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Israel

Grain and Feed 2019 Annual

Israel's Imports of U.S. Corn up 88,000 MT in MY 2018/19

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Report Highlights:
FAS Tel Aviv (Post) forecasts Israel's imports of wheat in marketing year (MY) 2019/20 (July-June) to reach some 1.7 million metric tons (MMT), up 5.5 percent or increasing by 90,000 MT compared to the MY 2018/19 figure. Israel is an insignificant producer of corn. No corn is cultivated for feed use. Post forecasts Israel's corn consumption in MY 2019/20 (October-September) at 1.62 MMT, up around 2.5 percent or increasing some 38,000 MT compared to the 2018/19 estimate figure. FAS Tel Aviv forecasts Israel's imports of corn in MY 2019/20 to reach 1.65 MMT, of which 200,000 MT are expected to be of U.S.-origin.

Executive Summary:

FAS Tel Aviv (Post) forecasts Israel's wheat production in marketing year (MY) 2019/20 (July-June) to reach 75,000 metric tons (MT), up seven percent compared to 70,000 MT in marketing year 2018/19. Israeli wheat production is dependent on rainfall. Post attributes the production drop in MY 2018/19 to low precipitation during a shorter than normal winter combined with political protests. Palestinian protestors burnt some 400 hectares of wheat fields along the Gaza Strip border.

Wheat's ten-year average production is about 110,000 metric tons. Post forecasts Israel's imports of wheat in MY 2019/20 to reach some 1.7 million metric tons (MMT), up 5.5 percent or increasing by 90,000 MT compared to the MY 2018/19 figure. Post anticipates the increase primarily in the form of feed wheat, which may substitute for other grains due to price pressure.

FAS Tel Aviv forecasts Israel's barley production in MY2019/20 (October-September) at about 15,000 MT from a harvested area of around 5,000 hectares. Post estimates that the area planted with barley is actually 6,700 hectares, but 1,700 hectares are going to silage. The other 5,000 hectares is for grain production. Most barley production is located in the south of Israel; the rest of the production is in the Beit-Sh'ean Valley in the east of the country. Production is about 3.0 MT/hectare for grains and around 8.5 MT/hectare when cultivated for silage. Marketing year 2018/19 saw some 2,700 hectares harvested for silage due to field fires in the Gaza Strip border.

Israel is an insignificant producer of corn. No corn is cultivated for feed use. FAS Tel Aviv forecasts Israel's corn consumption in MY 2019/20 (October-September) at 1.62 MMT, up around 2.5 percent or increasing some 38,000 MT compared to the 2018/19 estimate figure. Consumption will fluctuate somewhat, influenced mainly by the grain prices. Corn is the main commodity used by Israel's feed industry. Poultry and egg production drives consumption, followed by dairy, turkey, and other ruminants.

FAS Tel Aviv forecasts Israel's imports of corn in MY 2019/20 to reach 1.65 MMT, of which 200,000 MT are expected to be of U.S.-origin. In recent years, corn imports originate mainly from Ukraine, Argentina, and Brazil. Marketing year 2018/19, saw imports of 200,000 MT of U.S.-origin corn, up 88,000 MT compared to the previous year.

Israel is almost self-sufficient in milk, poultry, and certain fruits and vegetables, but remains highly dependent on imports of many grains, feed products, and oilseeds. Israel has limited arable land suitable for agriculture and grazing. The water used for field crops is limited, expensive, and tightly controlled by governmental quotas. Precipitation is low and in most of the country, the arid conditions limit rain fed agriculture. Farmers prefer to use their land and water resources for cash crops and for crops with low water demands. This will not change in the near future, and Israel will continue relying on grain and feed imports. Due to the increasing population, the future demands for grains and feed will grow in the coming years.

WHEAT

PRODUCTION:

FAS Tel Aviv (Post) forecasts Israel's wheat production in marketing year (MY) 2019/20 (July-June) to reach 75,000 metric tons (MT), up seven percent compared to 70,000 MT in marketing year 2018/19. Israeli wheat production is dependent on rainfall. Wheat's ten-year average production is about 110,000 metric tons. Area harvested is 60,000 hectares.

Post attributes MY 2018/19 production to fall below average due to low precipitation during a shorter than normal winter combined with political protests. Palestinian protestors burnt some 400 hectares of wheat fields along the Gaza Strip border. Seeking to avoid further losses, farmers in border areas harvested fields green for silage production. Late rains in May also led to some minor losses. Post is revising downward the MY 2018/19 estimate to 70,000 MT, down 40,000 MT or over 36 percent lower than the U.S. Department of Agriculture (USDA) official MY 2018/19 estimate of 110,000 metric tons.

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

MY	Total Production	Annual Percent Change
2008/09	60,000	-59
2009/10	100,000	67
2010/11	100,000	0
2011/12	100,000	0
2012/13	165,000	65
2013/14	130,000	-21
2014/15	90,000	-31
2015/16	155,000	72
2016/17	142,000	-8
2017/18	50,000	-65
2018/19	70,000	40
2019/20	75,000*	7

SOURCE: (*) Field Crops Organization and from local media. FAS Tel Aviv office research.

Roughly seventy percent of Israel's wheat production occurs in the southern part of the country. The northern and central areas account for the balance of production. Rainfall in the southern areas of the country averages 450 millimeters (mm) per annum; the northern regions receive some 500-550 mm of rain yearly. The rainy season runs from October to April. The average rainfall in MY 2018/19 was only 76 percent of its normal average in the southern growing areas and 80 percent in the northern growing areas.

Precipitation and soil moisture distribution are currently 20 percent above the annual averages in the northern and central parts of the country, but 35 percent lower than the annual averages in the south. Post anticipates that lower rainfall in the south, combined with farmers' intentions to harvest wheat green for silage along the Gaza Strip will affect total production in marketing year 2019/20. Farmers plant some 100,000 hectares with wheat usually, but only harvest 70 percent actually for milling; the remainder goes to fodder for livestock. This year we expect a harvest of only 60 percent of the wheat crop for milling, 40 percent will go to livestock feed.

CONSUMPTION:

FAS Tel Aviv forecasts Israel's wheat consumption in MY 2019/20 to reach 1.75 million metric tons (MMT), up slightly over two percent or some 39,000 MT above post's earlier MY 2018/19 estimate figure. There is a growing consumer preference to switch away from white wheat flour to alternative substitutes; Israelis are shifting to rice, spelt, teff, (Williams' love-grass or annual bunch grass - *Eragrostis tef*,), and rye flours. However, modest increases in wheat consumption are expected to continue in the future.

Feed Wheat: The Israeli feed milling industry shifts easily from corn, barley, and sorghum to feed wheat and back based on prevailing prices. Feed mills however do not entirely substitute one grain in their mix for another grain, regardless of the price relationship. Despite the increase in the price of feed wheat in calendar year (CY) 2018, feed mills continued utilizing significant quantities of it in their feed formulations despite the availability of lower cost corn and barley.

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 (i.e., protein, carbohydrates, fat, and price). Israeli feed mills produce hundreds of different feed formulas for different usages and for the different growth stages of the animals; each formula has a slightly different feed ratio.

In marketing year 2018/19, Israel imported some 755,000 of feed wheat, mainly from the nearby Black Sea region (Russia and Ukraine). Imports of U.S.-origin feed wheat in MY 2018/19 were zero, and unchanged since calendar year 2010. Feed wheat from the United States at $30/MT higher than that of Black Sea region producers is uncompetitive.

Milling Wheat: Israel imports wheat for milling from Russia, the United States, Hungary, Germany, Canada, and Romania. Most of these imports are hard red winter wheat. There are 19 flour mills in Israel, with a total milling 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 1.0 million metric tons. Israel is also shipping some milled wheat to the Palestinian Authority (PA) due to the latter's insufficient milling capacity and high demand.

TRADE:

FAS Tel Aviv forecasts Israel's imports of wheat in MY 2019/20 to reach some 1.7 MMT, up over 5.5 percent or increasing by 90,000 MT compared to the MY 2018/19 figure. Post anticipates the increase primarily in the form of feed wheat, which may substitute for other grains due to price pressure.

Feed Wheat: Post forecasts Israel's imports of feed wheat in MY 2019/20, at 800,000 MT; most of this feed wheat will originate in Ukraine.

Milling Wheat: Post forecasts Israel's imports of milling wheat in MY2019/20 at 875,000 metric tons. Despite an annual population growth of two percent, consumption remains stable due to the consumer consumption trend towards reduced white flour usage. Israelis are increasing the consumption of white wheat flour alternatives, considered as being healthier than regular flour. Israelis are reportedly decreasing their consumption of white bread, replacing it with breads baked from rice, spelt, teff, and rye flours. There is also a growing trend to consume increasing numbers of gluten-free products.

The local production of milling wheat covers a maximum of 15 percent of annual consumption. The market share of U.S.-origin wheat will likely stay stable at about 115,000 MT in marketing year 2019/20. Sources comment that U.S.-origin wheat tends to have lower stability values than that demanded by Israeli millers, making the U.S. product impracticable in many cases. In marketing year 2018/19, U.S.-origin wheat's market share is about seven percent of total imports, up somewhat compared to a market share of 6.3 percent during the preceding marketing year.

STOCKS:

FAS Tel Aviv forecasts Israel's wheat stocks in MY 2019/20 at 310,000 metric tons. Post is revising its MY 2018/19 stock estimates down from 331,000 MT to 290,000 metric tons. The decrease in the stocks number is attributable to a drop in the local production of wheat.

The government's emergency stocks of milling wheat are usually at their highest level in July, just after the end of the harvest. During this period, stocks are generally at an estimated 150,000 MT, or sufficient to cover two months of demand. Stocks generally decline from July through March/April to around 30,000 MT; rebounding again at the onset of the harvest.

Emergency stocks depend on the domestic wheat harvest size; however, in the case of a shortage in local wheat production, wheat imports augment wheat stocks. This occurred earlier this year. Israel's Ministry of Agriculture and Rural Development (MoARD) controls emergency stocks. 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 maintain some milling wheat stocks (mainly imported wheat).

The Ministry of Agriculture and Rural Development also maintains feedstuffs emergency stocks. These include feed grains, oilseed meal, dried distillers grains with solubles (DDGS) and corn gluten feed (CGF). Stocks are about 120,000 MT, sufficient to meet feed demand for approximately two weeks. Out of the total 120,000 MT, feed wheat accounts for about 20,000 metric tons.

Table 2: Wheat Production, Supply and Demand Data Statistics

Wheat	2017/2018		2018/2019		2019/2020	
Market Begin Year	Jul 2017		Jul 2018		Jul 2019	
Israel	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	45	70	50	65	0	60
Beginning Stocks	376	376	530	326	0	290
Production	72	50	110	70	0	75
MY Imports	1989	1651	1750	1610	0	1700
TY Imports	1989	1651	1750	1610	0	1700
TY Imp. from U.S.	74	104	0	115	0	115
Total Supply	2437	2077	2390	2006	0	2065
MY Exports	7	5	5	5	0	5
TY Exports	7	5	5	5	0	5
Feed and Residual	850	823	850	765	0	800
FSI Consumption	1050	923	1075	946	0	950
Total Consumption	1900	1746	1925	1711	0	1750
Ending Stocks	530	326	460	290	0	310
Total Distribution	2437	2077	2390	2006	0	2065
Yield	1.6	0.7143	2.2	1.0769	0	1.25
(1000 HA) ,(1000 MT) ,(MT/HA)						

Source: Ministry of Agriculture and Rural Development, Central Bureau of Statistics, Farm Associations, FAS Tel Aviv.

BARLEY

PRODUCTION:

FAS Tel Aviv forecasts Israel's barley production in MY2019/20 (October-September) at about 15,000 MT from a harvested area of around 5,000 hectares. Post estimates that the area planted with barley is actually 6,700 hectares, but 1,700 hectares are going to silage. The other 5,000 hectares is for grain production. Most barley production is located in the south of Israel; the rest of the production is in the Beit-Sh'ean Valley in the east of the country. Production is about 3.0 MT/hectare for grains and around 8.5 MT/hectare when cultivated for silage. Marketing year 2018/19 saw some 2,700 hectares harvested for silage due to field fires around the Gaza Strip.

CONSUMPTION:

FAS Tel Aviv forecasts Israel's barley consumption in MY 2019/20 at 365,000 metric tons, up nearly three percent or some 10,000 MT higher compared to post's MY 2018/19 estimate. Following feed wheat and corn, barley is the third most utilized feed grain in Israel. Post anticipates that annual consumption will range 250,000 to 500,000 MT over the course of the next few years. Barley's main use in Israel is for sheep feed. Most feed mills will swap out feed wheat for barley depending of prices.

TRADE:

FAS Tel Aviv forecasts Israel's imports of barley in MY 2019/20 at around 355,000 MT, up almost five percent or some 16,000 MT more compared to the MY 2018/19 estimate. There have been no U.S.-origin barley imports in recent years. Most of Israel's barley imports originate in Ukraine, taking advantage of shipping proximity and lower prices.

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 even feed wheat to mitigate for the strong yellow pigment in chicken meat. Israeli consumers tend to associate a yellow color in poultry to poor animal health and obesity. In recent years, annual barley imports have varied between 190,000 MT and 550,000 MT, and will stay at these levels in the coming years.

STOCKS:

FAS Tel Aviv forecasts Israel's barley stocks in MY 2019/20 at 35,000 metric tons. Most of the stocks will be from the government's emergency feedstuff stocks. A limited number of stocks may however be held at private feed mills.

Table 3: Barley Production, Supply and Demand Data Statistics

Barley	2017/2018		2018/2019		2019/2020	
Market Begin Year	Oct 2017		Oct 2018		Oct 2019	
Israel	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	0	5	0	4	0	5
Beginning Stocks	29	29	23	34	0	30
Production	0	15	0	12	0	15
MY Imports	234	380	250	339	0	355
TY Imports	234	380	250	339	0	355
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	263	424	273	385	0	400
MY Exports	0	0	0	0	0	0
TY Exports	0	0	0	0	0	0
Feed and Residual	230	380	250	345	0	355
FSI Consumption	10	10	10	10	0	10
Total Consumption	240	390	260	355	0	365
Ending Stocks	23	34	13	30	0	35
Total Distribution	263	424	273	385	0	400
Yield	0	3	0	3	0	3
(1000 HA) ,(1000 MT) ,(MT/HA)						

Source: Ministry of Agriculture and Rural Development, Central Bureau of Statistics, Farm Associations, FAS Tel Aviv.

CORN

PRODUCTION:

Israel is an insignificant producer of corn. No corn is cultivated for feed use. In calendar year 2018, total planted area was around 14,000 hectares. Over half of this amount is for silage, with some 6,000 hectares cultivated for human consumption as sweet corn (either fresh or processed). Popcorn grows on about 1,000 hectares. Israel is entirely dependent on imports of feed corn. Due to water constraints (dependency on irrigation, water shortages, and high prices), farmers continue to produce other higher value crops in lieu of feed corn.

CONSUMPTION:

FAS Tel Aviv forecasts Israel's corn consumption in MY 2019/20 (October-September) at 1.62 MMT, up around 2.5 percent or increasing some 38,000 MT compared to the 2018/19 estimate figure. Consumption will fluctuate somewhat, influenced mainly by the grain prices. Corn is the main commodity used by Israel's feed industry.

Poultry and egg production drives consumption, followed by dairy, turkey and other ruminants. In the last decade, total animal protein production increased by 1.4 percent, reaching 832,000 MT in calendar year 2018. This trend will continue in the coming years. Annual per capita meat consumption in Israel is 86.1 kilograms (kg) per person, ranking it fourth in the world after Australia with 90.3 kg, the United States 90.1 kg, and Argentina with 86.6 kg per capita (2014 statistics).

BROILERS: In 2016, Israel eliminated its poultry production quota system. With no mandated quota, production surpluses were expected, but none occurred. Growers are now attempting to put in place an internal quota control to avoid excess production. The quota system, dating back to 1997, increased broiler production by 113 percent through 2014. Poultry production in 2018 now totals 615,000 MT, down one percent compared to 2017 due to low market prices. Israel is self-sufficient in broiler production.

TABLE EGGS: In MY 2018, table egg production was almost 2 billion eggs, with almost no change from the previous year. Shortages in the Israeli market usually occur around the months of April and September due to local holidays; imported table eggs fill shortages. The Ministry of Agriculture and Rural Development controls table egg production through a production quota system. There is little incentive or interest in changing the existing system. The 2018 *Salmonella* outbreak on local farms exacerbated the seasonal shortage.

MILK: In 2018, local cow milk production was 1,550 million liters. Due to milk surplus in the market, attributable to the increase in imported hard cheeses, the production quota for 2019 is decreasing to 1,500 million liters. Post estimates that total milk production will continue to grow due to increased consumption of dairy drinks and yogurts. Local consumption per capita is about 197 liters per person. Israel produces also 14 million liters of goat milk and around 10 million liters of sheep milk.

BEEF: Local beef production in 2018 totals 80,000 MT, up ten percent compared to 2017. Israel is increasingly dependent on imported feeder cattle, as well as on chilled or frozen beef as beef demand rises. With the resource constraints and high dependence on imported inputs, locally produced beef is now more expensive than imported product. Post expects to see an increase in both chilled and frozen beef imports, with a concomitant decrease in imported feeder cattle. The demand for beef in Israel is increasing.

TURKEY: Turkey meat is not common in Israeli cuisine. The local processing industry absorbs most domestically produced turkey. Total production CY 2018 was about 94,000 MT, up some 9,000 MT compared to 2017. Consumption is stabilizing at this amount for the near future.

MUTTON AND GOAT MEAT: Israeli production of mutton and goat totals 12,000 MT in 2018, largely unchanged from previous years. Consumption is stabilizing at this amount for the near future.

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 14,000 metric tons. The Israeli Kosher Law prohibits imports of non-kosher meats, but does permit domestic pork production.

FEED INDUSTRY: Eight feed millers control about 90 percent of the local feed milling industry. The largest feed miller controls 22 percent of the market, and plans to increase production by 12 percent. There some 150 feed centers in Israel. These are communal feed mills operated by local farming communities (i.e., *Kibutzim*), and sell their feed mix to the cattle industry. Fifteen of these are large feed centers servicing the largest cattle producers. Beef production in Israel is relatively expensive due to the climate, water scarcity, and limited land availability. Post estimates that the total market for the Israeli feed milling industry (feed millers and feed centers) is about 4 million MT (excluding hay and silage). Their typical formulation is composed of grains, oilseed meals (i.e., soy, sunflower, and canola), and other feed sources such as DDGS and corn gluten feed. Israeli feed mills export about 15 percent of their production to Jordan and the Palestinian Authority.

Table 4: Israel, Feed Prices (U.S. Dollars/MT)

	August 2017	August 2018	% Difference
Corn	192	213	+11
Barley	190	240	+26
Feed wheat	195	235	+20
Soy meal	450	500	+11
Gluten feed	210	265	+26
Canola meal	245	300	+18
Sunflower meal	220	315	+43
DDG	235	272	+16
Exchange rate INS/$	3.601	3.66	-3.7

Source: Israeli Cattle Breeders Association, FAS Tel Aviv office research.

TRADE:

FAS Tel Aviv forecasts Israel's imports of corn in MY 2019/20 to reach 1.65 MMT, of which 200,000 MT are expected to be from the United States. In recent years, corn imports originate mainly from Ukraine, Argentina, and Brazil. Marketing year 2018/19, saw imports of 200,000 MT of U.S.-origin corn, up 88,000 MT compared to the previous year.

U.S-origin corn exports to Israel over the past decade are struggling due to Black Sea region (namely Ukraine) and South America-origins more competitive pricing, lower shipping costs, and growing quality concerns with U.S. corn. U.S.-origin corn shipments typically arrive with a higher percentage of broken kernels than comparable shipments from other sources.

Ukrainian and other Black Sea corn sources' proximity to Israel, results in a freight advantage over the United States and South America. Israeli importers report that Ukrainian corn, including freight, may be

as much as $30/MT lower than U.S. product. Corn imports over the past ten years have ranged between 900,000 MT to 1.7 MMT, and expectations are that the volume will remain within this range for the near future.

Israel remains a steady, long-time customer of U.S. corn co-products including DDGS and corn gluten feed. In recent years, DDGS and CGF imports have increased significantly. In marketing year 2018/19, Israel imported some 655,000 MT of CGF and DDGS, of which 93 percent originated in the United States. This figure has doubled in the last decade. The country's dairy sector is a heavy user of DDGS and CGF, while some DDGS also goes to poultry consumption.

STOCKS:

FAS Tel Aviv forecasts Israel's MY 2019/20 ending stocks at 100,000 metric tons. Post understands that these stocks go into government storage, as well as in privately owned feed mills and centers.

Table 5: Corn Production, Supply and Demand Data Statistics

Corn	2017/2018		2018/2019		2019/2020	
Market Begin Year	Oct 2017		Oct 2018		Oct 2019	
Israel	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	0	0	0	0	0	0
Beginning Stocks	97	97	148	122	0	80
Production	0	0	0	0	0	0
MY Imports	1861	1755	1700	1550	0	1650
TY Imports	1861	1755	1700	1550	0	1650
TY Imp. from U.S.	757	112	0	200	0	200
Total Supply	1958	1852	1848	1672	0	1730
MY Exports	10	10	10	10	0	10
TY Exports	10	10	10	10	0	10
Feed and Residual	1700	1620	1600	1482	0	1520
FSI Consumption	100	100	100	100	0	100
Total Consumption	1800	1720	1700	1582	0	1620
Ending Stocks	148	122	138	80	0	100
Total Distribution	1958	1852	1848	1672	0	1730
Yield	0	0	0	0	0	0
(1000 HA) ,(1000 MT) ,(MT/HA)						

Source- Ministry of Agriculture and Rural Development, Central Bureau of Statistics, Farm Associations, FAS Tel Aviv.