NEW ZEALAND SURVEY OF CEREAL AREAS AND VOLUMES: JULY 1, 2018

The objective of this AIMI survey of cereal growers in New Zealand (NZ) was to determine, as at July 1, 2018:

- *the final size of the 2018 NZ harvest of wheat, barley and oats*
- *sales channels and level of on-farm storage, both sold and unsold, of the 2018 harvest*
- *autumn sowings of wheat, barley and oats, and sowing intentions for the spring of 2018*

Survey details

The data from 114 NZ survey farms as at July 1, 2018 were scaled up to the national level using the most recent NZ Agricultural Production Statistics (the 2017 NZ Census). As with all surveys, there is a margin of error which needs to be considered in relation to this report. These figures reflect the position at the 1st July 2018 and there will have been changes since this time. Note that unsold and sold grain carried over from the 2017 harvest was not estimated in this survey; however, on 1st April 2018 this carry-over grain was only 1.5% of the 2017 harvest, so adding any grain remaining on farms from 2017 would do little to change the complete picture.

Key Points at July 1, 2018 *(figures have been rounded to the nearest 100):*

- Average yields were down on last season for all six crops.
- Unsold stocks of feed wheat are higher but feed barley stocks are lower than this time last year. Unsold stocks of milling wheat, malting barley, milling oats and feed oats are down on last year.
- The area sown in wheat and barley is expected to decrease this season (predicted to be down 8%). Autumn/winter sowing has proven difficult in some areas, with autumn/winter sown area being 15% down on intentions as at 1st April 2018. Some crops have been drowned out and some of these may not be re-sown. Wet conditions have also delayed sowing in some regions.

Final estimated average yields were down this season compared to last season for all six crops, with milling and feed wheat yields down 12%, malting barley yields down 9%, feed barley yields down 10%, milling oats yields down 17% and feed oats yields down 6% on last season. The tonnages of unsold feed grain were estimated at 68,300 t of feed wheat and 72,400 t of feed barley, as at 1 July 2018; in addition, there was an estimated 19,200 t of unsold milling wheat. The predicted 2019 harvest hectares, when totalled over all six cereal crops, are 8% down on the 2018 harvest hectares (from 105,300 hectares to 97,300 hectares).

Milling wheat: Estimated final total tonnage (81,100 t) was down 24% compared to last year's harvest. Of this total, 76% has been sold (61,900 t), although a large amount of the sold grain is still stored on farm (54%). The amount of unsold grain is 19,200 tonnes (24%), which is less than at the same time last year, 1 July 2017 (25,000 t). The amount of unsold grain decreased between 1 April and 1 July 2018 by 11,600 t (or 38%), as compared to a 9,700 tonne decrease in unsold grain between the same dates last year.

Feed wheat: Estimated final total tonnage (296,100 t) was down 1% compared to last year's harvest. Of this total, 77% has been sold (227,800 t), with 47% of the sold grain still stored on farm. The amount of unsold grain is 68,300 tonnes (23%), which is more than at the same time last year, 1 July 2017 (63,600 t). The amount of unsold grain decreased between 1 April and 1 July 2018 (down by 30,800 t, or 31%), as compared to a 25,600 tonne decrease in unsold grain between the same dates last year.

Feed barley: Estimated final total tonnage (308,900 t) was up 32% compared to last year. Of this total tonnage 77% has been sold (236,600 t), with 47% of the sold grain still stored on farm. The amount of unsold grain is 72,400 tonnes (23%), which is less than at the same time last year, 1 July 2017 (89,800 t). The amount of unsold grain decreased between 1 April and 1 July 2018 (down by 33,900 t, or 32%), as compared to a 30,700 tonne decrease in unsold grain between the same dates last year.

For other cereals: Compared to last year, estimated final total tonnage for malting barley (63,000 t) was down by 2%, milling oats (13,400 t) was down by 48%, and feed oats (4,100 t) was down by 56%. Malting barley had 2% of the total harvest unsold (1,200 t) while milling oats and feed oats had 2% (300 t) and 8% (300 t) unsold, respectively, as at 1 July, 2018. Of the sold grain, 9% of malting barley was still on farm, as compared to 95% of milling oats and 47% of feed oats. Between 1 April and 1 July 2018, the amount of unsold grain decreased by 60% for malting barley, decreased by 18% for milling oats, and decreased by 30% for feed oats.

Sowings and sowing intentions: The actual area sown in autumn/winter wheat or barley, as at 1 July 2018, was down 15% overall on autumn sowings plus intentions as at 1 April 2018, with some growers saying it had been too wet to sow and with some crops drowned out. When autumn/winter sowings were combined with spring sowing intentions, the area sown or to be sown in wheat or barley was predicted to be down overall by 8% as compared to the area harvested in 2018, or up by 13% on the area harvested in 2017. Over the two-year period (2017 harvest to predicted 2019 harvest), the harvest area for feed barley is predicted to increase by 24%, while the harvest area for feed wheat is predicted to increase by 20% and the harvest area for milling wheat is predicted to decrease by 33%. Over this same period, the harvest areas for malting barley, milling oats and feed oats are predicted to decrease by 0% (no change), 41% and 28% respectively. When totalled over all six cereal crops (including oats), the 2019 harvest hectares are predicted to be 8% down on the 2018 harvest hectares (from 105,300 hectares to 97,300 hectares).

Milling wheat (Tonnes)

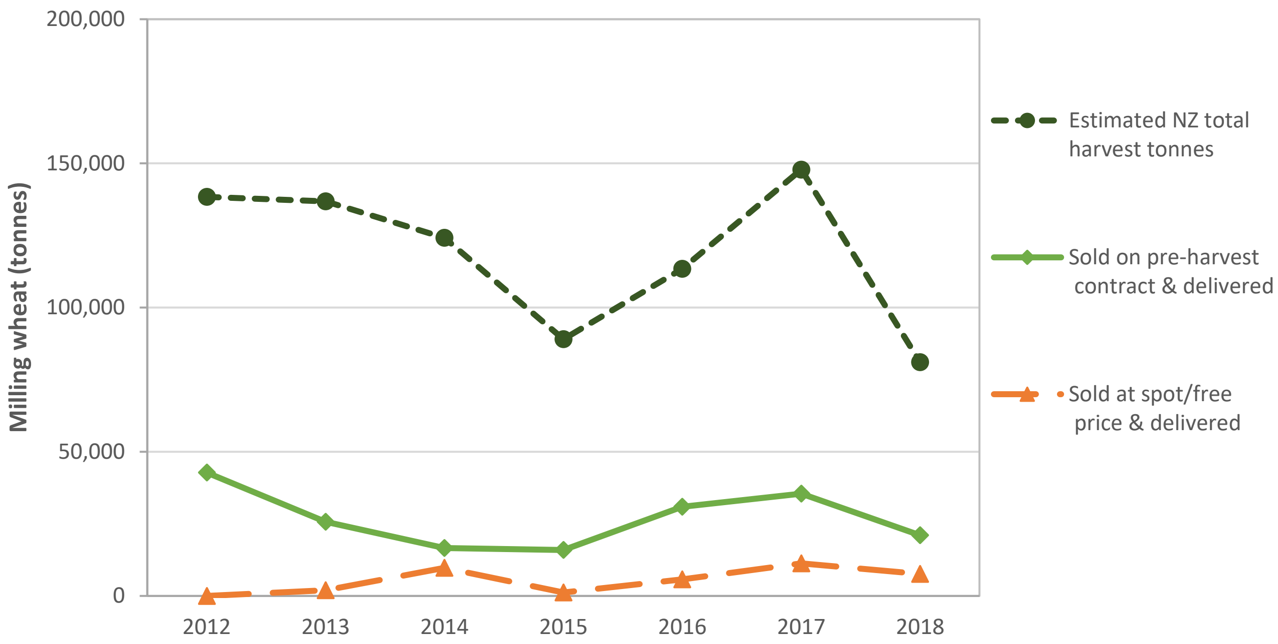

Figure 1a. NZ harvest tonnage and sales channels for Milling wheat (tonnes) as estimated on July 1 each year. (Note: All categories relate to that season's harvest, excluding carryover stock. "Sold at spot/free price and delivered" includes grain sold for feed. Historical data are sourced from previous AIMI July Reports. In 2012 "Sold at spot/free price and delivered" was zero since the question was simply "sold and delivered", with responses reported as "Sold on pre-harvest contract and delivered"; also, there was no question on "grain sold for feed".)

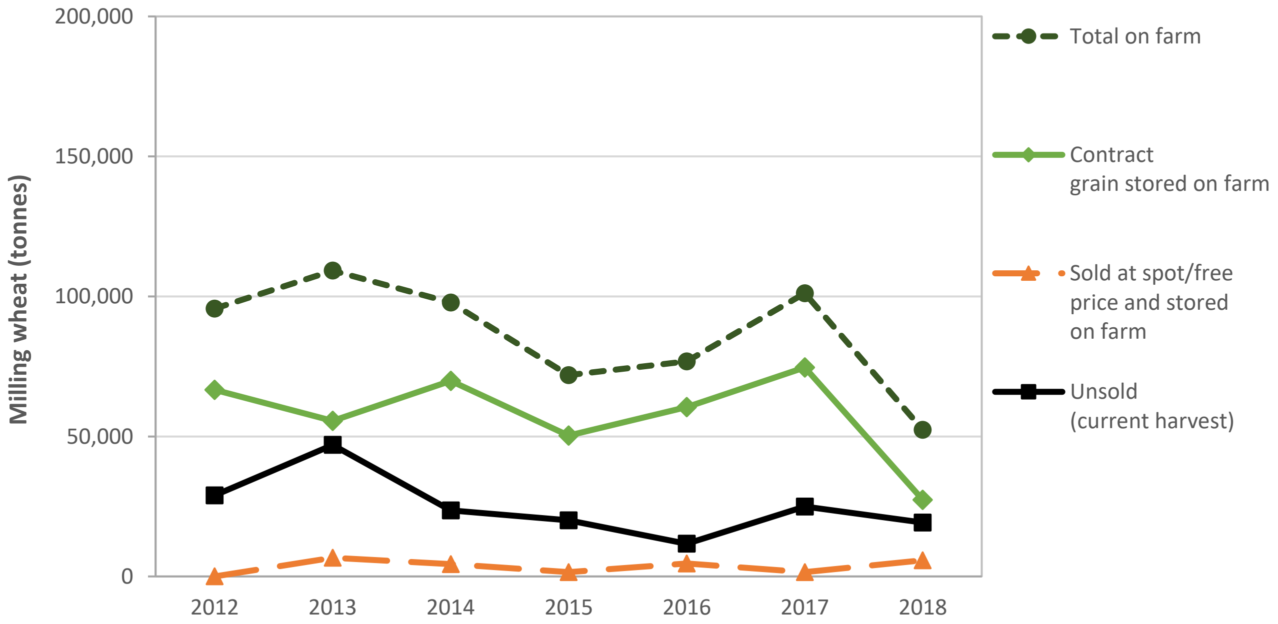

Figure 1b. NZ stocks on farm for Milling wheat (tonnes) as estimated on July 1 each year. (Note: Carryover stock from the previous season is excluded. Historical data are sourced from previous AIMI July Reports. In 2012 "Sold at spot/free price and stored on farm" was zero since the question was simply "sold and stored on farm", with responses reported as "Contract grain stored on farm".)

Feed Wheat (Tonnes)

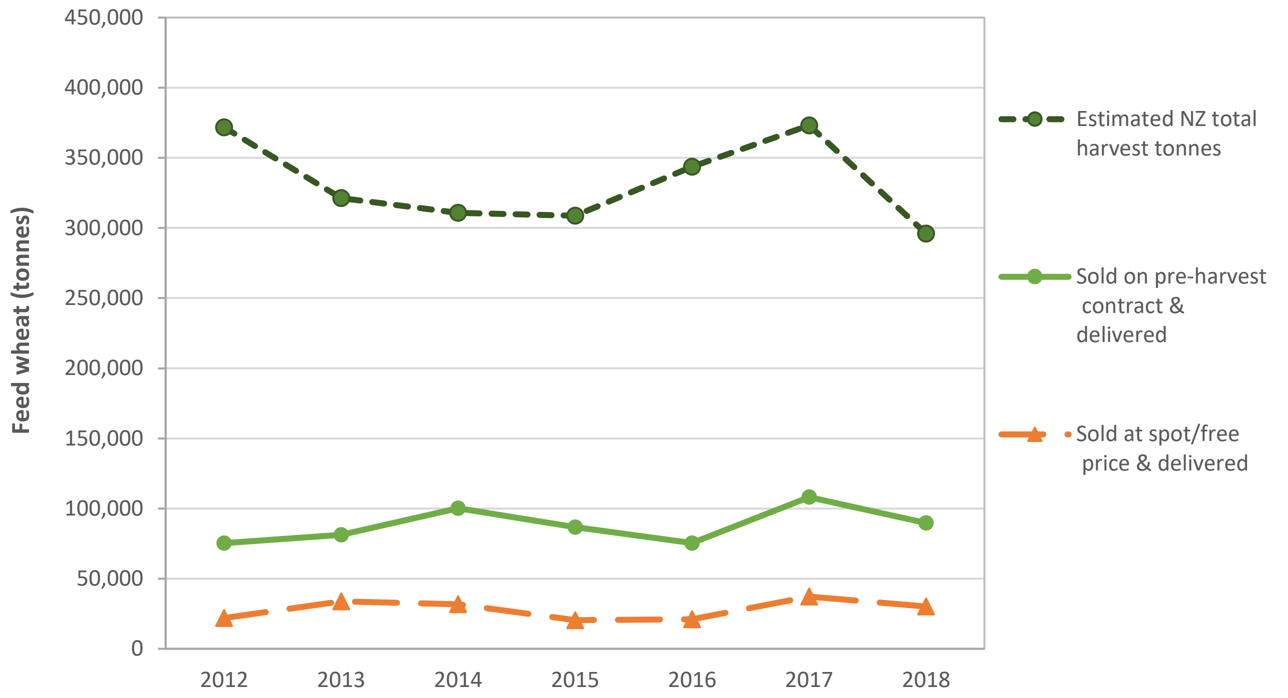

Figure 2a. NZ harvest tonnage and sales channels for Feed wheat (tonnes) as estimated on July 1 each year.
(Note: All categories relate to that season's harvest, excluding carryover stock. "Sold at spot/free price and delivered" includes grain used on own farm. Historical data are sourced from previous AIMI July Reports.)

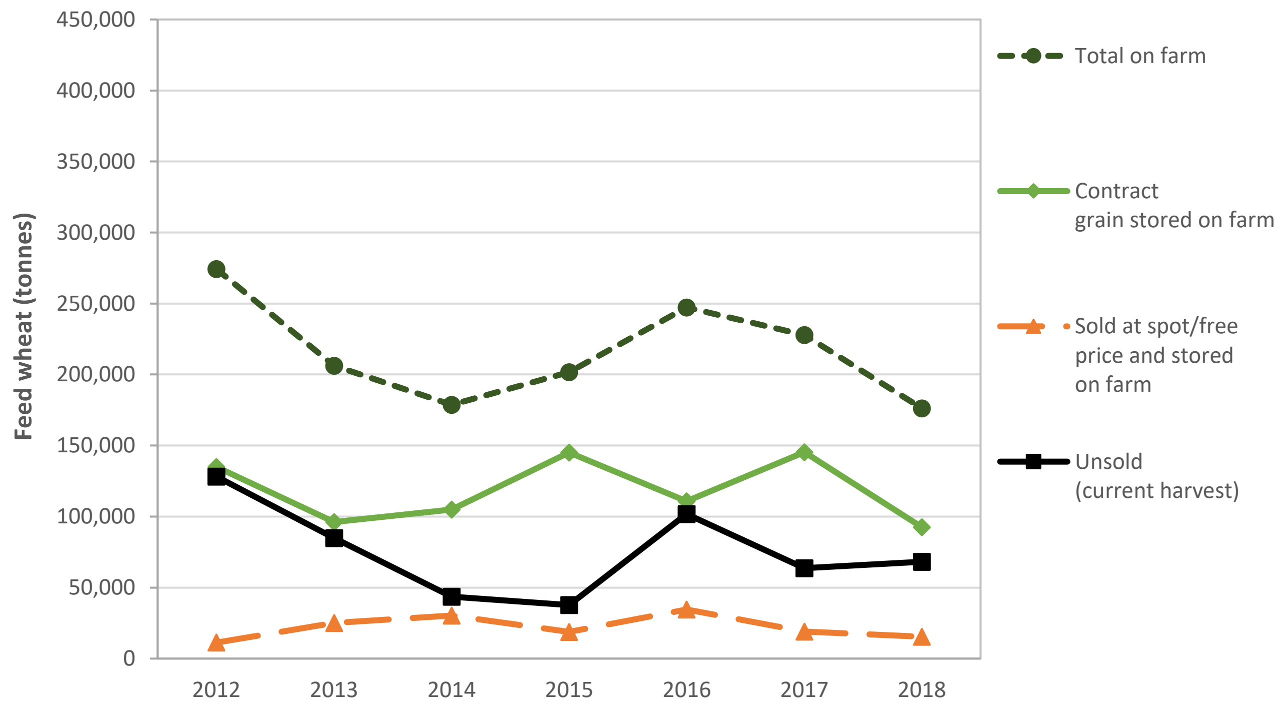

Figure 2b. NZ stocks on farm for Feed wheat (tonnes) as estimated on July 1 each year.
(Note: Carryover stock from the previous season is excluded. Historical data are sourced from previous AIMI July Reports.)

Feed Barley (Tonnes)

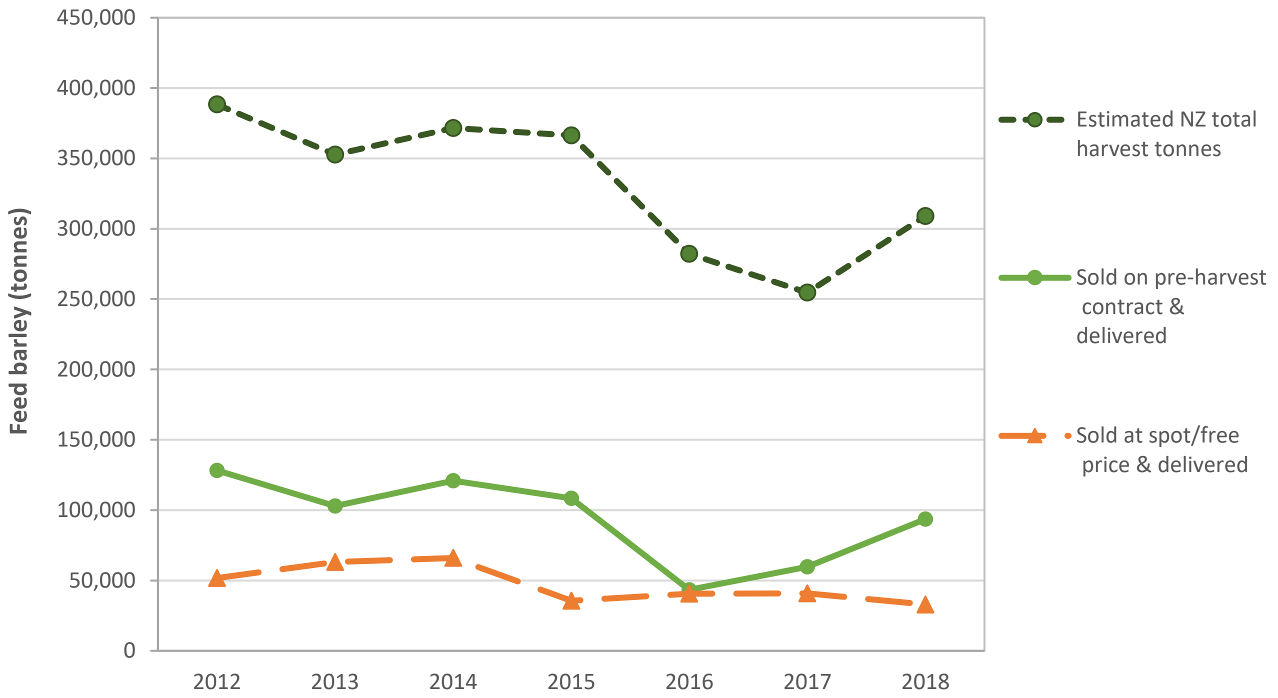

Figure 3a. NZ harvest tonnage and sales channels for Feed barley (tonnes) as estimated on July 1 each year.
(Note: All categories relate to that season's harvest, excluding carryover stock. "Sold at spot/free price and delivered" includes grain used on own farm. Historical data are sourced from previous AIMI July Reports.)

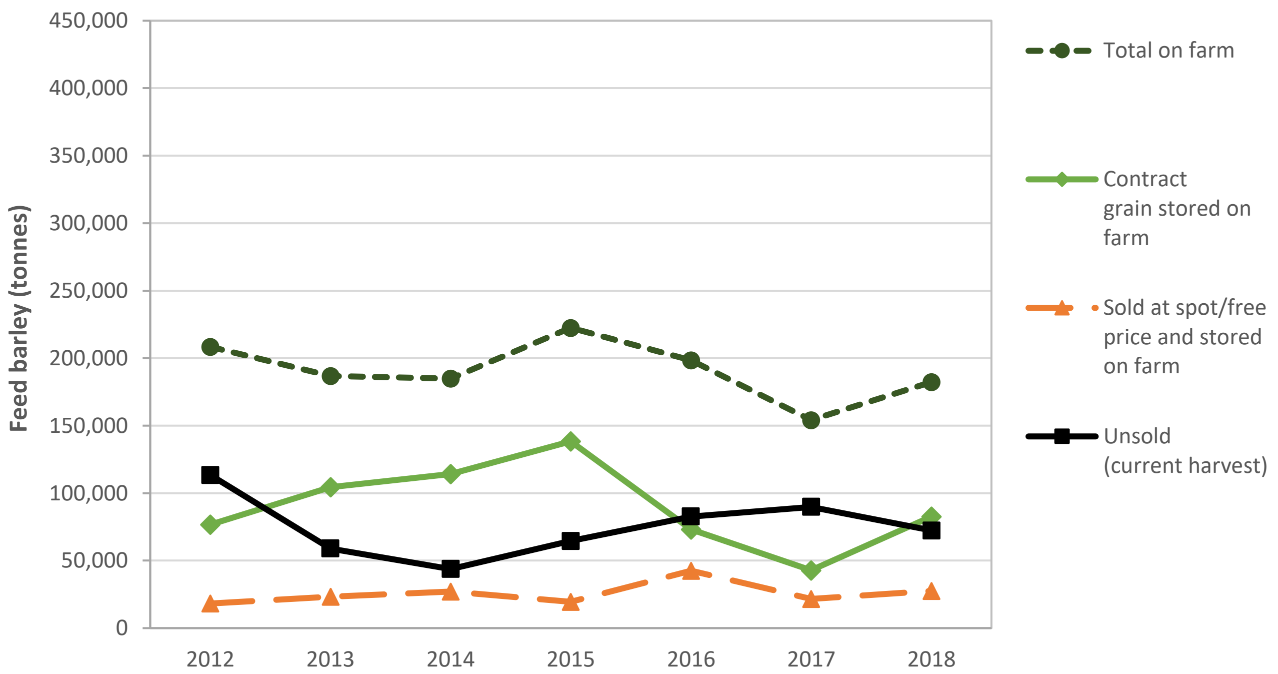

Figure 3b. NZ stocks on farm for Feed barley (tonnes) as estimated on July 1 each year.
(Note: Carryover stock from the previous season is excluded. Historical data are sourced from previous AIMI July Reports.)

Autumn/winter sowings and spring sowing intentions (combined) as at July 1 each year

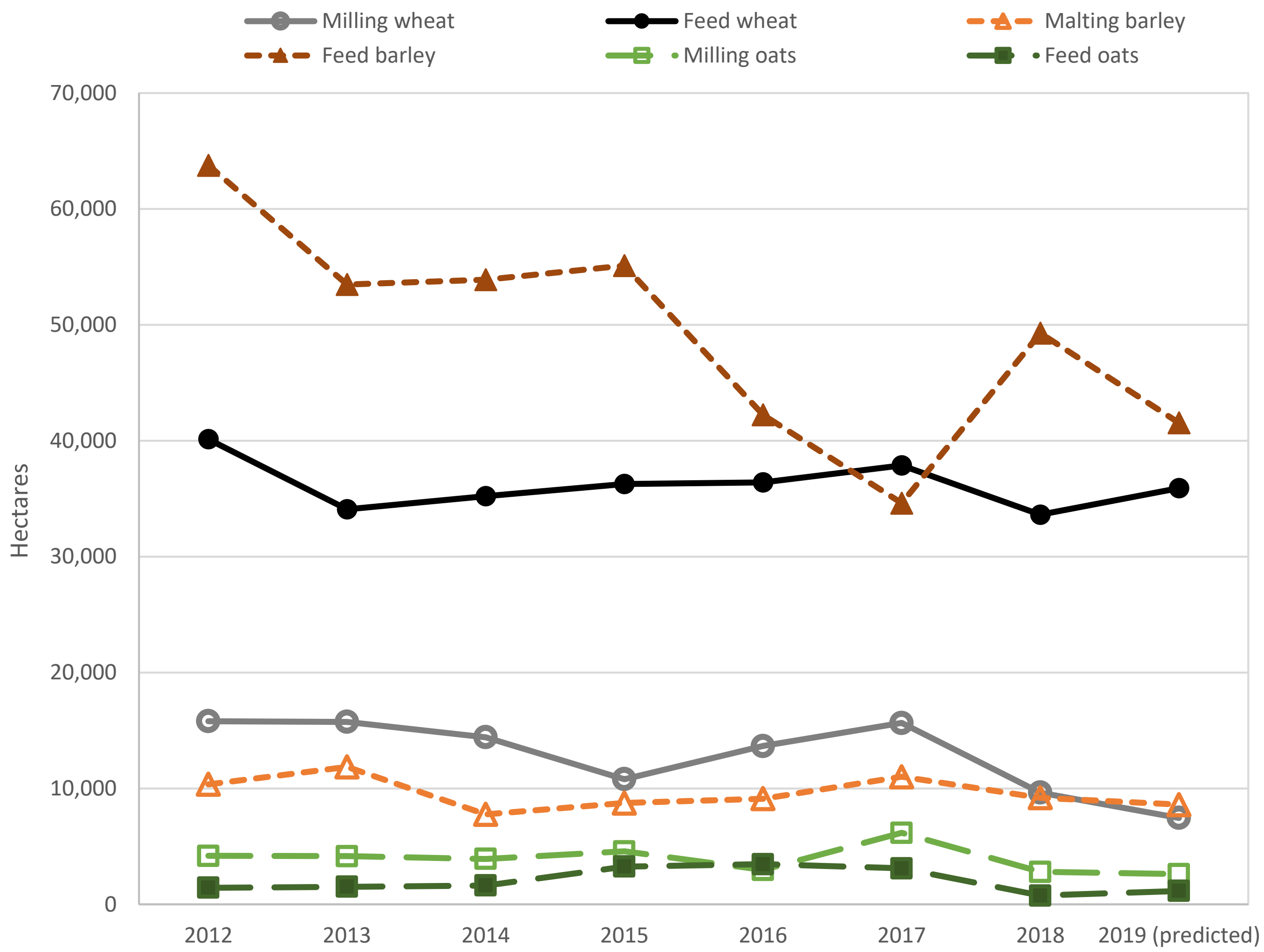

Figure 4. NZ harvest hectares for six cereal crops as estimated on July 1 each year, from 2012 to 2018 and predicted harvest hectares for 2019.
(Note: Figures for 2018 and 2019 (predicted) are from the current report and are a matched comparison (scaled up from a common set of growers), while other figures are from previous AIMI July reports.)

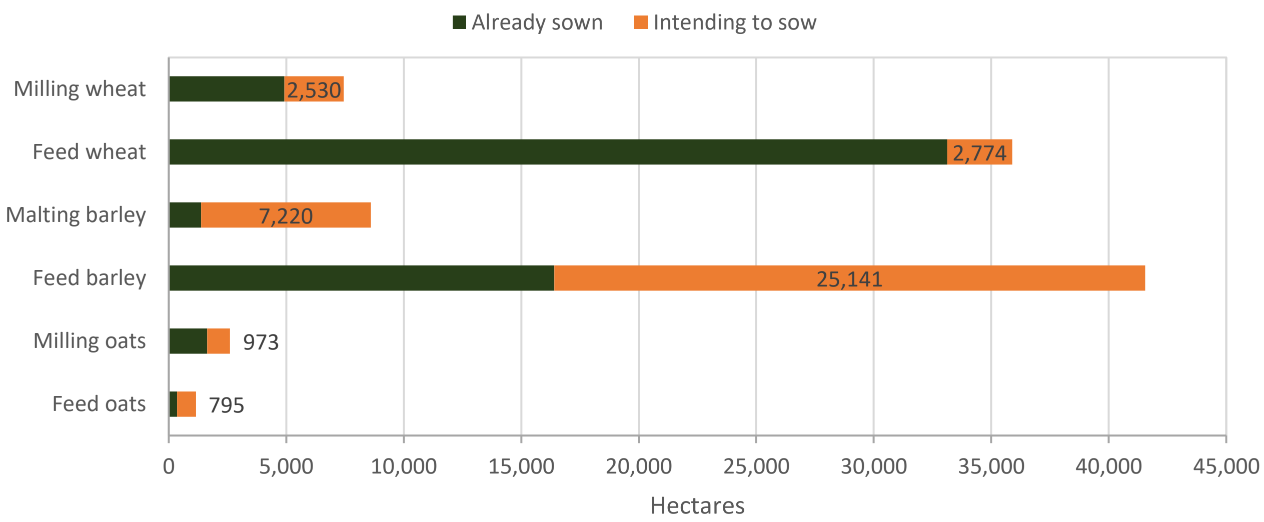

Figure 5. NZ autumn/winter 2018 sowings and spring 2018 sowing intentions (hectares) for six cereal crops as estimated on July 1, 2018.
(Note: Numbers at the end of each bar represent sowing intentions.)

Comparison of estimated NZ-wide yield (tonnes per hectare) between harvests

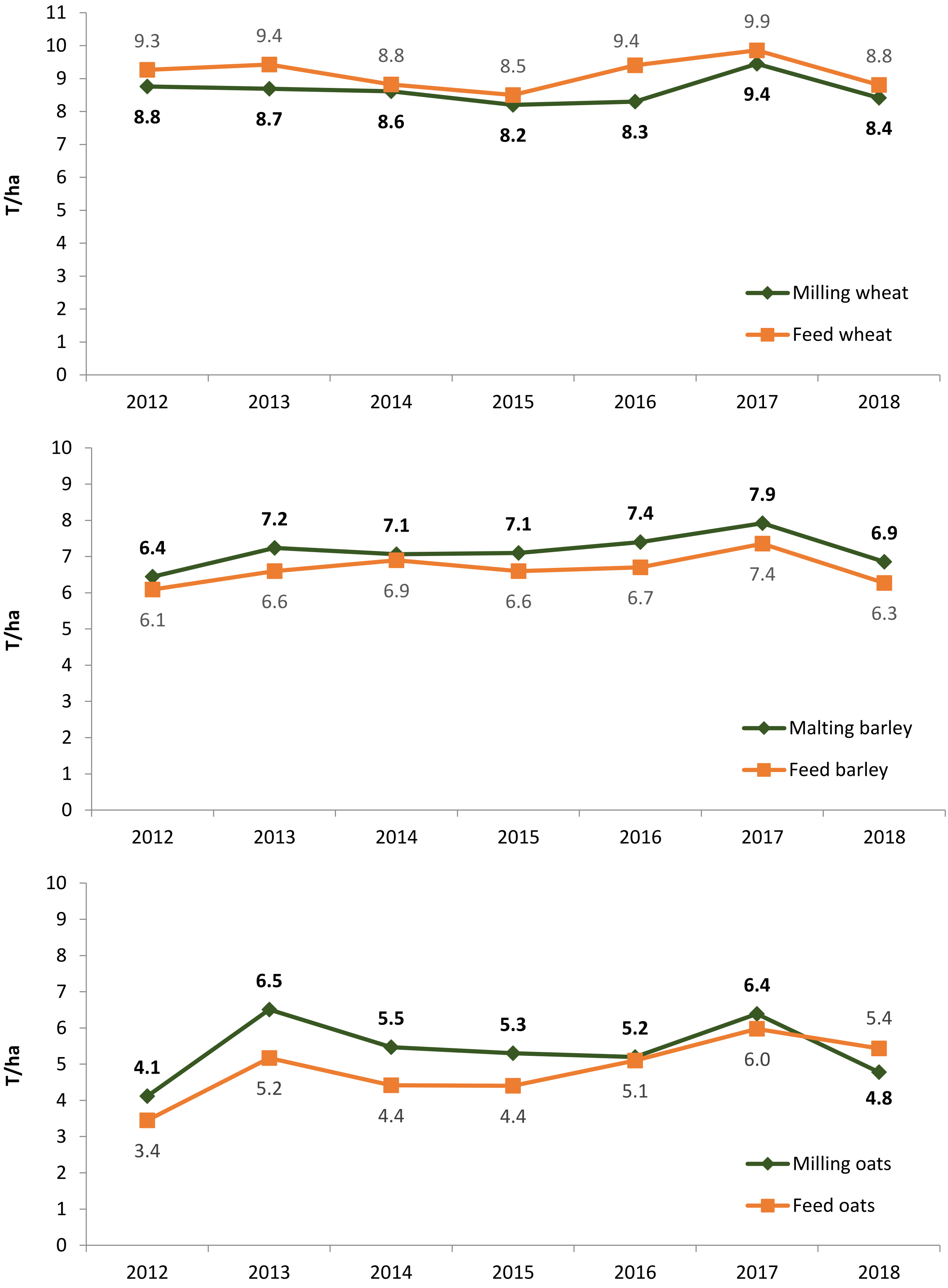

Figure 6. Comparison of NZ-wide yield (tonnes per ha) as estimated on July 1 each year, from 2012 to 2018 for six cereal crops.

(Note: Milling wheat contains biscuit and gristing varieties. Historical data are from AIMI reports for July 2012 to 2017.)

Table 1. Detailed estimated national figures for the 2018 harvest, plus sold and delivered tonnages, for six cereal crops as at July 1, 2018.

	Units	Milling wheat	Feed wheat	Malting barley	Feed barley	Milling oats	Feed oats
Number of farmers in the survey who harvested this crop in 2018		**39**	**74**	**24**	**89**	**10**	**12**
2017 harvest							
Estimated NZ total hectares, 2017 harvest	Ha	11,191	29,909	8,576	33,424	4,460	1,610
Estimated NZ total tonnes, 2017 harvest	Tonnes	106,541	298,659	64,381	233,219	25,671	9,312
2018 harvest							
Estimated NZ total hectares, 2018 harvest (final figures)	Ha	9,636	33,622	9,191	49,269	2,800	761
Estimated NZ total tonnes, 2018 harvest (final figures)	Tonnes	81,057	296,079	62,974	308,919	13,378	4,134
Sold under pre-harvest contract and delivered by July 1 2018	Tonnes	21,020	89,716	53,832	93,601	445	1,116
Pre-harvest contract grain stored on farm on July 1 2018	Tonnes	27,386	92,579	5,364	82,542	12,479	1,780
Sold at spot/free price and delivered by July 1 2018	Tonnes	1,015	28,741	1,039	29,636	170	752
Sold at spot/free price and stored on farm on July 1 2018	Tonnes	5,813	15,432	0	27,483	0	0
(For milling or malting only) Sold for feed by July 1 2018	Tonnes	6,635	-	1,511	-	16	-
(For feed only) Used on own farm (2018 harvest only) by July 1 2018	Tonnes	-	1,344	-	3,305	-	142
Unsold stocks on hand (2018 harvest only) on July 1 2018	Tonnes	19,188	68,269	1,228	72,352	267	344
Sales channels (2018 harvest)							
"Sold" under pre-harvest contract (total) by July 1 2018	Tonnes	48,406	182,295	59,196	176,143	12,924	2,896
Sold at spot/free price (total) by July 1 2018 (includes sold for feed and used on farm)	Tonnes	13,463	45,516	2,550	60,424	186	894
Delivery status of sold grain (2018 harvest)							
Sold and delivered (total) by July 1 2018 (includes sold for feed and used on farm)	Tonnes	28,670	119,801	56,382	126,542	631	2,010
"Sold" and stored on farm (total) on July 1 2018	Tonnes	33,199	108,010	5,364	110,025	12,479	1,780
Total sales (2018 harvest)							
Sold (grand total) by July 1 2018 (includes sold for feed and used on farm)	Tonnes	61,869	227,811	61,746	236,567	13,111	3,790
Unsold stocks on hand (2018 harvest only) on July 1 2018	Tonnes	19,188	68,269	1,228	72,352	267	344
Comparison of hectares and tonnages between last two harvests							
Estimated % change in hectares, 2017 to 2018 harvest	%	-14%	12%	7%	47%	-37%	-53%
Estimated % change in tonnes, 2017 to 2018 harvest	%	-24%	-1%	-2%	32%	-48%	-56%
Comparison of yields (t/ha) between last two harvests							
NZ-wide estimated yield, 2017 harvest	T/ha	9.5	10.0	7.5	7.0	5.8	5.8
NZ-wide estimated yield, 2018 harvest	T/ha	8.4	8.8	6.9	6.3	4.8	5.4
Comparison of Unsold grain as at July 1, 2018, with Unsold grain as at April 1, 2018							
Unsold (2018 harvest only) as at April 1 2018 (incl. unharvested grain) (new matched estimate, based upon scaling up data from exact same 114 survey farms as above)	Tonnes	30,819	99,071	3,088	106,261	324	489
Unsold (2018 harvest only) on July 1 2018 (as above)	Tonnes	19,188	68,269	1,228	72,352	267	344
Estimated drop in tonnes of Unsold grain, 1 April 2018 to 1 July 2018	Tonnes	11,631	30,803	1,861	33,909	57	146
Estimated % drop in tonnes of Unsold grain, 1 April 2018 to 1 July 2018	%	38%	31%	60%	32%	18%	30%
Note: A negative drop means that the tonnage of unsold grain from the 2018 harvest has increased since the last survey date (1 April, 2018).							
Comparison of Unsold grain as at July 1, 2018, with Unsold grain at the same date last year (July 1, 2017)							
Unsold (2017 harvest only) as at July 1 2017 (from July 1 2017 AIMI report)	Tonnes	24,981	63,621	3,409	89,750	3,798	5,160
Unsold (2018 harvest only) on July 1 2018 (as above)	Tonnes	19,188	68,269	1,228	72,352	267	344
Change in tonnes of Unsold grain, 1 July 2017 to 1 July 2018	Tonnes	-5,793	4,648	-2,181	-17,398	-3,531	-4,816

Statistics New Zealand is gratefully acknowledged for supplying final 2017 NZ Agricultural Production Census data on total hectares and tonnes for wheat, barley and oats.

Table 2. Sowings and sowing intentions for six cereal crops as at July 1, 2018.

	Milling wheat (ha)	Feed wheat (ha)	Malting barley (ha)	Feed barley (ha)	Milling oats (ha)	Feed oats (ha)
Number of farmers in the survey who have sown this crop in the autumn or winter or intend to sow in the spring, as at 1 July 2018	**29**	**77**	**23**	**87**	**8**	**10**
Estimated NZ total hectares, 2017 harvest	11,191	29,909	8,576	33,424	4,460	1,610
Estimated NZ total hectares, 2018 harvest	9,636	33,622	9,191	49,269	2,800	761
Estimated NZ total autumn/winter 2018 sowings as at July 1, 2018 (hectares, for harvest in 2019)	4,919	33,122	1,378	16,406	1,637	362
Estimated NZ total spring 2018 sowing intentions as at July 1, 2018 (hectares, for harvest in 2019)	2,530	2,774	7,220	25,141	973	795
Predicted NZ total hectares, 2019 harvest (Autumn/winter sowings 2018 and Spring 2018 sowing intentions combined)	7,449	35,896	8,598	41,547	2,611	1,157
Comparison of hectares between 2017, 2018 and 2019 (predicted) harvests						
Estimated % change in NZ total harvest hectares, 2017 to 2018 harvest	-14%	12%	7%	47%	-37%	-53%
Estimated % change in NZ total harvest hectares, 2018 to 2019 harvest (predicted)	-23%	7%	-6%	-16%	-7%	52%
Estimated % change in NZ total harvest hectares over two seasons, 2017 to 2019 harvest (predicted)	-33%	20%	0%	24%	-41%	-28%
Comparison of Autumn/winter 2018 actual sowings (as at July 1, 2018) with autumn/winter sowings plus intended sowings as at April 1, 2018 (based upon matched data)						
Estimated NZ total autumn/winter 2018 sowings and sowing intentions as at April 1, 2018 (date of previous survey) (hectares, for harvest in 2019)	5,725	36,914	2,949	20,267	1,660	814
Change in autumn/winter 2018 actual sowings (as at July 1, 2018) compared to autumn/winter sowings and sowing intentions as at April 1, 2018 (ha)	-806	-3,792	-1,571	-3,861	-23	-452
Percentage change in autumn/winter 2018 actual sowings (as at July 1, 2018) compared to autumn/winter sowings and sowing intentions as at April 1, 2018	-14%	-10%	-53%	-19%	-1%	-56%
Note: The matched comparison in the last three rows was based upon scaling up data from the *exact same* survey farms for both survey dates.						

In Table 2, feed barley sowings/intentions, as at 1 July 2018, show a 16% decrease as compared to the last harvest (2018), but a 24% increase as compared to the previous (2017) harvest. Feed wheat sowings/intentions show a continuing slow increase, with an estimated 7% increase compared to the last harvest (2018), and an estimated 20% increase over the previous harvest (2017). Conversely, milling wheat sowings/intentions have declined by a total of 33% over two years. As a total over all six cereal crops, sowings/intentions are 8% down on the last harvest (2018), but 9% up on the previous harvest (2017). Autumn/winter actual sowings, as at 1 July 2018, were down 15% on autumn/winter sowings/intentions as at 1 April 2018, with some surveyed growers saying it had been too wet to sow and with some crops being drowned out.