USDA Foreign Agricultural Service
GAIN Report
Global Agricultural Information Network

Required Report - public distribution

Date: 3/20/2017
GAIN Report Number: 032017

Israel

Grain and Feed Annual

Grain and Feed Israel 2017

Approved By:
Bret Tate

Prepared By:
Oren Shaked

Report Highlights:
Israel is almost completely dependent on imports to meet its grain and feed needs. In recent years, dried distillers grains with soluble (DDGS) and corn gluten feed (CGF) imports increased significantly. In MY 2016/17, Israel imported 446 thousand metric tons (TMT) of CGF and DDGS. Of that total, 87 percent were US origin. In MY 2016/17 there was an increase of six percent in the total grain and feed imported to Israel, from 4.625 million metric tons (MMT) in MY 2015/16 to 4.922 MMT in MY 2016/17. Total grain and feed imports from the United States grew by 81 percent in MY 2016/17, climbing to 1.060 MMT. The increase in imports from the US is attributed to more competitive corn prices during recent months. Total wheat imports grew by 267 TMT to 1,720 TMT, of which 901 TMT were milling wheat and 15 percent were US origin, as compared to 13 percent the previous year. Corn imports decreased by 164 TMT to 1,364 TMT. Of the total, 427 TMT, or 31 percent were US origin as compared to 11 percent the previous year.

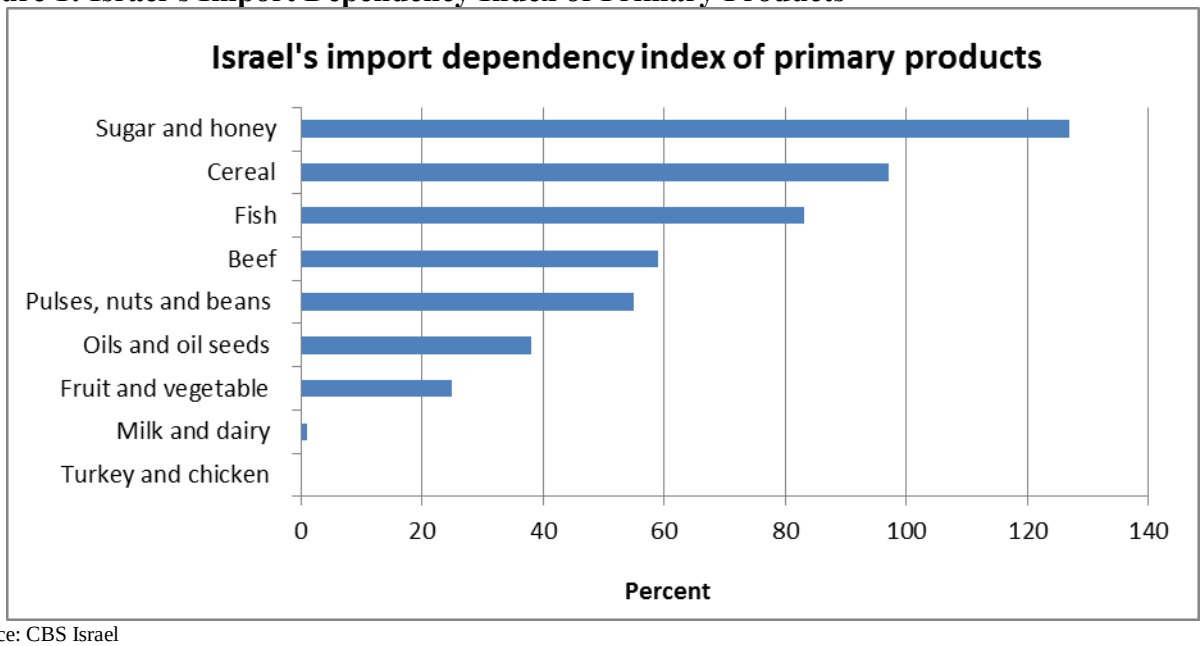
Executive Summary:
Israel is almost completely dependent on imports to meet its grain and feed needs. The maximum area that can be planted with wheat is about 100,000 ha, of which only 70,000 ha were harvested during the last harvest. Feed corn and soybeans are not grown in Israel, making the country entirely dependent on imports. Of the total grain and feed imports in MY 2016/17, 73 percent was used for livestock feed, 19 percent was used for flour milling, and 8 percent was for soybeans and corn for oil and starch production.

General:
While Israel is almost self-sufficient in milk, poultry, and certain fruits and vegetables, it remains highly dependent on imports of many grains and feed products. Figure 1 demonstrates Israel's dependence on the import of primary products. When a value exceeds 100 percent, it should be understood that the export from Israel is based on imports that were processed. One hundred percent means full dependency on imports; 0 is full self-sufficiency, or no imports. As can be seen in Figure 1, Israel is over 90 percent dependent on imports to meet its grain and cereal needs.

The import dependency index is calculated using the following formula:

$$import\ dependency\ index = \frac{\text{import}}{\text{export} - (\text{import} + \text{production})} * 100$$

Figure 1: Israel's Import Dependency Index of Primary Products



Source: CBS Israel

Commodities:

Wheat

Production:

In MY 2017/18, FAS Tel Aviv forecasts wheat production of 140 thousand metric tons (TMT), which is in line with MY 2016/17 production. Current precipitation and moisture distribution this year are within the annual averages and no extreme weather condition has negatively impacted domestic production. While in any given year about 100,000 ha are planted in wheat, only about 70 percent are harvested for milling; the remainder is used as fodder for livestock feed. Post anticipates no change in this trend.

Table 1: Israel's Wheat Production (TMT) and Annual Percent Change

MY	Total Production	Annual Percent Change
2007/08	145	10
2008/09	60	-59
2009/10	100	67
2010/11	100	0
2011/12	100	0
2012/13	165	65
2013/14	130	-21
2014/15	90	-31
2015/16	155	72
2016/17	142	-8
2017/18	140 (forecast)	-1

*Forecast: Based on information collected from the Field Crops Organization.

Consumption:

Consumption in MY 2017/18 is forecast at 1.8 MMT, which is a drop of 60 TMT or 3 percent from post's MY 2016/17 estimate. Wheat consumption in MY 2016/17 is being revised upward to 1.860 MMT from USDA's estimate of 1.785 MMT.

Feed Wheat – The Israeli feed milling industry shifts easily from corn, barley and sorghum to feed wheat and vice versa, depending on prevailing prices. Feed mills do not entirely substitute one grain in their mix for another grain, regardless of the price relationship. For example, with wheat and corn, in spite of the low feed wheat prices in 2016, feed mills are still using significant quantities of corn in their feed products. Most mills use a computerized system to assist with substitution decisions in rations. The systems produce a best-value product considering the costs and benefits of available inputs (protein, carbohydrates, fat, price, etc.).

In MY 2016/17, Israel imported 819 TMT of feed wheat. Due to their proximity, exporters from the Black Sea region, primarily Russia and Ukraine, dominated shipments to Israel. Imports from the US in MY 2016/17 were zero, as they have been since 2010. Feed wheat of US origin was priced at least US $30 per ton higher than Black Sea competitors.

Milling Wheat – Israeli wheat for milling is sourced from Russia, the US, Hungary, Germany, Canada and Romania. Most of these imports are of hard red winter wheat. There are 19 flour mills in Israel, with a total capacity of 1.3 million tons. In addition to milling wheat, there are also imports of

packaged flour mainly from Ukraine and Russia. Annual non-feed wheat consumption in Israel is steady at about 1,000,000 MT. Israel is also exporting some milled wheat to the Palestinian Authority (PA) due to their insufficient milling capacity to meet existing demand.

Trade:
In MY 2017/18, post forecasts total wheat imports at 1.680 MMT a decrease of 40 TMT, or two percent from MY2016/17. The decrease is expected to be primarily in feed wheat, which is being replaced by corn due to price pressure.

Feed Wheat – Due to the corn's competitive pricing, FAS Tel Aviv estimates that some feed wheat imports will be displaced by corn imports. In spite of price pressures, the substitution is expected to be minimal, due to the ration systems discussed above. Most feed wheat is imported from Ukraine.

Milling Wheat – In MY2017/18 milling wheat imports are expected to reach 870 TMT. In spite of annual population growth of two percent, consumption remains stable, due to consumption trends that have led to reduced use of white flour; increasing numbers of people in Israel are looking for "healthier" substitutes for white flour. A recent trend in Israel is to decrease the white bread consumption and to replace it with bread baked from flour perceived as healthier. The local production of milling wheat covers a maximum of 15 percent of the annual consumption. The market share of US wheat is expected to decrease in MY2017/18. Wheat exports from the US tend to have lower stability values than those demanded by Israeli millers, making the use of US product impracticable in many cases. In the current marketing year, the share of US wheat has been 15 percent of total imports compared to 13 percent in MY 2015/16.

Stocks:
In MY 2017/18 wheat stocks are forecast at 346 TMT. Post is revising MY2016/17 stock estimates down to 331 TMT, from USDA's estimate of 389 TMT. The decrease in stocks is due to an increase in the consumption of feed wheat on price and an increase in feeder cattle imports.

The government's emergency stocks of milling wheat are usually at their annual high in July after the end of the harvest in Israel. During this period, stocks are generally at an estimated 150 TMT, which would be sufficient to cover two months of demand. Stocks generally decline from July through March or April to around 30 TMT, and rebound again at the onset of the harvest.

Emergency stocks are based on the domestic wheat harvest size; however, in the case of a shortage in local wheat production, stocks are rebuilt with imported wheat. Emergency stocks are controlled by the Israeli Ministry of Agriculture. The ministry also chooses, through tenders, the companies that are best suited to store the emergency stocks. In addition to the emergency stocks, local importers usually have some milling wheat stocks, which tend to be imported.

The Israeli Ministry of Agriculture also holds emergency stocks of feedstuffs. These include feed grains, oilseed meal, DDGS and CGF. They normally stand at about 120 TMT and are sufficient to meet feed demand for approximately two weeks. Out of the total 120 TMT, about 20 TMT are feed wheat.

Table 2: Wheat Production, Supply and Demand Data Statistics

Wheat	2015/2016		2016/2017		2017/2018	
Market Begin Year	May 2015		Jul 2016		Jul 2017	
Israel	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	70	70	70	70	0	70
Beginning Stocks	222	222	334	334	0	331
Production	155	155	145	142	0	140
MY Imports	1732	1732	1700	1720	0	1680
TY Imports	1732	1732	1700	1720	0	1680
TY Imp. from U.S.	163	163	0	139	0	80
Total Supply	2109	2109	2179	2196	0	2151
MY Exports	5	5	5	5	0	5
TY Exports	5	5	5	5	0	5
Feed and Residual	800	800	800	835	0	800
FSI Consumption	970	970	985	1025	0	1000
Total Consumption	1770	1770	1785	1860	0	1800
Ending Stocks	334	334	389	331	0	346
Total Distribution	2109	2109	2179	2196	0	2151
(1000 HA) ,(1000 MT)						

Barley

Production:

In MY2017/18, barley production is expected to reach 15 TMT from a harvested area of 5,000 ha. FAS Tel Aviv estimates that barley area is 6,700 ha; however, 1,700 ha are being grown for silage. The remaining 5,000 ha are used for grain production. Most barley production is located in the south of Israel and the rest is in the Beit-Sh'ean Valley, in eastern Israel. Production is about 3 MT per ha of grains and 8.5 MT per ha when cultivated for silage.

Consumption:

In MY 2017/18 barley consumption is projected to be 330 TMT. Barley is the third biggest feed grain in Israel after corn and feed wheat. Annual consumption is expected to range between 250-500 TMT in the coming years. Most barley in Israel is purchased by the Arab population, both in Israel and the Palestinian Authority, as feed for their livestock, mainly sheep.

Trade:

In MY 2017/18 imports are expected at 320 TMT, a decrease of 5 TMT from MY2016/17 estimates of 325 TMT. The changes are mostly due to the price dynamics between the main feed grains (corn, feed wheat, barley and sorghum), and are driven by Israel's feed milling industry. Barley and other grains are necessary in feed rations, due to the presence of *xanthophyll 1*, a pigment in corn that turns the broiler meat yellow. Poultry producers and feed millers use higher amounts of barley, sorghum, or feed wheat to mitigate for the strong yellow pigment in chicken meat. Israeli consumers tend to relate a yellow color in poultry to poor health and obesity. In recent years, annual barley imports have varied between 190 and 550 TMT and are projected to stay at these levels in the coming years.

MY 2017/18 Outlook

This year the total supply of barley was very similar to the previous years, and FAS Tel Aviv

forecasts no significant changes in the foreseeable future. There have been no imports of barley from the US in recent years, a situation also not expected to change in the near future. Most barley imported is from Ukraine, due to proximity and attractive prices.

Stocks:
In MY 2017/18 stocks are forecast at 35 TMT. Most of the stocks will be from the government's emergency feedstuff stocks; however, some limited stocks may be held at private feed mills.

Table 3: Barley Production, Supply and Demand Data Statistics

Barley	2015/2016		2016/2017		2017/2018	
Market Begin Year	May 2015		Oct 2016		Oct 2017	
Israel	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	0	0	0	5	0	5
Beginning Stocks	24	24	15	15	0	30
Production	0	0	0	15	0	15
MY Imports	321	321	275	325	0	320
TY Imports	321	321	275	325	0	320
TY Imp. from U.S.	1	1	0	0	0	0
Total Supply	345	345	290	355	0	365
MY Exports	0	0	0	0	0	0
TY Exports	0	0	0	0	0	0
Feed and Residual	320	320	250	315	0	320
FSI Consumption	10	10	10	10	0	10
Total Consumption	330	330	260	325	0	330
Ending Stocks	15	15	30	30	0	35
Total Distribution	345	345	290	355	0	365
(1000 HA) ,(1000 MT)						

Corn
Production:

Although corn is grown in Israel, none is cultivated for feed use. In CY 2016, total area planted in corn was 14,000 ha. Around half of the total was grown for silage, leaving 6,000 ha for human consumption as sweet corn, either fresh or processed, and 1,000 ha for popcorn. Israel is entirely dependent on imports of feed corn. Due to water constraints (dependency on irrigation, water shortages, and high prices), farmers will continue to produce other higher value crops in lieu of feed corn.

Consumption:
In MY 2017/18 corn consumption is forecast at 1.390 MMT an increase of 50 TMT from MY2016/17. This increase reflects substitution away from feed wheat due to price pressures.

Corn is the main commodity used by Israel's feed industry. Consumption is driven by poultry and egg production, followed by dairy, turkey, and other ruminants. In the last decade, total animal protein production increased by 7.5 percent, reaching 674 TMT in MY2015/16. This trend is expected to continue in the coming years. Annual per capita meat consumption in Israel is 86 kg per person, ranking it third in the OECD after Australia and the United States.

Broilers – In 2016, the poultry production quota system was eliminated. With no mandated quota, production surpluses, too high to be absorbed by the local market, are likely. Growers are attempting to put in place an internal quota control to avoid excess production. The quota system, which began in 1997, increased broiler production by 113 percent as of 2014. Poultry production in 2015 totaled 474 TMT, an increase of 3.4 percent over the previous year.

Table Eggs – In MY 2015, table egg production was two billion, an increase of 3.5 percent from the previous year. There are shortages in the Israeli market that occur usually around the months of April and September, due to local holidays. The shortages are generally filled with imported table eggs. In 2015 Israel imported 300 million table eggs mainly from Turkey and Spain to bridge the gap. This year post expects most imported table eggs to be imported from Spain due to ongoing phytosanitary concerns.

Milk – In 2015, local milk production increased to 1,521 million liters, around 3.6 percent over its 2014 level. Post estimates that total milk production will continue to grow. Local consumption per capita is about 180 liters per person, which is relatively low compared to western countries' consumption of 220 liters per person.

Beef – In recent years, local production of beef increased significantly. Local beef production in 2016 totaled 99 TMT (carcass weight). As beef demand grows, Israel becomes ever more dependent on imported feeder cattle, due to insufficient grazing area. In 2016, 236,885 feeder cattle were imported, largely from Australia and Eastern Europe. Israel also imports frozen beef and recently started importing chilled beef, including from the US. In 2016 beef imports totaled 79.5 TMT. Locally produced beef is more expensive than imported product. As such, FAS Tel Aviv expects to see an increase in both chilled and frozen beef imports, with a concomitant decrease in imported feeder cattle.

Turkey – Turkey is not popular in the Israeli cuisine. Most turkey meat produced is consumed by the local industry for processed products. The total production of turkey meat in 2015 was 90 TMT. Consumption is expected to decrease by as much as ten percent in the coming year due to negative publicity regarding the hazards of consuming processed meat products.

Mutton and goat meat – Israeli production of mutton and goat has been stable over the past few years, totaling around 18 TMT in 2015. The limiting factor for this product is the high price charged for fresh chilled meat.

Pork – Due to religious restrictions on pork consumption by the Jewish and Muslim population, local pork production is relatively small and production levels have remained unchanged since 1997, totaling about 16 TMT. Due to unchanged production levels combined with a higher local demand for pork meat, prices have increased by about 113 percent since 1997. It should be mentioned that according to the Israeli Kosher Law, it is not allowed to import non-kosher meat; however, domestic pork production is permitted. As such, demand must be met with local production.

Table 4: Livestock in Israel (number of head, ex fish)

		2015	2010	2000	1990
Cattle	Beef Cattle	500,000	421,000	364,000	332,000
	Milk Cows	116,000	120,000	125,000	109,000
Poultry	Layers	10,500,000	9,005,000	7,071,000	6,800,000
	Broilers	34,680,000	33,594,000	20,462,000	14,300,000
	Turkeys	3,889,000	3,800,000	4,785,000	2,830,000
Sheep		580,000	445,000	380,000	375,000
Goat		102,000	100,000	62,000	115,000
Pig		19,000	23,000	13,000	N/A
Fish	Fresh Water	25,000 MT	N/A	N/A	N/A

*Data are end of year totals
Source: Israeli Central Bureau of Statistics

Feed Industry

About 90 percent of the local feed milling industry is controlled by eight feed millers. The biggest feed milling company is Ambar, with a market share of around 22 percent. The firm has plans to increase production by about 12 percent in the coming years. There are approximately 150 feed centers in Israel. These are communal feed mills operated by local farming communities or *Kibutzim*, which sell their feed mix chiefly to the cattle industry. Out of the total feed centers, 15 are large feed centers, servicing the largest cattle producers, while the remaining 135 are smaller operations, selling feed to smaller producers. Each small feed center supplies feed to 100-300 cattle. In Israel, due to the dry weather including long dry summers and short winters with little rainfall, beef cattle lack grazing meadows. Most of the year farmers have to feed cattle, making beef production in Israel relatively expensive.

The total market of the Israeli feed milling industry (feed millers and feed centers) is estimated at about four million tons of feed per year, not including hay and silage. Their typical mix is made of grains, oilseed meals (soy, sunflower, and canola) and other feed sources such as DDGS and CGF. Part of the feed prepared by the Israeli feed mills is re-exported to Jordan and to the PA. It is estimated that about 15 percent is being re-exported.

Table 5: Feed Prices in Israel (US$/MT)

	August 2015	August 2016	% Difference
Corn	**205**	**200**	**-2.5**
Barley	**203**	**175**	**-13.8**
Feed wheat	**203**	**180**	**-11**
Soy meal	**495**	**500**	**+1**
Gluten feed	**220**	**225**	**+2**
Canola meal	**300**	**280**	**-6.7**
Sunflower meal	**300**	**300**	**0**
DDG	**285**	**270**	**-5**
Exchange rate INS/$	**3.845**	**3.795**	**-1.3**

Source: Israeli Cattle Growers Association

Trade:
In MY 2017/18 corn imports are expected to be 1.4 MMT, of which 400 TMT are expected to be of US origin. In recent years, corn has been imported mainly from Ukraine, Argentina and Brazil. In MY 2016/17, 427 TMT of US corn was exported to Israel. The dramatic decline of US corn exports to Israel in the past decade is due to competitive pricing of Ukraine and South American corn, and what the industry perceives as the superior quality of corn from these origins.

Additionally, Ukrainian and other Black Sea corn sources' proximity to Israel, results in a freight advantage over the United States and South America. The average price difference between corn from the Ukraine to that sourced from the US is US $30 per ton. Corn imports over the past 10 years have ranged between 900 – 1,700 TMT and are expected to be at similarly high levels in the coming years.

Israel remains a steady, long-time customer of US corn co-products including DDGS and CGF. In recent years DDGS and CGF imports have increased significantly. In MY 2016/17, 446 TMT of CGF and DDGS were imported by Israel, of which 87 percent was from the US. This figure has doubled in the last decade. The country's dairy sector is a heavy user of DDGS and CGF with some DDGS earmarked for poultry consumption.

Stocks:
MY 2017/18 ending stocks are forecast at 51 TMT. These stocks will be held in government storage, as well as privately-owned feed mills and centers.

Table 6: Corn Production, Supply and Demand Data Statistics

Corn	2015/2016		2016/2017		2017/2018	
Market Begin Year	Oct 2015		Oct 2016		Oct 2017	
Israel	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	0	0	0	0	0	0
Beginning Stocks	95	95	37	37	0	51
Production	0	0	0	0	0	0
MY Imports	1152	1152	1500	1364	0	1400
TY Imports	1152	1152	1500	1364	0	1400
TY Imp. from U.S.	388	388	0	427	0	400
Total Supply	1247	1247	1537	1401	0	1451
MY Exports	10	10	10	10	0	10
TY Exports	10	10	10	10	0	10
Feed and Residual	1100	1100	1350	1240	0	1290
FSI Consumption	100	100	100	100	0	100
Total Consumption	1200	1200	1450	1340	0	1390
Ending Stocks	37	37	77	51	0	51
Total Distribution	1247	1247	1537	1401	0	1451
(1000 HA) ,(1000 MT)						