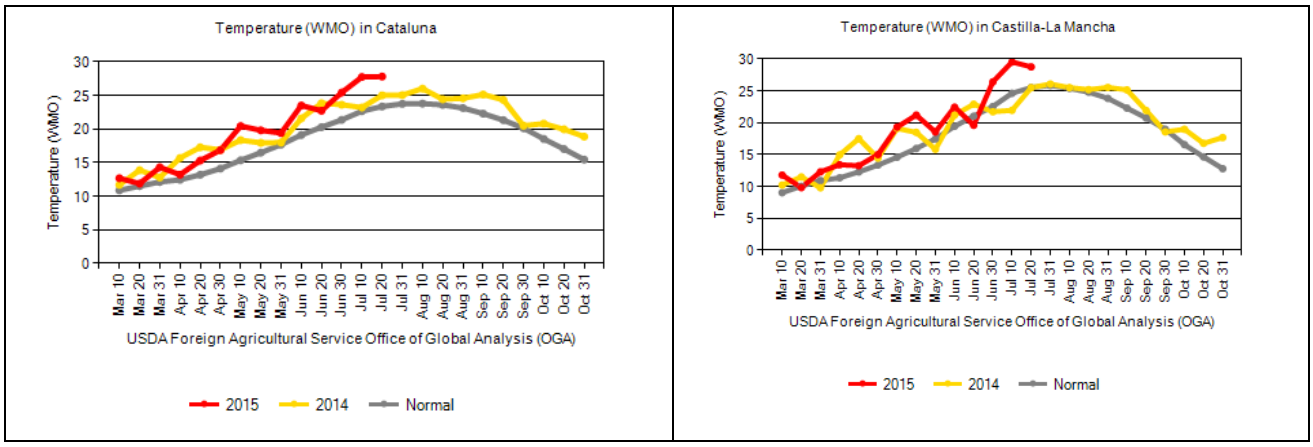
Graph 3. Cumulative precipitation in main Alfalfa producing regions.



Source: IPAD/Foreign Agricultural Service/USDA

Graph 4. Average temperature in main Alfalfa producing regions.





Source: IPAD/Foreign Agricultural Service/USDA

For additional information on climate conditions affecting crops, see GAIN Report SP1514.

Table 2. Production of Dried Fodder under Contracts with Dehydrating Plants (MT)[3]

MY	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16f
Productio	1,710,60	1,804,42	1,920,53	1,619,82	1,659,68	1,469,71	1,500,00

Source: AEFA (National Dried Alfalfa Producers Association) and FAS Madrid estimates.

Processing

There are different techniques in preserving fodder through reducing moisture content, mainly through sun-drying or dehydration. In Spain, both preserving methods coexists, however, sun-cured fodder is consumed in the domestic market, while dehydrated fodder, which represent the large majority of the fodder production, is domestically consumed and also exported.

Alfalfa that will undergo under dehydration is cut in the field. After a pre-drying phase field it is windrowed and transported to the fodder processing plant. The large majority (85 percent) of the alfalfa is collected and transported by fodder wagons, while the remaining 15 percent is chopped and collected by forage harvesters and transported with trucks to the plant.

In the fodder processing plant, the alfalfa is classified by quality and moisture. Then it goes through the processing plant drier (one step trommel), which dries the fodder out with a 300ºC air flow. Final product moisture ranks between 12-14%.

[3] *It includes sun-dried fodder and dehydrated fodder. On average, dehydrated fodder represents over 90 percent, which given its higher homogeneity, is preferred by some importing countries.*

For MY2015/16, the lack of precipitation throughout the harvest season may have contributed to obtain good quality production and increase the share of bales versus pellets (**Table 3**).

Table 3. Spain Dried Fodder Product by Production Type (MT)

Market Year	Pellets	Bales	Total
2006/07	671,381	1,303,269	1,974,651
2007/08	605,995	1,176,343	1,782,339
2008/09	534,625	992,875	1,527,500
2009/10	427,652	1,282,956	1,710,609
2010/11	451,106	1,353,350	1,804,426
2011/12	441,723	1,478,810	1,920,533
2012/13	386,495	1,233,328	1,619,823
2013/14	438,158	1,221,530	1,659,688
2014/15	283,361	1,186,208	1,469,716
2015/16e	285,000	1,215,000	1,500,000

Source: AEFA (National Dried Alfalfa Producers Association) and FAS Madrid estimates.

Of the 74 dried fodder processing plants operating in MY 2014/15 only 24 were eligible to export to China, as AQSIQ approved 24 dehydrating fodder plants out of the 33 plants that showed interest in exporting to the Chinese market after its visit in 2013. Nevertheless, since MY2015/16 a total of 33 processing plants are eligible to export to China (See **Table 4**).

Table 4. Spain Location of Processing Plants

Region	Number of Plants	Of which approved to export to China[4]
Aragon	37	19
Catalonia	11	8
Castile y Leon	12	5
Castile-La Mancha	6	0
Navarra	4	0
Andalusia	2	1
Extremadura	1	0
Balearic Islands	1	0
Total	**74**	**33**

Source: AEFA (National Dried Alfalfa Producers Association) and MAGRAMA.

Consumption and Marketing

[4] *For more information on the Agreement with China, please see **Trade** Section.*

Domestic consumption of dried fodder only represents a small amount of the demand. The export market continues to be Spain's fodder main client, despite ongoing rebound in the dairy cows' inventories since 2012.

Table 5. Dairy Cow population (1,000 Heads)

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015e
Dairy cow population	903	888	828	845	797	827	857	862	867

Source: Eurostat. MAGRAMA. Dairy Survey and FAS Madrid estimates.

Additional information on the European dairy sector is available on the EU-28 Dairy report.

Quality Standards

Three qualities have been established for alfalfa pellets and bales. Requirements can be checked in the tables below:

Table 6. Alfalfa in bales standards

Quality	Raw Protein (%)	ADF (%)	NDF (%)	RFV	Moisture (%)	Color
Premium	<18	<31	<38	160	<14	Intense green
First	16.5-18	31-33	38-42	140-160	<14	Green
Second	15-16.5	33-36	42-44	120-140	<14	Pale green

Source: AEFA (National Dried Alfalfa Producers Association)

Table 7. Alfalfa in pellets standards

Quality	Raw Protein (%)	RFV	Moisture (%)
Premium	<18	160	<12
First	16.5-18	140-160	<12
Second	15-16.5	120-140	<12

Source: AEFA (National Dried Alfalfa Producers Association)

Trade

Spain is a net exporter of fodder with exports (**Table 9**) largely exceeding imports. Dried fodder exports represent on average 70 percent of total domestic production. Imports of dried fodder are limited to a few exchanges with EU neighboring countries such as France or Portugal (**Table 8**).

Table 8. Spain Total Imports of Fodder by Origin in MT*

Country of Origin	MY 2010/11	MY 2011/12	MY 2012/13	MY 2013/14	MY 2014/15
EU-28	10,664	8,175	10,141	6,135	18,137
Others	158	350	839	505	738
TOTAL IMPORTS	**10,822**	**8,525**	**10,980**	**6,640**	**18,875**

Source: GTA and FAS Madrid estimates.* Includes both bales and pellets.

Dried fodder exports continue to soar since MY2008/09. In the absence of a strong domestic demand, fodder processors have managed to find alternative markets for their production.

While Middle East countries continue to represent the largest share of Spain's fodder exports, as the aftermath of an agreement signed by Spanish and Chinese competent authorities in 2014, in just one year, China has become number a strategic client for Spain-based processors as number two destination for Spanish dried fodder. More details on the Protocol to export to China can be found in the Report SP1419.

The Middle East market for fodder over the past six years has been characterized by the significant volume demanded. According to industry sources, China's demand is characterized by its stringent quality requirements. Spain-based processors will need to continue improving crop management and dehydrating process in order to be eligible for the Chinese market. Chinese buyers have shown a clear preference for the "Extra" quality type of alfalfa (See **Table 6** and **Table 7** in **Quality Standards** Section).

Despite production reduction in MY2014/15 export continued growing, which reportedly has resulted in lower commercial ending stocks. For MY2015/16 Spanish fodder is anticipated to continue consolidating its presence in export markets.

Table 9. Spain Total Exports of Fodder by Destination in MT *

Country of	MY	MY	MY2012/13	MY	MY
EU-28	238,337	254,315	162,118	144,583	131,171
United Arab	335,917	707,728	782,034	643,243	700,013
Saudi Arabia	60,761	92,248	118,505	73,167	45,092
Libya	32,737	2,989	4,158	34,231	19,908
Jordan	9,755	21,035	20,164	24,514	29,791
Morocco	37,248	22,786	20,535	15,540	14,799
Lebanon	7,574	3,462	7,910	14,081	21,066
Kuwait	4,761	9,572	10,612	6,171	9,112

Japan	5,433	8,104	6,943	2,863	7,649
Israel	213	748	800	2,181	1,011
South Korea	5,763	4,402	3,375	2,474	7,445
Algeria	0	48	267	1,379	5,940
Tunisia	16,684	1,868	12,877	2,189	4,371
Taiwan	778	309	1,466	1,974	4,540
China	0	0	0	0	91,545
Others	8,382	6,365	22,724	13,490	9,049
TOTAL EXPORTS	**764,343**	**1,135,979**	**1,174,488**	**982,080**	**1,102,502**

Source: GTA and FAS Madrid estimates. * Includes both bales and pellets.

Production, Supply and Demand

Table 10: Spain Production, Supply and Demand for Dehydrated Fodder (MT)

Market Year	MY 2008/09	MY 2009/10	MY 2010/11	MY 2011/12	MY 2012/13	MY 2013/14	MY 2014/15	MY 2015/16f
Production	1,527,500	1,710,609	1,804,426	1,810,000	1,619,823	1,659,688	1,469,716	1,500,000
Imports	25,507	8,532	10,822	8,526	10,971	6,640	18,875	12,900
Total supply	**1,553,007**	**1,719,141**	**1,815,248**	**1,818,526**	**1,630,794**	**1,666,328**	**1,488,591**	**1,512,900**
Dom. Consumption	1,088,413	1,133,190	1,050,904	683,254	456,604	684,248	386,089	387,900
Exports	464,594	585,951	764,344	1,135,980	1,174,190	982,080	1,102,502	1,125,000
Total Demand	**1,553,007**	**1,719,141**	**1,815,248**	**1,818,526**	**1,630,794**	**1,666,328**	**1,488,591**	**1,512,900**

Source: FAS Madrid estimates.

Policy

Since 2015, the **Single Payment Scheme** has been replaced by the so-called **Basic Payment (BP)**. The current support is not crop specific. Hence, farmers receive an area payment regardless the crop they grow.

The Basic Payment in Spain takes into account four different land uses: irrigated land, non-irrigated land, permanent crops, and pasture land. Other factors such as the amount of support previously received are also considered. A total of 50 regions have been defined. The amount of the Basic

Payment allocated to each defined region represents the support granted to the type of land use and agriculture carried out in the area.

To comply with greening measures, farmers must practice crop diversification. Farms between 10 and 30 ha must grow at least two different crops, and farms over 30 ha must grow at least three different crops in their arable land. This may ultimately introduce some incentive to cultivate fodder crops in some areas where monoculture was extensively carried out.

Another option for greening compliance is to keep of EFAs (Ecological Focus Area). Alfalfa is considered as a nitrogen fixing crop for greening compliance purposes. Farms over 15 ha need over 5% of their cultivation land devoted to this use. Both options for greening compliance contribute to encourage alfalfa plantings as of MY2015/16.

Additionally, in Spain's implementation of CAP reform, Specific payments have been allocated as well to **protein crops** (peas, bean, and sweet lupin) or **legumes** (vetch, *lathyrus cicera*, *lathyrus sativus* and non-irrigated alfalfa) and **oilseeds** (sunflower, rapeseed, soybean, camelina and cartamo) exist. Nevertheless, support levels are **€40** (protein crops, legumes) **and €60** (oilseeds) **per hectare**, which will not likely influence farmers planting decisions. As the amount of specific support is rather small, crop margins will ultimately decide whether legumes, oilseeds, protein crops, grains or different types of arable crops became part of the crop rotation.

Related Reports

Report Title	Date Released
Spain is Ready to Export Dried Fodder to China	07/17/2014
Wondermilk Works Wonders In China	03/01/2014
Dutch Dairy Processors Gear Up for Chinese Demand	05/08/2013
Spanish Dried Fodder Processors Seek New Markets	06/03/2013
Record Forage Exports Despite Record Domestic Prices	March 2013
U.S. Hay Exports to the UAE on the rise	06/14/2012
Spain dehydrated fodder Sector Faces New Challenges	03/06/2012
Spain Dehydrated Fodder Sector 2011	02/02/2011
Spain Dehydrated Fodder Sector 2010	02/22/2010