



The objective of this AIMI survey of New Zealand (NZ) cereal growers was to determine, as at October 10, 2023:

- *sales of the 2023 NZ harvest of wheat, barley and oats (milling/malting and feed crops) since July 1, 2023*
- *levels of on-farm storage, both sold and unsold, of the 2023 harvest*
- *spring 2023 sowings and sowing intentions of wheat, barley and oats (milling/malting and feed crops)*

Survey details

Data from 120 NZ survey farms who completed each of the last four cereal surveys (October 2022 and April, July and October 2023) were scaled up to the national level using the most recent, 2022, final NZ Agricultural Production Statistics (APS). These data reflect the position at the 10th October 2023 and there may have been further changes. As with all surveys, there is a margin of error which needs to be considered in relation to this report. The maize survey is currently underway and details will be released in the near future.

Key Points at 10 October 2023 (figures have been rounded to nearest 100):

- For the 2022/2023 season, cereal grain production (wheat, barley and oats) in NZ totaled an estimated 835,900 tonnes (up 9% on last year). Maize grain production was estimated at 164,400 tonnes. Total production of grain in NZ was therefore estimated to be 1,000,300 tonnes.
- When compared to the same time last year, unsold stocks of cereal grain, summed over all six crops, are estimated to have more than doubled (105% higher). As at 10 October 2023, unsold stocks of feed wheat and feed barley were estimated at 32,900 tonnes (up 15,000 tonnes on last year) and 53,500 tonnes (up 29,800 tonnes on last year), respectively.
- Unsold stocks of cereal grain, summed over all six crops, are estimated to have reduced by 38% between 1 July 2023 and 10 October 2023.
- On-farm storage of sold grain is up 55% (up 90,300 tonnes) on this time last year. Total on-farm storage, including both sold and unsold grain, summed over all six crops, is up 67% (up 147,500 tonnes) compared to the same time last year.
- The total area sown or intended to be sown in cereals is estimated to be 94,300 hectares, which is down 3% (down 2,900 ha) on last season. An estimated 87% of this total area had been sown, which is similar to the average over the previous nine seasons (86%).

As at 10 October 2023, the tonnages of unsold feed wheat and feed barley were estimated at 32,900 t and 53,500 t, respectively. In addition, there were an estimated 20,800 t of unsold milling wheat and 4,100 t of unsold malting barley. When totalled over all six cereal crops, the 2024 harvest hectares are predicted to be down 3% on the 2023 harvest hectares (down from an estimated 97,200 ha to 94,300 ha). The 2024 harvest hectares for feed wheat and feed barley are predicted to be 1,500 and 3,400 hectares lower than the 2023 harvest hectares, respectively, while for milling wheat and malting barley the 2024 harvest hectares are predicted to be 600 and 1,100 hectares higher than the 2023 harvest hectares, respectively.

Milling wheat: Overall, on-farm storage was 234% up (more than triple) on the same time last year. The estimated tonnage of unsold grain was 20,800 t while the estimated tonnage of sold grain stored on farm was 37,300 t. Both unsold and sold stored grain were up on the same time last year. Almost all milling wheat crops (99%) had been sown by October 10, and the area sown (including yet to be sown) is estimated to be up 5% on last season.

Feed wheat: Overall, on-farm storage was up 59% on the same time last year. The estimated tonnage of unsold grain was 32,900 t, which was up on the same time last year. The estimated tonnage of sold grain still stored on farm was 122,100 t, which was up on the tonnage at the same time last year. Almost all feed wheat crops (99%) had been sown by October 10, with the area sown (including yet to be sown) estimated to be down 5% on last season.

Feed barley: Overall, on-farm storage was up 40% on the same time last year. The estimated tonnage of unsold grain was 53,500 t, which was up on the same time last year. The estimated tonnage of sold grain still stored on farm was 59,300 t, which was slightly up on the tonnage at the same time last year. An estimated 75% of feed barley crops were sown by October 10, with the area sown (including yet to be sown) estimated to be down 9% on last season.

Malting barley: Overall, on-farm storage was up 209% on the same time last year (more than triple). The estimated tonnage of unsold grain was 4,100 t, which was down on the same time last year, while the estimated tonnage of sold grain still stored on farm was 24,000 t, which was much higher than the tonnage at the same time last year (1,800 t). An estimated 79% of malting barley crops were sown by October 10, and the area sown (including yet to be sown) was estimated to be up 12% on last season.

Milling oats: Overall, on-farm storage was down 16% compared to the same time last year. The estimated tonnage of unsold grain was 200 t, which was down on the same time last year. The estimated tonnage of sold grain that was still stored on farm was 8,000 t, which was slightly down on the same time last year. Milling oat crops were 60% sown by October 10, with the area sown (including yet to be sown) estimated to be almost identical to last season.

Feed oats: Overall, on-farm storage was down 3% on the same time last year. The estimated tonnage of unsold grain was 200 t, down on the same time last year. The estimated tonnage of sold grain still stored on farm was 4,800 t, which was higher than at the same time last year. Feed oat crops were 87% sown by October 10, and the area to be sown (including yet to be sown) was estimated to be 21% up on last season.

Overall: As a total over all six crops, the estimated unsold tonnage of wheat, barley and oats (111,700 t in total) was 105% higher than at the same time last year (more than double), and the estimated tonnage sold but still stored on farm (255,500 t in total) was 55% higher than at the same time last year. This meant that the total tonnage on farm on October 10, 2023 (367,200 t in total) was estimated to be 67% higher than the amount on October 10, 2022. The total on-farm storage was made up of

155,000 t of feed wheat, 112,800 t of feed barley, 58,100 t of milling wheat, 28,100 t of malting barley, 8,200 t of milling oats and 5,000 t of feed oats.

The total area sown plus intended to be sown in wheat, barley or oats, as at 10 October 2023, was estimated to be down 2,900 ha, or down 3%, on the area harvested in 2023. There were increases in sowings of malting barley, milling wheat and feed oats, and decreases in sowings of feed barley and feed wheat.

As a comparison over the last two years, the total area sown plus intended to be sown in wheat, barley or oats, as at 10 October 2023, was estimated to be 1% down on the area harvested in 2022. Milling wheat area was up 55%, malting barley area was up 82%, feed wheat area was down 8%, feed barley area was down 17% and feed oats area was down 24% over the two-year period.

The percentage of hectares that has been “forward sold”, as at 10 October 2023, was estimated to be 60% for milling wheat, 93% for malting barley and 91% for milling oats (as compared to matched estimates of 50%, 48% and 83%, respectively, for forward sales at the same time last year). Forward sales of malting barley are markedly up on last year. For the feed crops, the percentages that have been forward sold were 50% of feed wheat, 30% of feed barley and 61% of feed oats hectares (as compared to 54%, 43% and 62%, respectively, for forward sales at the same time last year).

Spring has been wet and cold which has slowed growth and delayed spring sowings across most regions, although many crops are generally growing well now that the weather has warmed up.

Table 1. Estimated NZ national figures for the 2023 harvest, plus sold and delivered tonnages, for six cereal crops as at October 10, 2023.

		Milling wheat	Feed wheat	Malting barley	Feed barley	Milling oats	Feed oats	Total (all crops)
Number of farmers in the survey who harvested this crop in 2023	Units	47	81	27	86	10	11	119
2022 harvest								
Estimated NZ total hectares, 2022 harvest	ha	8,820	34,080	5,860	40,640	2,741	2,613	94,754
Estimated NZ total tonnes, 2022 harvest	tonnes	75,630	326,970	42,116	287,584	17,181	15,810	765,291
2023 harvest								
Estimated NZ total hectares, 2023 harvest	ha	13,058	32,860	9,579	37,285	2,730	1,649	97,160
Estimated NZ total tonnes, 2023 harvest	tonnes	118,854	322,122	74,724	290,712	19,781	9,677	835,870
Sold under pre-harvest contract and delivered by 10 October, 2023	tonnes	47,754	121,715	43,238	120,428	11,594	1,879	346,608
Pre-harvest contract grain stored on farm on 10 October, 2023	tonnes	33,487	73,891	23,850	39,606	7,999	4,845	183,678
Sold at spot/free price and delivered by 10 October, 2023	tonnes	4,172	42,718	1,237	51,810	0	2,603	102,540
Sold at spot/free price and stored on farm on 10 October, 2023	tonnes	3,791	48,181	168	19,697	0	0	71,837
(For milling or malting only) Sold for feed by 10 October, 2023	tonnes	8,808	-	2,165	-	0	-	10,973
(For feed only) Used on own farm by 10 October, 2023	tonnes	-	2,672	-	5,709	-	150	8,531
Unsold stocks on hand (2023 harvest only) on 10 October, 2023	tonnes	20,842	32,947	4,065	53,462	188	200	111,704
Sales channels (2023 harvest)								
Sold on pre-harvest contract (total) by 10 October, 2023	tonnes	81,241	195,605	67,089	160,034	19,593	6,724	530,286
Sold at spot/free price (total) by 10 October, 2023	tonnes	7,964	90,898	1,405	71,507	0	2,603	174,377
On farm storage (2023 harvest)								
Sold and delivered (total) by 10 October, 2023	tonnes	51,927	164,432	44,475	172,238	11,594	4,482	449,148
Sold and stored on farm (total) on 10 October, 2023	tonnes	37,278	122,071	24,018	59,304	7,999	4,845	255,515
Total sales (2023 harvest)								
Sold (grand total) by 10 October, 2023 (includes sold for feed & used on farm)	tonnes	98,012	289,176	70,659	237,250	19,593	9,477	724,166
Unsold stocks on hand (2023 harvest only) on 10 October, 2023	tonnes	20,842	32,947	4,065	53,462	188	200	111,704
Comparison of hectares and tonnes between last two harvests								
Estimated % change in hectares, 2022 to 2023 harvest	%	48%	-4%	63%	-8%	0%	-37%	3%
Estimated % change in tonnes, 2022 to 2023 harvest	%	57%	-1%	77%	1%	15%	-39%	9%
Comparison of yields (t/ha) between last two harvests								
NZ-wide estimated yield, 2022 harvest	t/ha	8.6	9.6	7.2	7.1	6.3	6.1	8.1
NZ-wide estimated yield, 2023 harvest	t/ha	9.1	9.8	7.8	7.8	7.2	5.9	8.6

Table 1 (continued).	Units	Milling wheat	Feed wheat	Malting barley	Feed barley	Milling oats	Feed oats	Total (all crops)
Comparison of on-farm storage between 1 July, 2023 and 10 October, 2023 (based upon matched data)								
Sold and stored on farm (total) on 1 July, 2023 (2023 harvest)	tonnes	57,844	153,878	46,473	71,808	13,204	5,409	348,615
Sold and stored on farm (total) on 10 October, 2023 (2023 harvest)	tonnes	37,278	122,071	24,018	59,304	7,999	4,845	255,515
Unsold stocks on hand (from 2023 harvest) on 1 July, 2023	tonnes	27,208	53,041	4,604	94,880	188	908	180,829
Unsold stocks on hand (from 2023 harvest) on 10 October, 2023 (as above)	tonnes	20,842	32,947	4,065	53,462	188	200	111,704
% decrease in total grain stored on-farm from July 2023 to Oct 2023	%	32%	25%	45%	32%	39%	20%	31%
Recalculated 10 October, 2022 survey breakdown to enable more precise, matched comparisons between 10 October, 2022 and 10 October, 2023								
Sold under pre-harvest contract and delivered by 10 October, 2022	tonnes	33,504	124,669	29,815	117,405	6,921	7,485	319,800
Pre-harvest contract grain stored on farm on 10 October, 2022	tonnes	8,640	46,055	1,838	38,166	7,047	2,712	104,458
Sold at spot/free price and delivered by 10 October, 2022	tonnes	17,877	101,801	1,299	83,211	501	2,850	207,540
Sold at spot/free price and stored on farm on 10 October, 2022	tonnes	6,537	33,487	0	18,999	1,253	470	60,745
(For milling or malting only) Sold for feed by 10 October, 2022	tonnes	6,827	-	1,926	-	0	-	8,753
(For feed only) Used on own farm by 10 October, 2022	tonnes	-	3,001	-	6,155	-	276	9,432
Unsold stocks on hand (2022 harvest only) on 10 October, 2022	tonnes	2,245	17,957	7,237	23,647	1,459	2,017	54,563
Comparison of on-farm storage between last October and this October (based upon matched data)								
Sold and stored on farm (total) on 10 October, 2022 (2022 harvest)	tonnes	15,177	79,541	1,838	57,165	8,299	3,182	165,203
Sold and stored on farm (total) on 10 October, 2023 (2023 harvest)	tonnes	37,278	122,071	24,018	59,304	7,999	4,845	255,515
Unsold stocks on hand (from 2022 harvest) on 10 October, 2022	tonnes	2,245	17,957	7,237	23,647	1,459	2,017	54,563
Unsold stocks on hand (from 2023 harvest) on 10 October, 2023 (as above)	tonnes	20,842	32,947	4,065	53,462	188	200	111,704
% change in total grain stored on-farm from Oct 2022 to Oct 2023	%	234%	59%	209%	40%	-16%	-3%	67%
Change in total grain (in TONNES) stored on-farm from Oct 2022 to Oct 2023	tonnes	40,697	57,520	19,008	31,954	-1,572	-153	147,453

Note: The matched comparisons in the last three sections were based upon scaling up data from the exact same survey farms for the last four AIMI surveys (not accounting for any carry-over from previous years).

Statistics NZ is gratefully acknowledged for supplying final 2022 NZ Agricultural Production Statistics data on total hectares and tonnes for wheat, barley and oats.

Table 2. NZ sowings and sowing intentions for six cereal crops as at October 10, 2023.

	Milling wheat	Feed wheat	Malting barley	Feed barley	Milling oats	Feed oats	Total (all crops)
Number of farmers in survey who have sown or intend to sow this crop as at 10 October, 2023	44	74	27	79	10	12	120
Estimated NZ total hectares, 2022 harvest	8,820	34,080	5,860	40,640	2,741	2,613	94,754
Estimated NZ total hectares, 2023 harvest	13,058	32,860	9,579	37,285	2,730	1,649	97,160
Sowings and intentions for the current season's crop (2023/24)							
Estimated NZ total autumn/winter 2023 sowings (hectares; for harvest in 2024)	9,097	29,879	815	12,142	927	453	53,313
Estimated NZ total spring 2023 sowings already sown by 10 October, 2023 (hectares; for harvest in 2024)	4,470	1,203	7,634	13,375	700	1,273	28,655
Estimated NZ total spring 2023 sowings still to sow (intentions) as at 10 October, 2023 (hectares; for harvest in 2024)	83	264	2,237	8,352	1,100	267	12,303
Estimated NZ total spring 2023 sowings plus intentions as at 10 October, 2023 (hectares; for harvest in 2024)	4,553	1,467	9,872	21,727	1,800	1,540	40,958
Predicted NZ total hectares, 2024 harvest (Autumn/winter 2023 sowings and Spring 2023 sowings & intentions, all combined)	13,649	31,345	10,687	33,869	2,726	1,993	94,271
% of predicted NZ hectares which had already been sown by 10 October, 2023	99%	99%	79%	75%	60%	87%	87%
Average over previous 9 years of % of predicted NZ hectares which had been sown by 10 October	99%	98%	76%	76%	72%	76%	86%
"Forward sales" of 2023/24 crop							
Predicted NZ total hectares that are "forward sold" (2024 harvest) as at 10 October, 2023	8,213	15,712	9,964	10,082	2,485	1,217	47,674
Estimated percentage of NZ total hectares that are "forward sold" (2024 harvest) as at 10 October, 2023	60%	50%	93%	30%	91%	61%	51%
Comparison of sowings/intentions between the 2021/22, 2022/23 and 2023/24 seasons (NZ totals) (based upon matched data)							
Estimated % change in NZ total sowings, 2022 to 2023 harvests	48%	-4%	63%	-8%	0%	-37%	3%
Estimated % change in NZ total sowings, 2023 to 2024 (predicted) harvests	5%	-5%	12%	-9%	0%	21%	-3%
Estimated % change in NZ total sowings, 2022 to 2024 (predicted) harvests (TOTAL over TWO seasons)	55%	-8%	82%	-17%	-1%	-24%	-1%
Estimated change in NZ total sowings, 2023 to 2024 (predicted) harvests (in HECTARES)	592	-1,514	1,109	-3,416	-3	344	-2,889
Comparison of spring sowing intentions as at 1 July, 2023 with spring sowings plus intentions as at 10 October, 2023 (based upon matched data)							
Estimated NZ total spring 2023 sowing intentions as at 1 July, 2023 (hectares; for harvest in 2024)	3,410	1,448	16,120	20,201	1,786	1,520	44,486
Estimated NZ total spring 2023 sowings plus intentions as at 10 October, 2023 (hectares, for harvest in 2024) (as above)	4,553	1,467	9,872	21,727	1,800	1,540	40,958
Change in estimated NZ total spring 2023 sowings/intentions between 1 July, 2023 and 10 October, 2023 (hectares; for harvest in 2024)	1,143	18	-6,249	1,526	13	20	-3,528

Note: The matched comparisons in the last two sections were based upon scaling up data from the exact same survey farms for the last four AIMI surveys.

In Table 1, the tonnages of the 2023 harvest of six grain crops still stored on farm reduced by between 20% and 45% in the period between the AIMI surveys dated July 1, 2023 and October 10, 2023. When tonnages were totalled over all six crops, the reduction was 31%.

When the on-farm storage on October 10, 2023 was compared to that at the same time last year (October 10, 2022), the total tonnage of grain on farms from the most recent harvest was higher than last year for all four of the wheat and barley crops, and, conversely, lower than last year for both oats crops. When summed over all six crops, the total on-farm storage was 67% higher than at this time last year. This corresponded to a 55% increase in the tonnage of grain sold and stored on farm, and a 105% increase in unsold stocks on hand, as compared to a year ago.

The number out of the 120 survey growers who have sown or intend to sow each crop this season can be compared with the number who harvested last season (2022/2023) by comparing the top rows in Tables 1 and 2. For milling wheat, grower numbers decreased from 47 to 44 between last season and this season, and feed wheat numbers decreased from 81 to 74. Note that for both wheat crops, almost all sowing had been completed by October 10, so these numbers are unlikely to change. For malting barley, milling oats and feed oats, grower numbers were similar between the last two seasons, while for feed barley, grower numbers decreased from 86 to 79. However, for the barley and oats crops, sowing was between 60% and 87% complete, so final grower numbers may be different.

In Table 2, sowings plus sowing intentions for feed wheat (for harvest in 2024) were 5% down on the area harvested in 2023 and down 8% on the area harvested in 2022. For feed barley, sowings plus sowing intentions (for harvest in 2024) were an estimated 9% down on the area harvested in 2023, and 17% down on the area harvested in 2022. For milling wheat, sowings (for harvest in 2024) were an estimated 5% up on the area harvested in 2023, and 55% up on the area harvested in 2022. Malting barley sowings and intentions were up 12% on last year, following a 63% increase the previous season. As a result, malting barley sowings were up 82% on two years ago. Milling oats sowings and intentions were similar to last year, which was similar to the previous year. Feed oats sowings and intentions were up 21% on last year, following a 37% decrease the previous year, and as a result, feed oats sowings was predicted to be down 24% on two years ago.

Summing the sowings and intended sowings for the six cereal crops for the current season (for harvest in 2024) (94,300 ha), a decrease of 2,900 ha was estimated when compared with the estimated area harvested in 2023 (97,200 ha).

At the bottom of Table 2 is the estimated change between the spring sowing intentions on July 1, 2023 and the actual sowings plus updated intentions on October 10, 2023. In total, there was an estimated decrease of 3,500 ha in the spring hectares sown plus intended to be sown between the two survey dates. This was dominated by a large decrease in hectares for malting barley (down 6,200 ha), partially offset by smaller increases in hectares for milling wheat (up 1,100 ha) and feed barley (up 1,500 ha).

Milling wheat (tonnes)

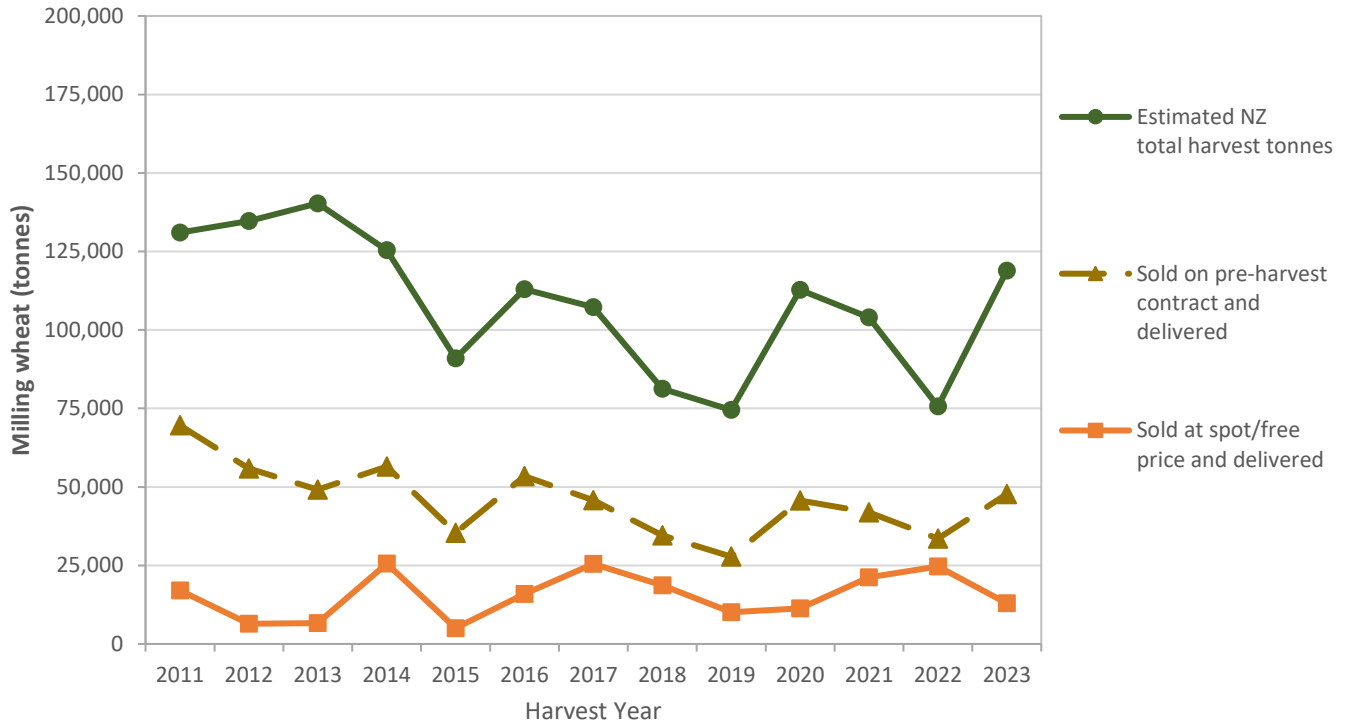


Figure 1a. NZ harvest tonnage and sales channels for milling wheat as estimated in October each year. (Note: Both “sold and delivered” categories relate to the crop harvested that year, excluding carryover stock. “Sold at spot/free price and delivered” includes grain sold for feed. Historical data for 2011 to 2021 are from October AIMI Reports for 2021 and earlier, while data for 2022 and 2023 are matched data from the current report.)

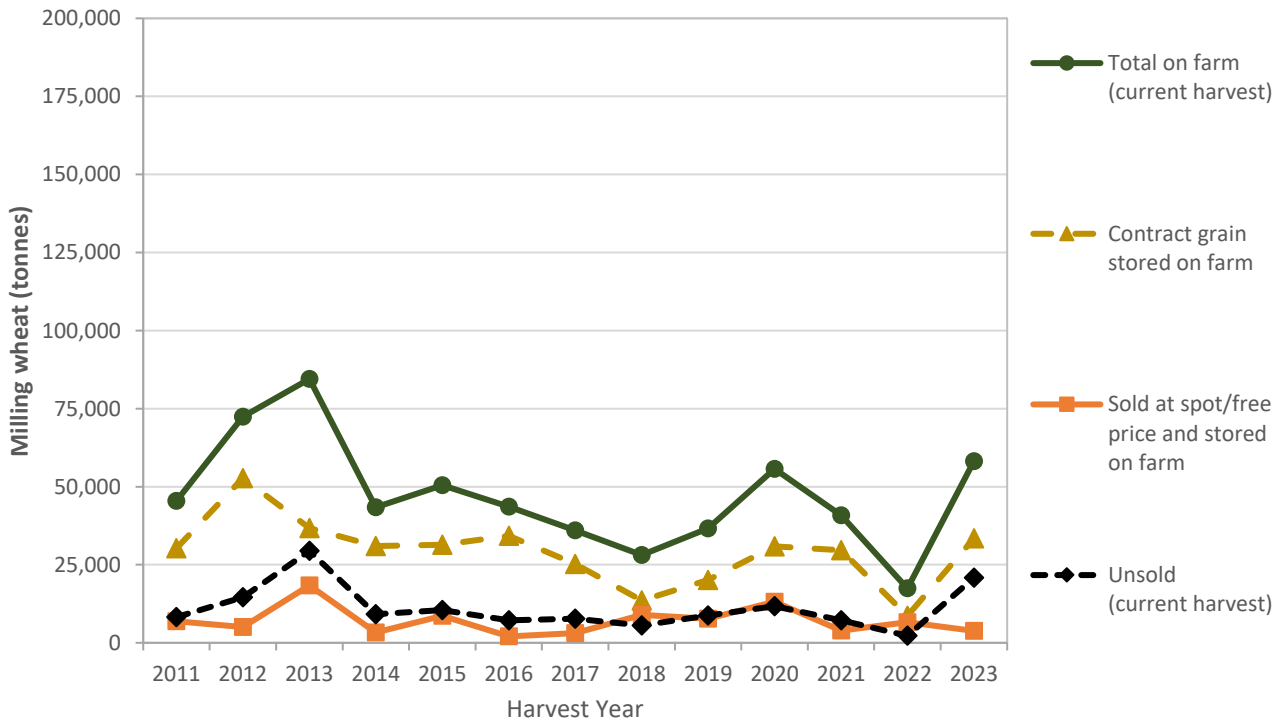


Figure 1b. NZ stocks on farm for milling wheat as estimated in October each year. (Note: Historical data for 2011 to 2021 are from October AIMI Reports for 2021 and earlier, while data for 2022 and 2023 are matched data from the current report.)

Feed wheat (tonnes)

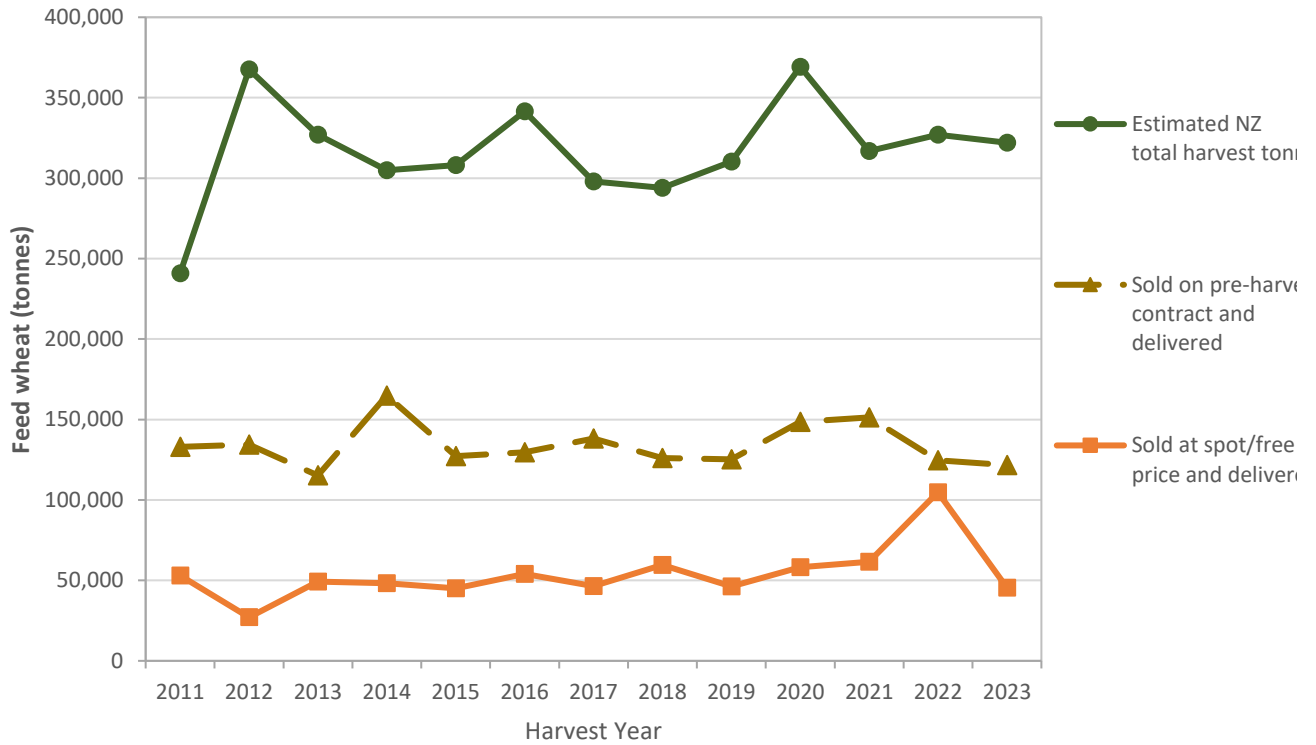


Figure 2a. NZ harvest tonnage and sales channels for feed wheat as estimated in October each year. (Note: Both “sold and delivered” categories relate to the crop harvested that year, excluding carryover stock. “Sold at spot/free price and delivered” includes grain used on own farm. Historical data for 2011 to 2021 are from October AIMI Reports for 2021 and earlier, while data for 2022 and 2023 are matched data from the current report.)

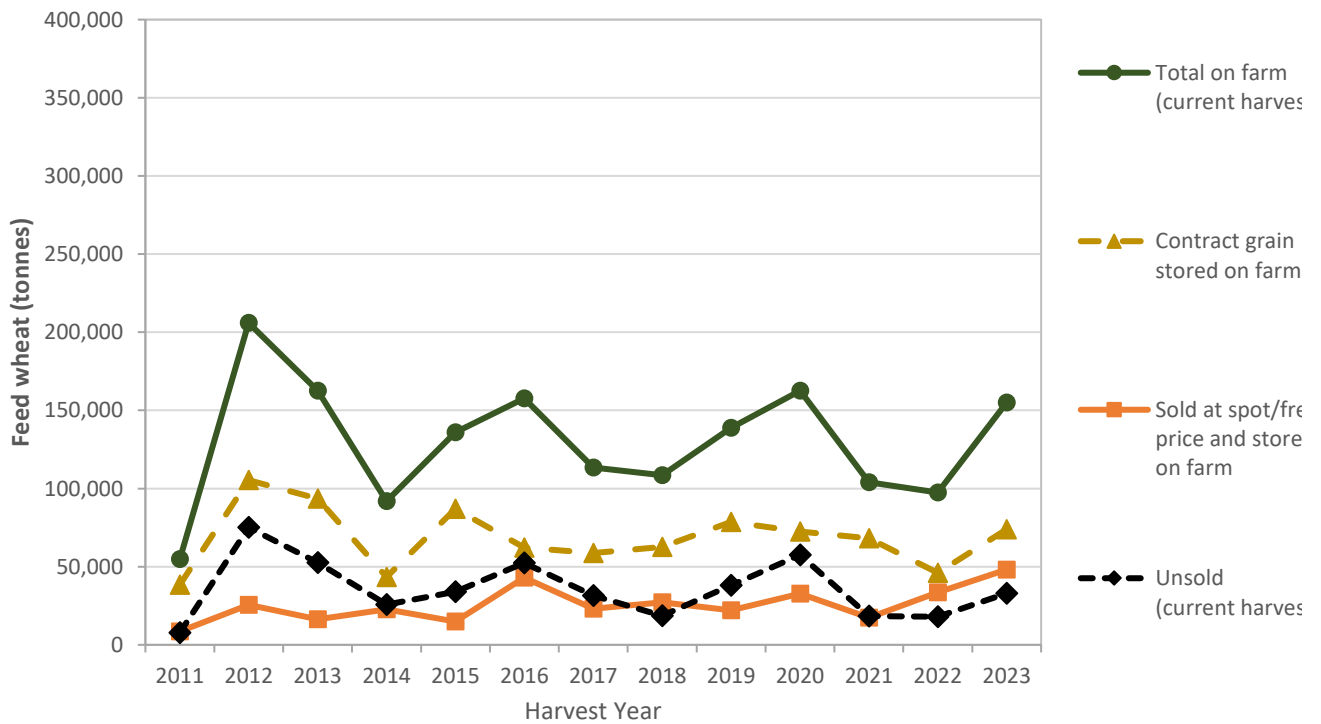


Figure 2b. NZ stocks on farm for feed wheat as estimated in October each year. (Note: Historical data for 2011 to 2021 are from October AIMI Reports for 2021 and earlier, while data for 2022 and 2023 are matched data from the current report.)

Feed barley (tonnes)

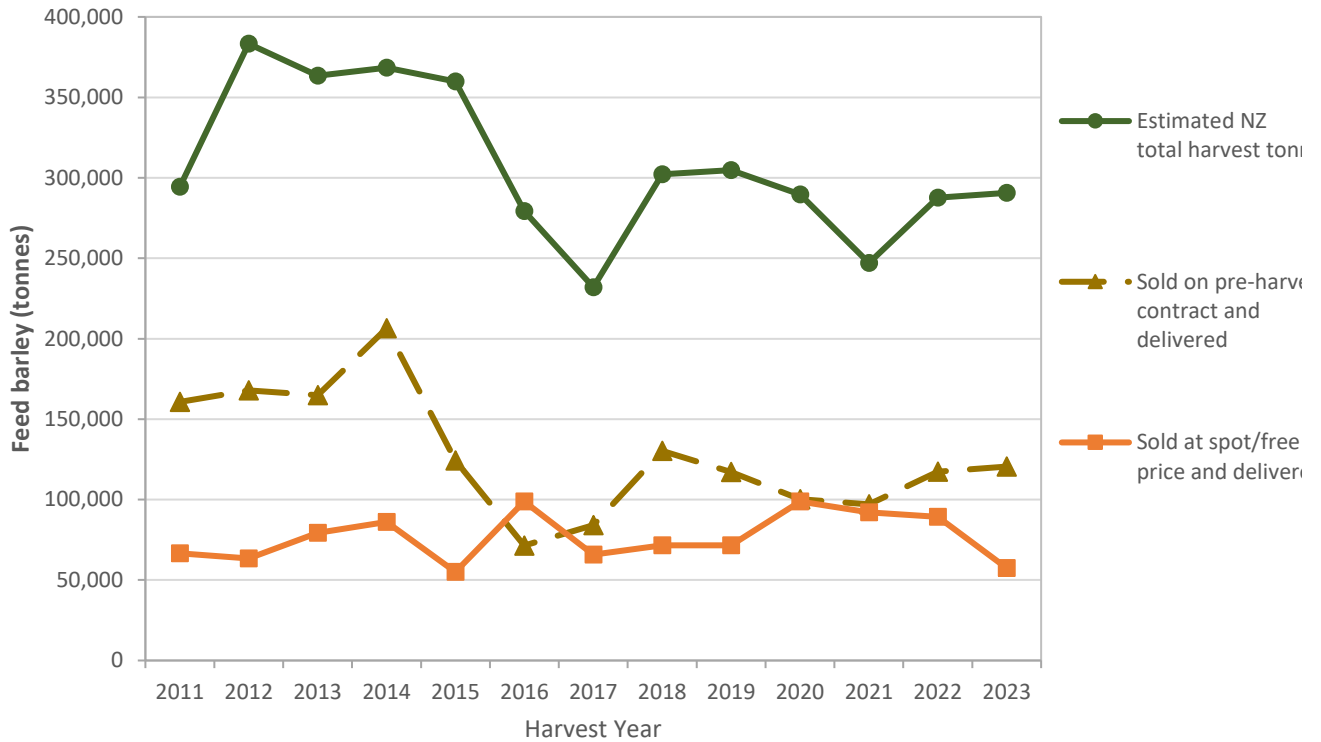


Figure 3a. NZ harvest tonnage and sales channels for feed barley as estimated in October each year. (Note: Both “sold and delivered” categories relate to the crop harvested that year, excluding carryover stock. “Sold at spot/free price and delivered” includes grain used on own farm. Historical data for 2011 to 2021 are from October AIMI Reports for 2021 and earlier, while data for 2022 and 2023 are matched data from the current report.)

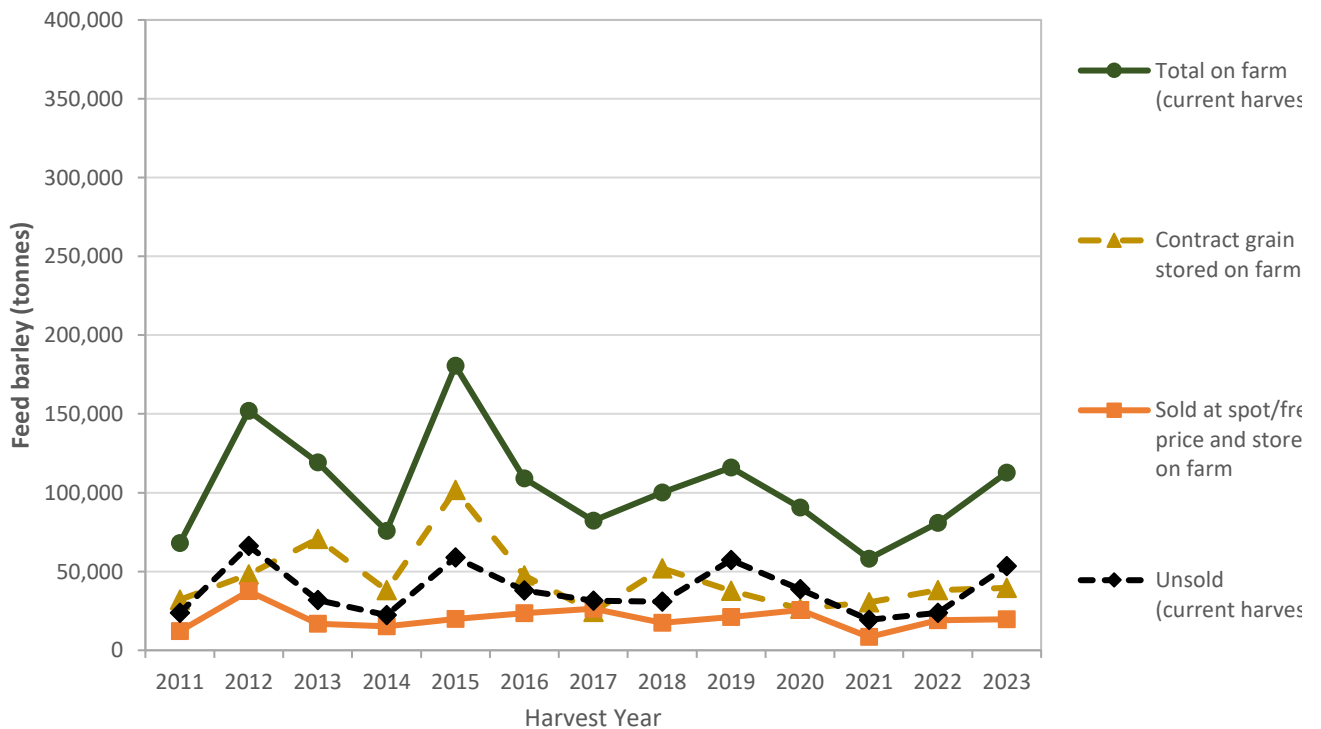


Figure 3b. NZ stocks on farm for feed barley as estimated in October each year. (Note: Historical data for 2011 to 2021 are from October AIMI Reports for 2021 and earlier, while data for 2022 and 2023 are matched data from the current report.)

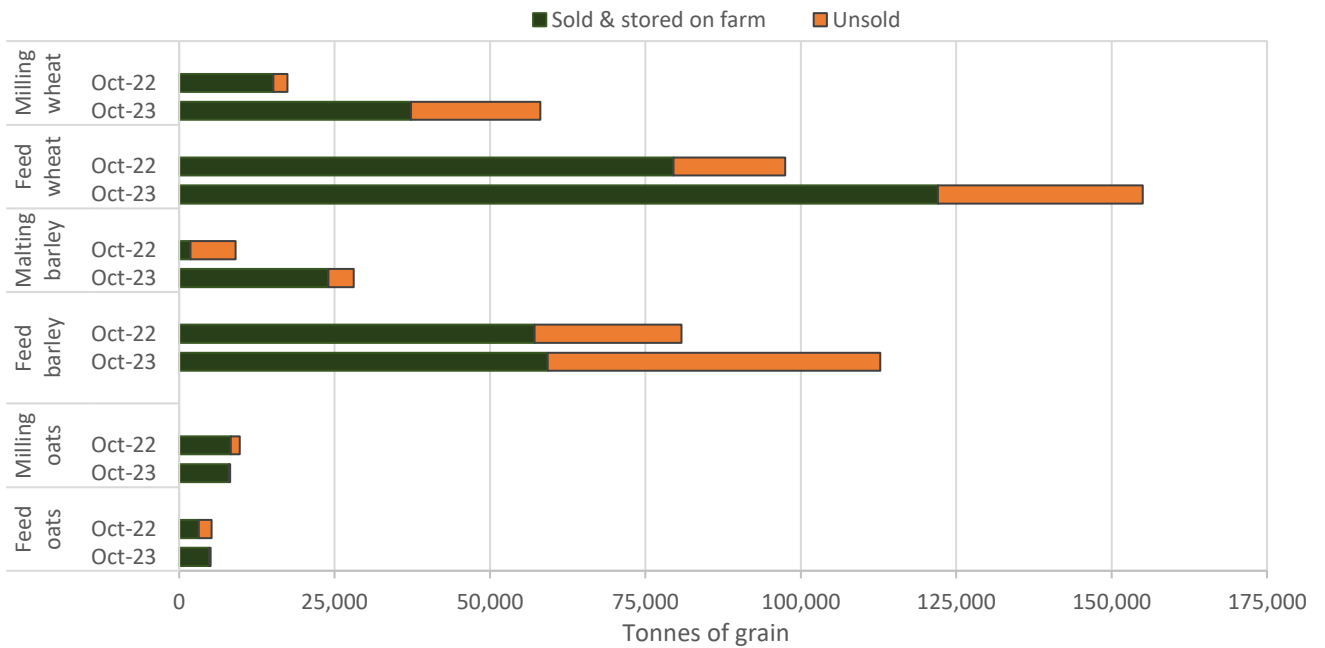


Figure 4. Changes in NZ stocks on farm for wheat, barley and oats between October 10, 2022 and October 10, 2023. These data are also reported in Table 1 and Figures 1b, 2b and 3b. All estimates are based upon scaling up from the current survey sample, which consists of only those growers who responded to each of the last four AIMI surveys; these estimates therefore provide more precise, matched comparisons.

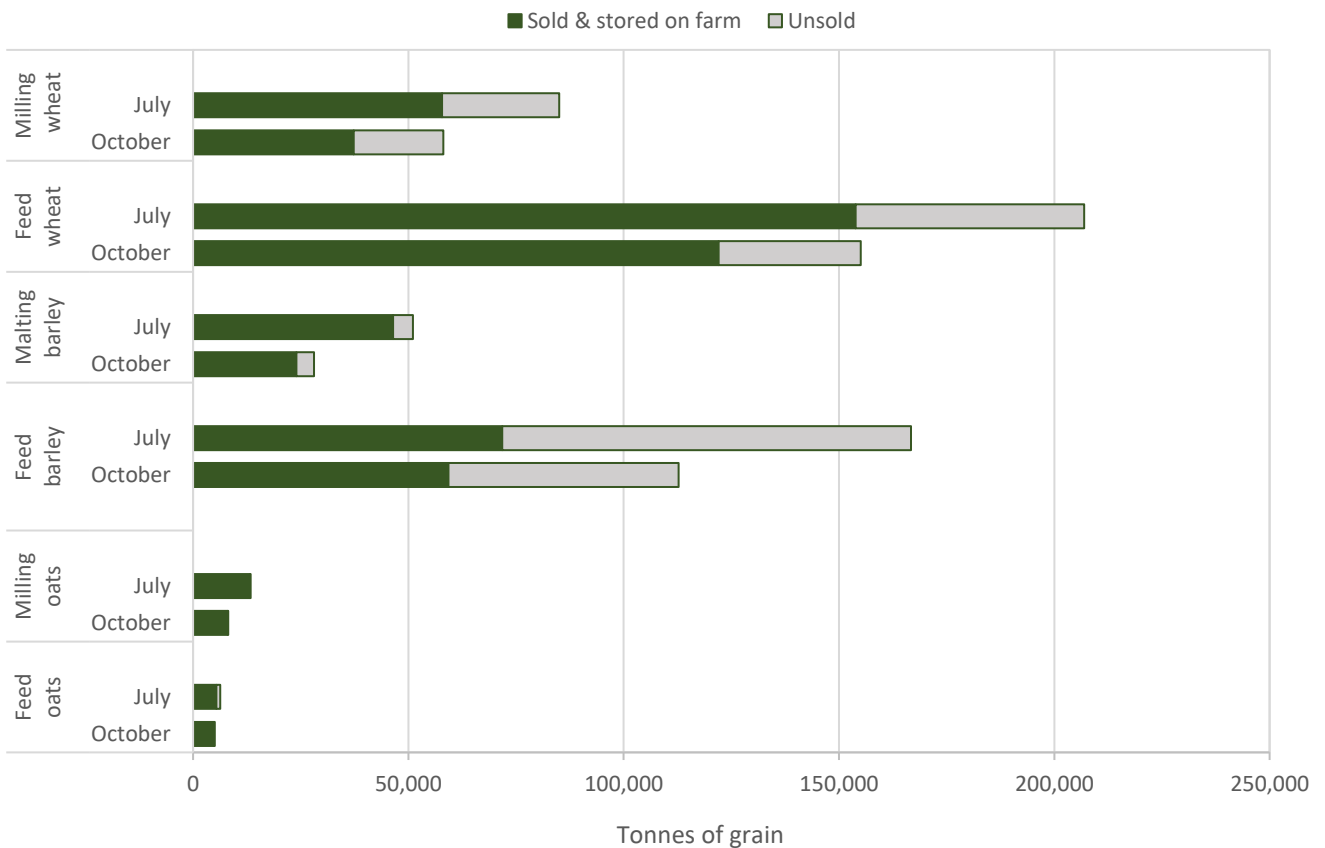


Figure 5. Changes in NZ stocks on farm for wheat, barley and oats between July 1 and October 10, 2023. These data are also reported in Table 1. As in Figure 4, this is a matched comparison.

NZ harvest hectares for 2011 to 2023 and predicted hectares for 2024 as estimated in October each year

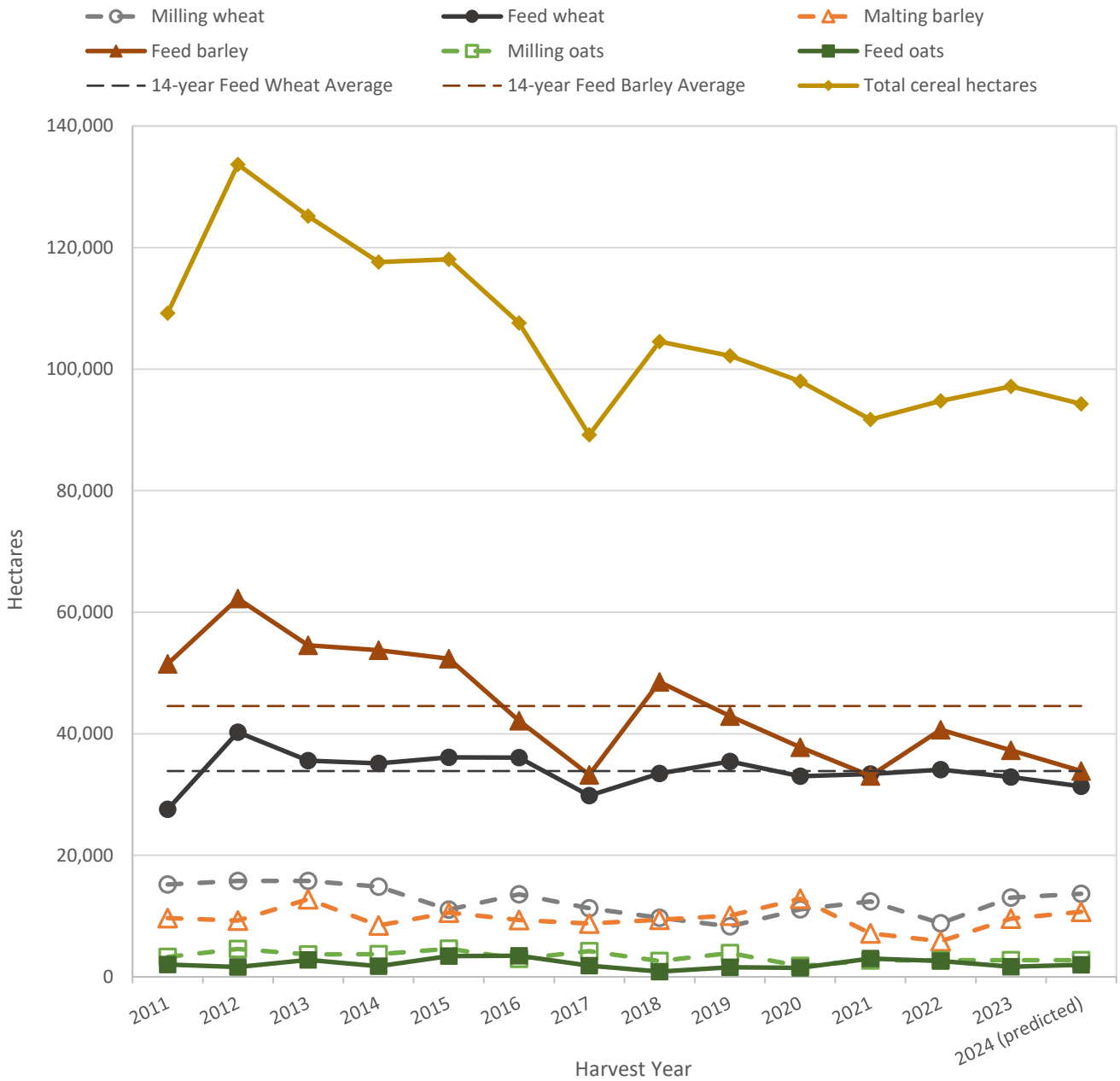


Figure 6. NZ harvest hectares for six cereal crops (and the total over the six crops) as estimated in October each year from 2011 to 2023, and predicted harvest hectares for 2024. For feed wheat and feed barley, “long-term” means (14-year averages) are included as dashed horizontal lines.

(Note: All figures represent final harvest hectares except for 2024 which is made up of hectares already sown and hectares intended to be sown for harvest in 2024. Refer to Fig. 7 for hectares already sown by October 10, 2023. Figures for 2022, 2023 and 2024 (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 October AIMI reports for 2011 – 2021.)

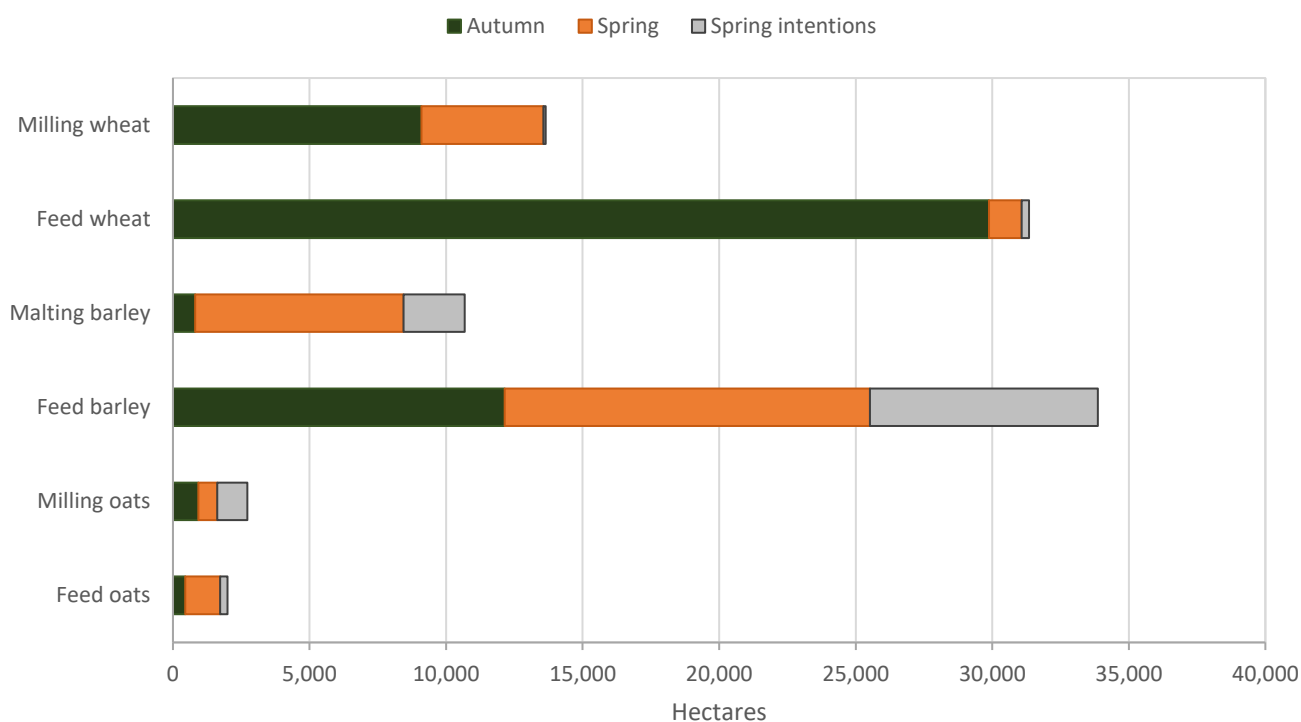


Figure 7. Estimated NZ hectares sown in autumn and spring 2023, plus NZ spring hectares yet to sow (spring intentions) for harvest in 2024, based on data collected on October 10, 2023. These data are also reported in Table 2.

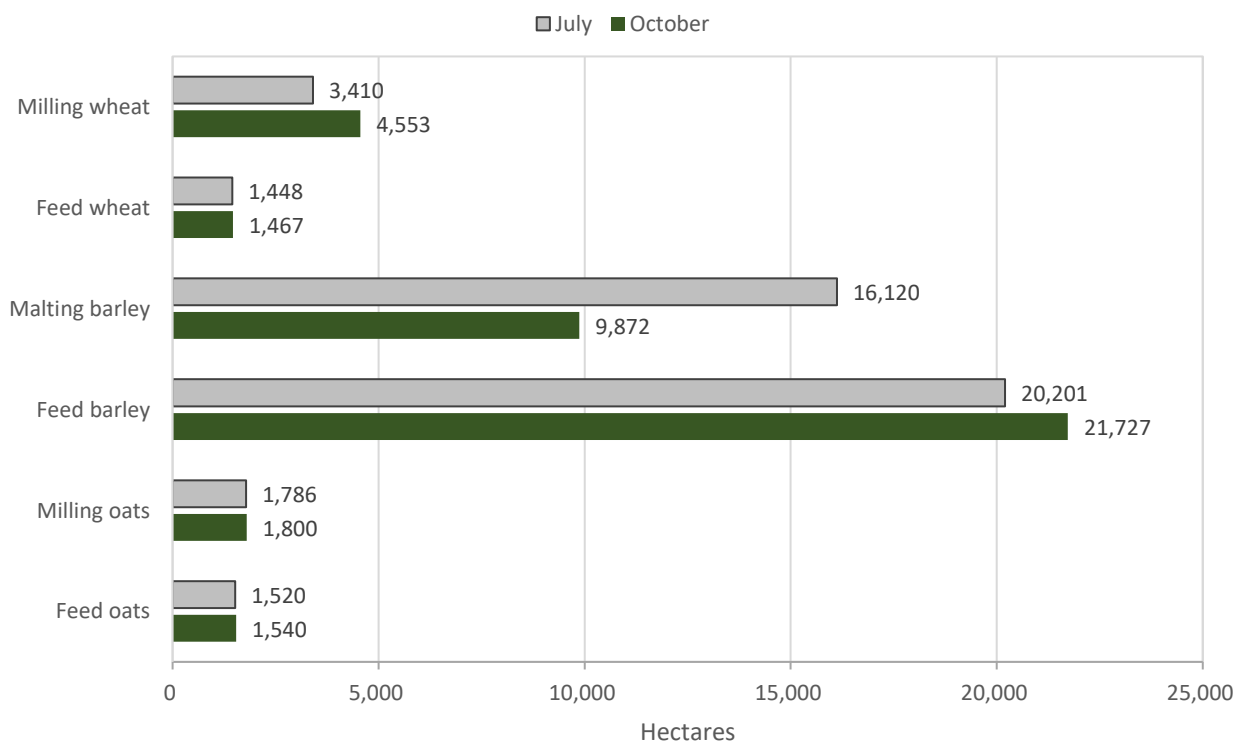


Figure 8. Comparison of NZ spring sowing intentions as at July 1 2023 with actual NZ spring sowings plus intentions as at October 10, 2023. These data are also reported in Table 2. As in Figures 4 and 5, this is a matched comparison.

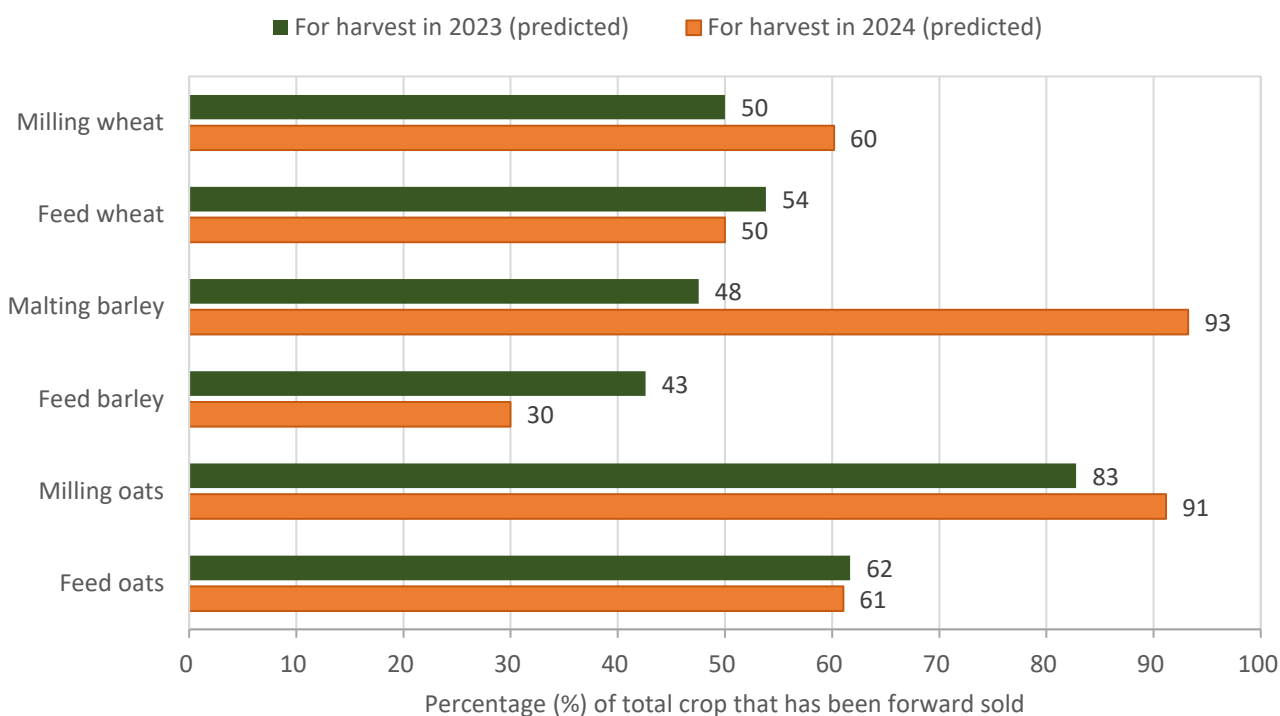


Figure 9. Comparison of percentage of total NZ crop sown (autumn and spring sowings plus spring intentions) that had been forward sold as at October 10, 2022 and 2023 for predicted 2023 and predicted 2024 harvests, respectively. As in Figures 4, 5 and 8, this is a matched comparison.

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AIMI receives funding from Ministry for Primary Industries, FAR, Arable Food Industry Council, NZ Flour Millers Association, NZ Feed Manufacturers Association, Federated Farmers and United Wheat Growers.

Report group* 120
Completed Survey 145
Out of ** 152

* Must have completed October 2022, April 2023, July 2023 and current survey. ** Includes 18 new recruits.

Comments

- Sales – contracted grain slow to move. No buyers, flat market due to low dairy payout. Although some movement lately due to cold wet spring slowing pasture growth.
- Wet and cold spring for many regions, with spring sowings delayed or slow to grow, across all regions.
- Not many contracts around, uncertainty around what prices will do in the future, so some have cut back sowings. Some aren't growing this season due to predicted El Nino impacts (dry summer on East coast).

Region	Eastern NI	Sth West NI	Northern SI	Mid Canterbury	Sth Cant & Nth Otago	Sth Otago & Sthland	Total
No. of participants	7	4	26	40	19	24	120

Hectares harvested in 2023 and harvest intentions for 2024 (from 120 SCALED responses)												
Region	Milling Wheat		Feed Wheat		Malting Barley		Feed Barley		Milling Oats		Feed Oats	
	2023	2024	2023	2024	2023	2024	2023	2024	2023	2024	2023	2024
ENI	388	366	2,519	1,442	847	2,180	2,383	2,789	-	-	644	533
SWNI	-	-	262	209	365	605	-	-	-	-	-	-
NSI	2,928	3,230	2,880	2,775	759	883	6,929	5,571	-	-	182	67
MC	6,063	6,504	7,839	7,422	6,902	6,005	10,668	7,678	220	-	653	1,080
SCNO	3,645	3,488	8,928	8,632	530	883	7,027	6,752	-	-	-	87
SOS	33	61	10,433	10,865	177	132	10,277	11,080	2,510	2,726	170	227
Total	13,058	13,649	32,860	31,345	9,579	10,687	37,285	33,869	2,730	2,726	1,649	1,993

Unsold grain at 10 October 2023 (from 120 SCALED responses)

Region	Milling Wheat	Feed Wheat	Malting Barley	Feed Barley	Milling Oats	Feed Oats
Eastern NI	-	-	-	230	-	-
Sth West NI	-	-	-	-	-	-
Northern SI	1,677	1,762	88	5,470	-	138
Mid Canterbury	17,187	12,619	3,977	26,068	-	-
Sth Cant & Nth Otago	1,592	11,084	-	11,585	-	-
Sth Otago & Sthland	387	7,481	-	10,109	188	63
Crop total	20,842	32,947	4,065	53,462	188	200

Totals over 120 survey responses

In Table A.1, the yields per hectare on the survey farms were higher for the 2023 harvest than for the 2022 harvest for milling wheat, feed wheat, malting barley, feed barley and milling oats, and lower for feed oats.

Table A.1 Data totalled over all survey respondents

	Units	Milling wheat	Feed wheat	Malting barley	Feed barley	Milling oats	Feed oats
Number of farmers in the survey who harvested this crop in 2023		47	81	27	86	10	11
2022 harvest							
Total hectares on survey farms, 2022 harvest	ha	1,590	6,143	664	4,605	411	392
Total tonnes on survey farms, 2022 harvest	tonnes	13,305	57,521	4,766	32,544	2,743	2,524
2023 harvest							
Total hectares on survey farms, 2023 harvest	ha	2,354	5,923	1,085	4,225	410	247
Total tonnes on survey farms, 2023 harvest	tonnes	20,909	56,668	8,456	32,898	3,158	1,545
Sold under pre-harvest contract and delivered by 10 October, 2023	tonnes	8,401	21,412	4,893	13,628	1,851	300
Pre-harvest contract grain stored on farm on 10 October, 2023	tonnes	5,891	12,999	2,699	4,482	1,277	774
Sold at spot/free price and delivered by 10 October, 2023	tonnes	734	7,515	140	5,863	0	416
Sold at spot/free price and stored on farm on 10 October, 2023	tonnes	667	8,476	19	2,229	0	0
(For milling or malting only) Sold for feed by 10 October, 2023	tonnes	1,550	-	245	-	0	-
(For feed only) Used on own farm by 10 October, 2023	tonnes	-	470	-	646	-	24
Unsold stocks on hand (2023 harvest only) on 10 October, 2023	tonnes	3,667	5,796	460	6,050	30	32
Comparison of yield (tonnes per ha) on survey farms between harvests							
Survey farms, 2022 harvest	t/ha	8.4	9.4	7.2	7.1	6.7	6.4
Survey farms, 2023 harvest	t/ha	8.9	9.6	7.8	7.8	7.7	6.2
Data for these SAME survey farms for comparisons of on-farm storage between 1 July, 2023 and 10 October, 2023							
Sold and stored on farm (total) on 1 July, 2023 (2023 harvest)	tonnes	10,176	27,070	5,259	8,126	2,108	864
Sold and stored on farm (total) on 10 October, 2023 (2023 harvest)	tonnes	6,558	21,475	2,718	6,711	1,277	774
Unsold stocks on hand (from 2023 harvest) on 1 July, 2023	tonnes	4,787	9,331	521	10,737	30	145
Unsold stocks on hand (from 2023 harvest) on 10 October, 2023	tonnes	3,667	5,796	460	6,050	30	32

Table A.1 continued

Data for these SAME survey farms from 10 October, 2022 survey, to enable more precise, matched comparisons between 10 October, 2022 and 10 October, 2023							
Sold under pre-harvest contract and delivered by 10 October, 2022	tonnes	5,894	21,932	3,374	13,286	1,105	1,195
Pre-harvest contract grain stored on farm on 10 October, 2022	tonnes	1,520	8,102	208	4,319	1,125	433
Sold at spot/free price and delivered by 10 October, 2022	tonnes	3,145	17,909	147	9,417	80	455
Sold at spot/free price and stored on farm on 10 October, 2022	tonnes	1,150	5,891	0	2,150	200	75
(For milling or malting only) Sold for feed by 10 October, 2022	tonnes	1,201	-	218	-	0	-
(For feed only) Used on own farm by 10 October, 2022	tonnes	-	528	-	697	-	44
Unsold stocks on hand (2022 harvest only) on 10 October, 2022	tonnes	395	3,159	819	2,676	233	322
Data for these SAME survey farms for comparisons of on-farm storage between 10 October, 2022 and 10 October, 2023							
Sold and stored on farm (total) on 10 October, 2022 (2022 harvest)	tonnes	2,670	13,993	208	6,469	1,325	508
Sold and stored on farm (total) on 10 October, 2023 (2023 harvest)	tonnes	6,558	21,475	2,718	6,711	1,277	774
Unsold stocks on hand (from 2022 harvest) on 10 October, 2022	tonnes	395	3,159	819	2,676	233	322
Unsold stocks on hand (from 2023 harvest) on 10 October, 2023	tonnes	3,667	5,796	460	6,050	30	32

Table A.2 Fate of 2023 crop, in percentages (by tonnes)

	Milling wheat	Feed wheat	Malting barley	Feed barley	Milling oats	Feed oats
Number of farmers in the survey who harvested this crop in 2023	47	81	27	86	10	11
2023 harvest						
% Sold under pre-harvest contract and delivered by 10 October, 2023	40.2	37.8	57.9	41.4	58.6	19.4
% Pre-harvest contract grain stored on farm on 10 October, 2023	28.2	22.9	31.9	13.6	40.4	50.1
% Sold at spot/free price and delivered by 10 October, 2023	3.5	13.3	1.7	17.8	0.0	26.9
% Sold at spot/free price and stored on farm on 10 October, 2023	3.2	15.0	0.2	6.8	0.0	0.0
(For milling or malting only) % Sold for feed by 10 October, 2023	7.4	-	2.9	-	0.0	-
(For feed only) % Used on own farm by 10 October, 2023	-	0.8	-	2.0	-	1.6
% Unsold stocks on hand (2023 harvest only) on 10 October, 2023	17.5	10.2	5.4	18.4	0.9	2.1
Sales channels (2023 harvest)						
% Sold on pre-harvest contract (total) by 10 October, 2023	68.4	60.7	89.8	55.0	99.1	69.5
% Sold at spot/free price (total) by 10 October, 2023	6.7	28.2	1.9	24.6	0.0	26.9
On-farm storage (2023 harvest)						
% Sold and delivered (total) by 10 October, 2023	43.7	51.0	59.5	59.2	58.6	46.3
% Sold and stored on farm (total) on 10 October, 2023	31.4	37.9	32.1	20.4	40.4	50.1
Total sales (2023 harvest)						
% Sold (of total crop) by 10 October, 2023 (includes sold for feed and used on farm)	82.5	89.8	94.6	81.6	99.1	97.9
% Unsold (of total crop) on 10 October, 2023	17.5	10.2	5.4	18.4	0.9	2.1

In Table A.2 above, the data in Table A.1 are expressed as percentages.

In Table A.3, autumn/winter sowings, spring sowings, and spring sowing intentions are given as sums over the 120 survey farms.

Table A.3 Autumn/winter sowings and spring sowings and intentions (data totalled over all survey respondents)

	Milling wheat	Feed wheat	Malting barley	Feed barley	Milling oats	Feed oats
Number of farmers in survey who have sown or intend to sow this crop as at 10 October, 2023	44	74	27	79	10	12
Number of survey farmers who have sown in Autumn/winter 2023	33	70	6	35	5	3
Number of survey farmers who have already sown in Spring 2023, as at 10 October, 2023	28	9	19	40	2	6
Number of survey farmers who still intend to sow in Spring 2023, as at 10 October, 2023	1	3	10	31	6	3
Total hectares on survey farms, 2022 harvest	1,590	6,143	664	4,605	411	392
Total hectares on survey farms, 2023 harvest	2,354	5,923	1,085	4,225	410	247
Sowings and intentions for the current season's crop (2023/24)						
Autumn/winter sowings on survey farms (hectares; for harvest in 2024)	1,640	5,386	92	1,376	139	68
Spring sowings already sown on survey farms by 10 October, 2023 (hectares; for harvest in 2024)	806	217	865	1,516	105	191
Spring sowings still to sow on survey farms (intentions) as at 10 October, 2023 (hectares; for harvest in 2024)	15	48	254	946	165	40
Total spring 2023 sowings plus intentions on survey farms as at 10 October, 2023 (hectares; for harvest in 2024)	821	264	1,119	2,462	270	231
Total predicted hectares on survey farms for 2024 harvest, as at 10 October, 2023	2,461	5,650	1,211	3,838	409	299
"Forward sales" of 2023/24 crop						
Total hectares on survey farms that are "forward sold", as at 10 October, 2023	1,481	2,832	1,129	1,142	373	183
Percentage of hectares on survey farms that are "forward sold", as at 10 October, 2023	60%	50%	93%	30%	91%	61%
Comparison of sowings/intentions over the 2021/22, 2022/23 and 2023/24 seasons (on survey farms)						
Estimated % change in total sowings on survey farms, 2022 to 2023 harvests	48%	-4%	63%	-8%	0%	-37%
Estimated % change in total sowings on survey farms, 2023 to 2024 (predicted) harvests	5%	-5%	12%	-9%	0%	21%
Estimated % change in total sowings on survey farms, 2022 to 2024 (predicted) harvests (TOTAL over TWO seasons)	55%	-8%	82%	-17%	-1%	-24%
Comparison of spring sowing intentions as at July 1, 2023 with spring sowings plus intentions as at 10 October, 2023 (on survey farms)						
Estimated spring 2023 sowing intentions on survey farms as at 1 July, 2023 (hectares; for harvest in 2024)	615	261	1,827	2,289	268	228
Estimated spring 2023 sowings plus intentions on survey farms as at 10 October, 2023 (hectares; for harvest in 2024) (as above)	821	264	1,119	2,462	270	231
Change in spring 2023 sowings/intentions on survey farms between 1 July, 2023 and 10 October, 2023 (hectares; for harvest in 2024)	206	3	-708	173	2	3

For scaling up to NZ-wide totals, the most recent figures are the Final 2022 Agricultural Production Statistics (APS) figures, as in Table A.4. On average, the yields on the survey farms were slightly lower than the APS yields for wheat, similar for barley, and higher for oats.

From the scale-up factors, we can see what percentage of the area of each 2022 harvest crop was on the survey farms. For wheat, it was $100/5.547 = 18.0\%$. For barley, it was $100/8.826 = 11.3\%$. For oats, it was $100/6.666 = 15.0\%$. That is, the percentages were highest for wheat (with between one fifth and one sixth of hectares sampled in the survey), lower for oats (with about one seventh of hectares sampled), and lowest for barley (with about one ninth of hectares sampled).

Table A.4 Scaling up from survey totals to NZ-wide totals using Final 2022 Agricultural Production Statistics (APS) data

	Total wheat	Total barley	Total oats
Total hectares on survey farms, 2022 harvest	7,733	5,269	803
Total tonnes on survey farms, 2022 harvest	70,826	37,310	5,267
Final APS statistics for 2022 harvest, total hectares	42,900	46,500	5,354
Final APS statistics for 2022 harvest, total tonnes	402,600	329,700	32,991
Multiplier for scaling up from survey farms to APS statistics			
Hectares	5.547	8.826	6.666
Tonnes	5.684	8.837	6.264
Comparison of yields between survey and APS statistics			
Survey farms, 2022 harvest (t/ha)	9.2	7.1	6.6
APS statistics, 2022 harvest (t/ha)	9.4	7.1	6.2

Matched vs unmatched data:

* *Matched data* – The same growers are used to compare two seasons of data. Matched data are scaled up from totals over the survey farms to totals for NZ using the same scaling factors (given in Table A.4). Data in the tables consist of matched data except when a previous AIMI survey is referenced.

* *Unmatched data* – Data comes from annual AIMI reports and doesn't compare the same set of growers or use the same scale-up factors. The graphs present unmatched data, except when stated otherwise in the caption (as in Figures 1-4, where the last two years are matched, Figure 6, where the last three years are matched, and Figures 5, 8 and 9 which are matched comparisons between two time points).

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