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New Zealand Livestock Feed Situation 2017 to 2020

Report Categories:
Grain and Feed
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Report Highlights:
Overall animal feed demand is expected to continue to grow as the New Zealand's dairy, poultry, and other livestock sectors continue to expand. Post anticipates rising demand for animal feed.

Summary

Overall animal feed demand is expected to continue to grow as the New Zealand's dairy, poultry, and other livestock sectors continue to expand. With continued one to two percent annual growth in the dairy sector and a projected nine percent growth in the poultry and other animal sectors between 2017 and 2020, Post anticipates rising demand for animal feed. In addition, New Zealand's major dairy processor, Fonterra is planning to implement maximum vegetable fat level requirements for milk production, which may limit the use of palm oil-based products and increase demand for alternative animal feed supplies.

The Present Situation

Total animal feed consumption (grain, corn silage, and imported feeds) is estimated to have increased by 27 percent between 2012/2013 and 2017/2018 from 3.84 million metric tons (MMT) to 4.89 MMT. Other domestically grown forage crops such as brassicas, fodder beet, pasture hay, silage, and cereal whole crop conserved used as silage are not included in this analysis because there is no accurate data.

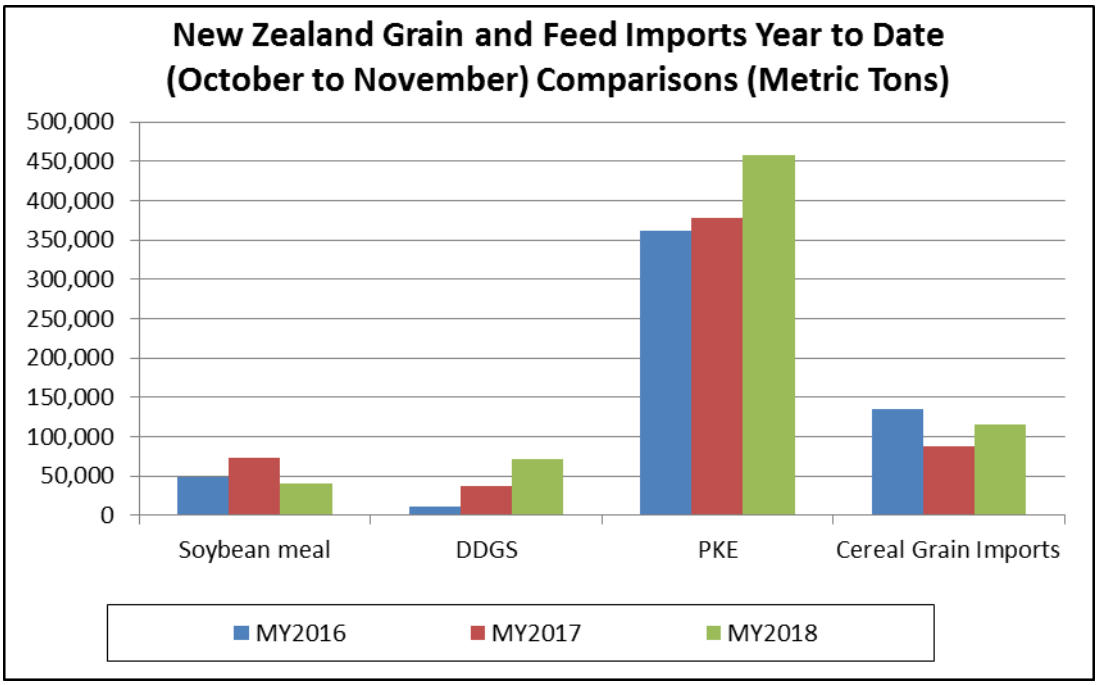
New Zealand Animal Feed Production, Supply, and Demand for Grain, Corn Silage, and Imported Feeds

New Zealand: Production Supply & Distribution for Animal Feeds (MT)	2013	2014	2015	2016	2017	2018
	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
	Market Year Begin: Oct 2012	Market Year Begin: Oct 2013	Market Year Begin:Oct 2014	Market Year Begin:Oct 2015	Market Year Begin:Oct 2016	Market Year Begin:Oct 2017
Beginning Stocks	475,000	475,000	600,000	900,000	750,000	625,000
Total Domestic Feed Production	1,851,913	1,976,367	1,832,532	1,757,513	1,634,357	1,868,663
Total Imports	2,005,451	2,706,719	2,924,857	2,284,733	2,964,003	3,000,000
Total Supply	4,332,364	5,158,086	5,357,389	4,942,246	5,348,360	5,493,663
Total Exports	13,195	13,358	10,198	9,192	6,007	5,000
Dairy Feed Use		*3,493,728*	*3,361,570*	*3,062,812*	*3,562,490*	*3,699,179*
Poultry Feed Use (eggs & meat)		*592,000*	*609,954*	*627,909*	*645,863*	*663,818*
Other Feed Use (Pork, Aqua, Beef)		*459,000*	*475,667*	*492,333*	*509,000*	*525,667*
Total Animal Feed Use	3,844,169	4,544,728	4,447,191	4,183,054	4,717,353	4,888,663
Total Consumption	3,844,169	4,544,728	4,447,191	4,183,054	4,717,353	4,888,663
Ending Stocks	475,000	600,000	900,000	750,000	625,000	600,000
Total Distribution	4,332,364	5,158,086	5,357,389	4,942,246	5,348,360	5,493,663

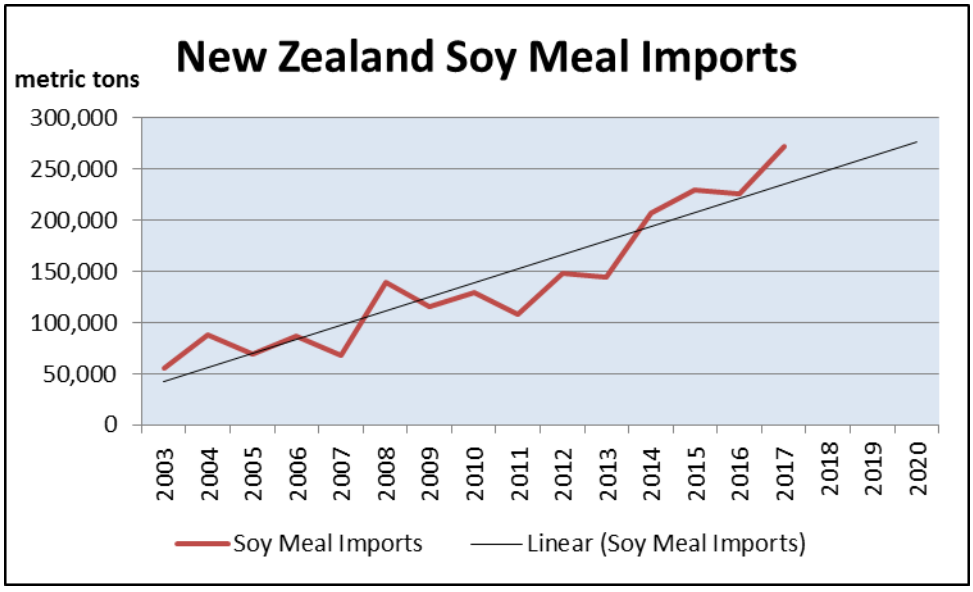
Source: Post Estimates; GTA; AIMI NZ production estimates; FAR; FMA; DairyNZ; NZGSTA

New Zealand's domestic animal feed and forage industries produce 1.6 to 2 million metric tons (MMT) of product per year. Post forecast 2017/2018 production at 1.87 MMT. Given the country's limited grain production capacity, New Zealand imported 2.96 MMT of grain and feed in 2016/2017 and is expected import similar volumes in 2017/2018. Palm Kernel Extract (PKE) is the largest imported

animal feed, which is primarily used as dairy cow feed supplement when pasture supplies cannot match cow feed demand. PKE will be discussed further in this report; however, it is important to note that any change to milk production requirements could have an enormous impact on feed demand.



Source: GTA



Source: GTA

Soy meal imports are gradually trending upwards and are expected to continue as the feed demand by the poultry, other animal (i.e. pets, and horses), and aquaculture sectors continue to grow.

Looking Ahead – the Leading Dynamics

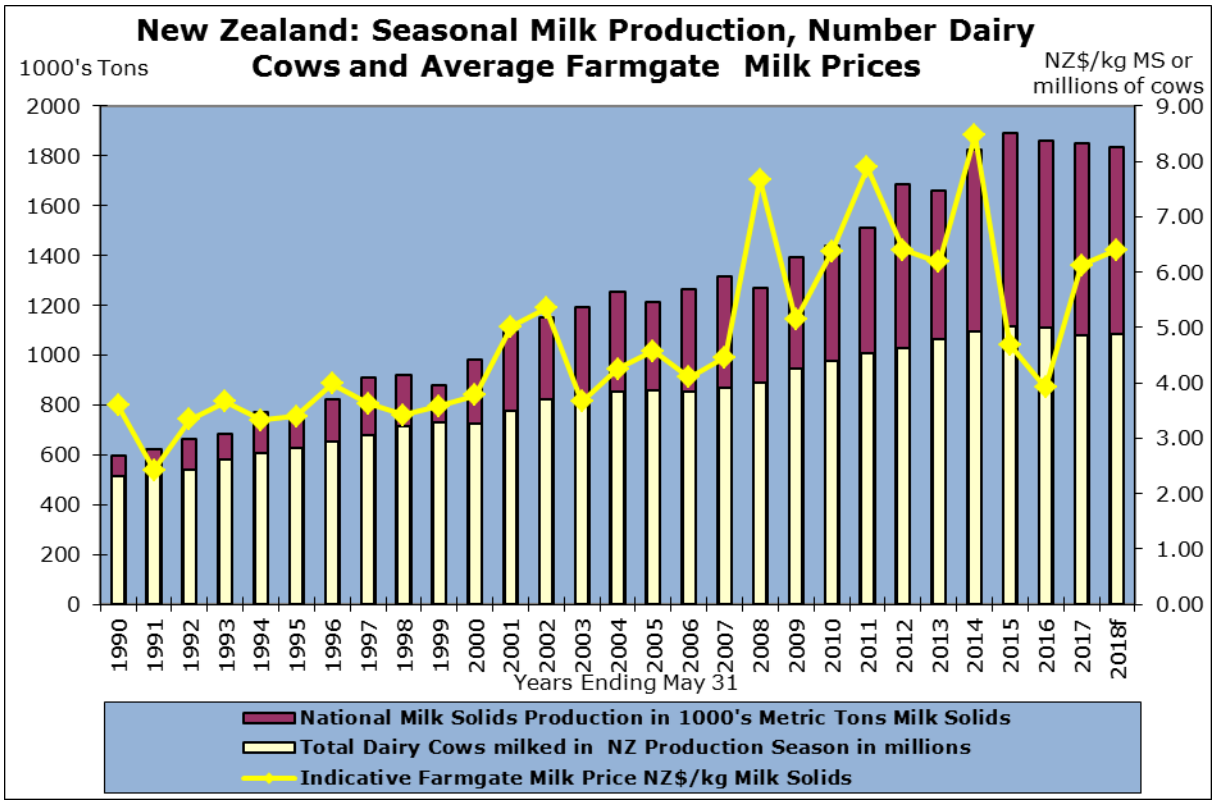
Based on current animal feed consumption and discussions with industry sources, Post believes the leading dynamics that will shape animal feed demand for the next two years are:

a) National milk production trends;

b) Potential growth in the poultry sector and companion animal sectors(dogs, cats, horses, minor species); and

c) Possible limitations on the use of PKE derived feed.

Dairy Sector Growth and Forecast Dairy Demand



Source: LIC, DairyNZ, StatsNZ, Post Estimates

New Zealand's dairy industry grew six percent annually from 2009 to 2014, but growth has stalled since 2015 as a result of a) two years of low milk prices (2015 and 2016); b) poor weather conditions (2016 and 2017; and new environmental regulations starting to have an effect on production . Based on these factors, Post believes it is unlikely that the national dairy herd numbers will return to the growth seen between 2008-2015, but will remain around current levels (approximately five million head +/- 150,000).

Despite the slowdown in herd numbers, the dairy sector is still expected to grow by one to two percent per annum as farmers are likely to concentrate on efficiency gains and cow productivity. Based on

current feed conversion rates and if feed supply is maintained at current levels, a one to two percent production growth would result in a net feed shortfall in the dairy sector of between 100,000 MT to 915,000 MT per year by 2020. In short, even the slightest changes in animal and dairy production can have an impact on New Zealand's animal feed demand.

Although the use of supplementary feed in the dairy sector has steadily increased over the last 15 years, grazed pasture still comprises 45% to 95% of dairy cow diets. Most dairy farms in New Zealand utilize 75% to 85% of pasture lands to feed their cows. The main supplements, in order of volume used are: PKE, grass silage, corn silage, fodder beet crops (harvested and grazed in situ), brassica crops grazed in situ, and barley, corn, or wheat grain.

PKE

As mentioned earlier, Palm Kernel Extract (PKE) is the largest imported animal feed in New Zealand, which is nearly all used as dairy cow feed supplement when pasture supplies are not sufficient. PKE use in New Zealand has soared over the last ten years. PKE is inexpensive and easy to use and imports have surged to 2.1 MMT in 2016/2017 from almost zero in 2000/2001. Given its size and share of the animal feed market, the dairy sector heavily influences demand for feed imports, including PKE. However, surplus PKE in a cow's diet affects the fat quantity and composition in milk.

In May 2017, Fonterra - New Zealand's largest dairy producer with 80-82 percent share of the market, indicated that it would begin testing milk for vegetable fat because of the effect it has on the composition of milk and the ultimate quality of dairy products. The fat evaluation index grading system Fonterra has developed will come into force on September 2018 and will penalize farmers if they supply milk which exceeds the established threshold.

On average New Zealand cows are each consuming 400 to 420 kilograms PKE per year or 1.5 kilograms /day/cow for an average 270 day lactation. Feeding guidelines suggest no more than three kilograms /day/cow should be fed. Considering PKE is usually fed in times when there is insufficient pasture supply, many farms would be feeding in excess of three kilograms PKE/day/cow for significant durations. It is difficult at this stage to get a clear understanding of how this will ultimately affect the use of PKE. However, Post suspects the new fat content requirements will adversely impact the future growth PKE imports. PKE imports are likely to return to 2015/2016 levels ranging between 1.6 MMT to 1.7 MMT.

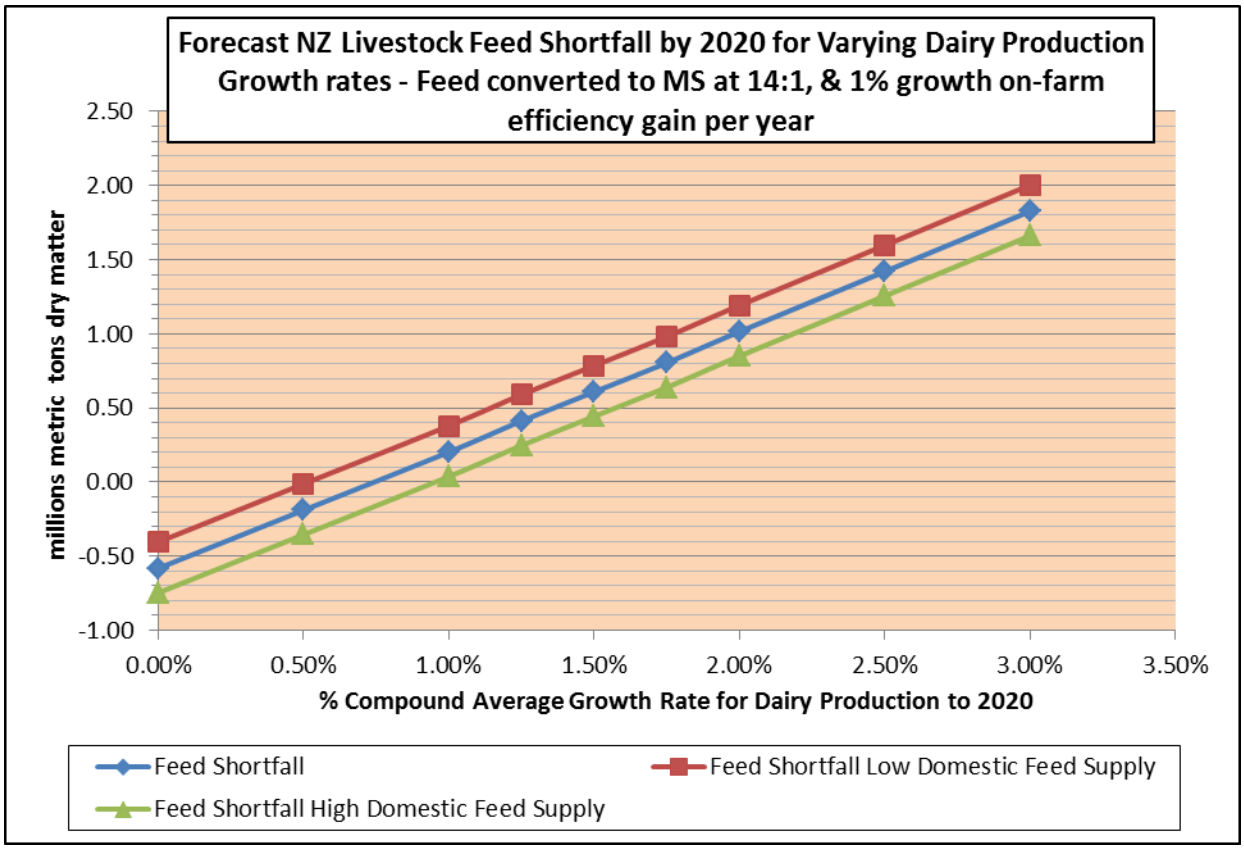
Post forecast PKE use to reduce by at least 250,000 MT per annum by 2020, which would place additional demand on alternative supplements.

Livestock Sector Demand

New Zealand's poultry, pet, horse and aquaculture sectors are forecast to expand in the next several years. Accordingly, demand for feed in these same sectors is also expected to grow by 104,000 MT or 9% by 2020. Combined with the dairy feed shortfall and the likely reduction in PKE imports, this could

lead to an expected feed shortfall in New Zealand of 450,000 MT to 1.27 MMT per year by 2020. For this analysis Post anticipates domestically produced grain and corn whole crop silage will have an average annual production of 1.81 MMT between 2018 through 2020; equal to the historical average of the last five years.

The chart below illustrates the effect of varying the annual dairy production growth on the overall change in total animal feed demand. It is based on a continuation of the current feed conversion rate for dairy cows but with an overall farm efficiency improvement of one percent per year. The growth in other animal demand for feed was not varied. The effect of high or low domestic production was incorporated. It can be seen that at the favored one to two percent per annum dairy growth the increase in demand for feed is between a minimum of 38,000MT by 2020 up to a maximum of 1.19MMT depending on domestic grain and feed supply.



Sources: Post Estimates, DairyNZ, LIC

Filling the Potential Feed Shortage

Post believes there are several options to address the potential feed shortage. Over the last five years for the dairy sector, at the general conversion rate of 14 kilograms dry matter of feed to one kilogram milk solids, the only supplemental feeds that have been generally profitable to use have been: pasture silage; whole crop corn silage; PKE; and nitrogen fertilizer to boost pasture growth. Only the best operators

getting their cows to convert supplemental feed to milk at a 10 to one ratio can generally profitably use corn, wheat, or barley grain.

Potential options to overcome the potential feed shortfall are:

- Achieve better pasture growth on farm through re-grassing with more productive cultivars and better management of pastures;

- Reduce cow numbers to balance feed demand with pasture production. Total milk solids produced would plateau, but production per cow would increase;

- Dairy farmers expand their growing areas for feed crops. The two existing crops already being grown: corn for whole crop silage and fodder beet could fill the dairy demand deficit if dairy farmers devoted an additional three to six percent of their farm areas for this process;

- The domestic arable farm sector could produce more: grain, fodder beet, corn whole crop or pasture silage. However, this would displace land from other activities such as small seed or vegetable production or from sheep and beef production, so the switch would need to be economically viable; and

- Feed and grain imports could increase, although imported feed would need to be as cost-efficient as PKE if the target is the dairy sector. However, the poultry and other animal feed sectors can profitably make use of grain and protein supplements such as soy meal and Dried Distillers Grain and Solubles (DDGS). With the growing demand for feed in the poultry and companion animal sectors it is likely there will be a growing demand for imports of soymeal and grains. DDGS may fill some gaps, but it is most cost efficient as a protein supplement, which for most dairy farms is not an issue as they usually need a source of energy dense carbohydrate to fill feed deficits.

Import Tariff Rates for Animal Feed and Market Access/Biosecurity Requirements

New Zealand Tariff Schedule For Animal or Human Feeds Imported From United States	
Feed Category	**tariff rate**
All Cereal Grains - Imported whole	0
Processed Cereal Grains	5%

Malt	0
Starch	5%
Soy Beans	0
Soy Bean Meal	0
Dried Distillers Grains	0
Palm Kernel Extract (general tariff for any origin)	0

Source: NZ Customs – Working Tariff Document

New Zealand has very tight bio-security requirements for any goods or people entering the country. For information on the specific market access requirements, you can go to:

https://www.mpi.govt.nz/law-and-policy/requirements/import-health-standards/

Search for: Grains/Seeds for Consumption, Feed or Processing Plant health Requirements-Import Health Standard; and Processed Animal Feeds of Plant Origin-Import Health Standard.

For additional information on exporting to New Zealand, visit the FAS website and the review the Food and Agricultural Import Regulations and Standards reports for New Zealand, which can be found at:

https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Food%20and%20Agricultural%20Import%20Regulations%20and%20Standards%20-%20Narrative_Wellington_New%20Zealand_12-21-2017.pdf

And

https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Food%20and%20Agricultural%20Import%20Regulations%20and%20Standards%20-%20Certification_Wellington_New%20Zealand_12-14-2016.pdf