

Issue 4 Sunday February 25 2024

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Editor's note

Here at FAR, harvest is exciting as final yields provide the most important information from our trials. Our [Harvest Snippets](#), which provide a quick snapshot of such data from our cereal cultivar performance trials, are coming out at pace now. In response to grower feedback, our revamped Snippets now include the season's yields alongside a comparison of the previous seasons' 4-year means, and seasonal weather data for the trial alongside historical averages. So far, cereal yields are looking average to above average, while field-dressed yields of clover and seed crops also appear strong. Remember to keep tweaking those combines to ensure you optimise performance. We have heard stories that this is improving productivity by more than 30% in some cases. Measure losses out the back of the combine (whether with a drop pan or other improvised method) and adjust as necessary.



Following on from the harvest workshops, we're looking to create a database of combine settings as a reference point for New Zealand crops and conditions. We hope this will guide improvements in combine settings for everyone. You can help with this by sending us a photo of your combine settings screen (e.g. left). Include combine model, if it's a small tube or normal rotor, where you are based, the crop and details of any measured losses and measurement method. No grower details will be passed on, just the settings and information to help build this New Zealand-wide database.

This will help us build up some robust data for growers to use moving forward. Please send them to chris.smith@far.org.nz or text to 027 3071002.

Planning for our autumn round-up meeting is underway. These will be held from mid-March to early April and will include cultivar performance trial results and combine workshop findings. Keep an eye on the [FAR events page](#) for information.

Crop management tips

General

Setting up for autumn weed management

Many autumn-sown crops rely on pre-emergent herbicides to give the crop a competitive advantage and get it set up to yield well later. Consider the current long-term weather predictions for low rainfall for many areas, including Canterbury, when choosing your pre-em herbicide. Sakura® (a.i. pyroxasulfone, Group 15) is commonly used for pre-emergent grass weed control in cereals and other crops, but needs to be washed in by 15-25mm of rainfall or irrigation to be most effective. ([Read more here.](#)) Anecdotal evidence suggests that including Avadex™ (a.i. tri-allate, Group 15) as an incorporated, pre-planting herbicide, can “buy time” for the Sakura® and improve efficacy in dry seasons. Post-emergent sprays also take on added importance. Growers may also wish to incorporate aspects of Integrated Weed Management (IWM) into their systems. Further information on weed management can be found in the following resources.

- [Integrated Weed Management](#)
- [Herbicide Screening Trial Results](#)
- [Management of ryegrass weeds](#)

Spatial soil sampling

Harvest 2024 is likely nearing its end for some, depending on the region. Are you noticing much in-field variability? Are certain areas out-yielding other parts for no obvious reason? Yield mapping a paddock will help quantify and geo-reference these differences, and help with crop nutrient removal maps that reflect this range in yield.

If you are thinking about trying spatial mapping of nutrients this year, then here is an overview of the process. If you have farm mapping software you may be able to do this yourself or talk to your fertiliser advisor or a Precision Ag Consultant for more information.

What is spatial soil sampling?

- Collection of multiple soil samples from a selected area, rather than just walking a transect across a paddock.
- Use aerial imagery or boundary outline and sample points set out in a grid layout.
- Select spatial density – typically one sample per hectare or finer resolution.
- All sampling points are geo-referenced.
- Approx. 15 cores taken per sample point, labelled & sent to the lab.
- The lab then sends the results back. Make sure you receive them in a spreadsheet and not just a PDF.
- From the sample results you can produce accurate nutrient variability maps.
- You decide on the target rates for the coming crop based on the lab results and previous crop history.
- Variable rate application maps are then created for application by yourself or a contractor. This includes total product required, so you know how much product to order.
- A point to note is that nutrients (i.e. P and K) will need to be applied separately as they will have different variability across the paddock and require different amounts of product.
- Repeatable process, usually every 3-5 years.

When to use zonal soil sampling?

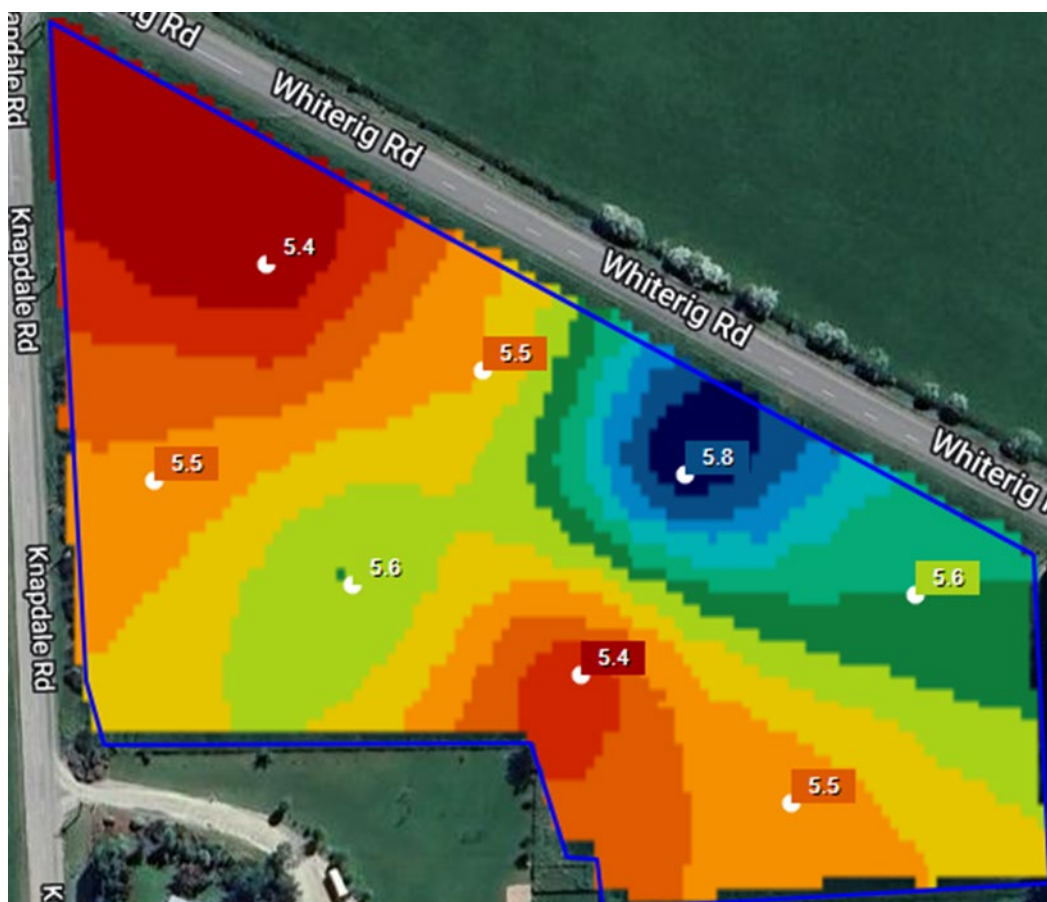
- If you have spatial data such as yield maps, EM maps, crop biomass images, that show zones consistency from one layer to another, then you can use these for taking samples within zones.
- If the grower has a good knowledge of the paddock's history – such as historic manure applications and other potential areas of difference, these areas can be treated as separate zones.
- Generally, it is at a lower resolution than grid sampling, so requires fewer lab tests and is therefore cheaper.

When to use grid soil sampling

- If previous management/crop rotation has significantly altered soil nutrient levels. For example, when small fields with different cropping histories have been merged into one field.
- If differences exist from stock grazing (e.g. winter grazing or topography causing stock camps).

The starting point is a resolution of 1 composite sample per ha, but the higher the resolution, the better. Below is the sampling plan and pH results from the FAR Southland Arable Hub, conducted at the beginning of spring 2023. Each number in the first image represents a point at which sampling occurred, while the second image shows the results of that sampling (for soil pH) and the resulting soil pH map.





Cereals

Pest control in stored grain

FAR has received a number of reports that supply of pirimiphos-methyl (Group 1B), the insecticide active ingredient in products that control grain storage pests is uncertain. Pirimiphos-methyl can be found in Actellic® 50 EC, Actellic® Dust, Grainex® 500 EC, Silo® Dust and Silo® EC. Check with your supplier for availability. Thankfully, Integrated Pest Management (IPM) techniques such as storage hygiene can go a long way to controlling grain storage pests without the use of chemicals, so consider the following when setting up your silo to store grain.

- Ensure the grain store is clean before filling with grain. Many grain storage pests are very small and are able to survive in pockets of spilled grain or residue grain left over from the previous season.
- Once the grain is in storage, it needs to be kept cool and dry. If grain is harvested at high temperature, it can quickly increase by 10-15° once inside storage, so cooling grain down will be a priority. Likewise, if grain is harvested at high seed moisture content, it may need to be dried to prevent the risk of insect infestation and fungal development.
- Monitor temperature and moisture in the silo regularly once filled with grain – an increase in temperature and/or moisture can indicate a pest infestation.
- More information can be found in [Arable Update 210](#) and in [Arable Update 211](#).
- If you do require a grain storage product, there are few that do not contain pirimiphos-methyl such as Fyfanon® a.i. 440 g/L malidison (Group 1B) and Silo® Eco a.i. 90% diatomaceous earth. Both of these products are grain protectants.
- An updated list of stored grain insecticide treatments can be found [here](#).

Autumn cultivar selection

Now is a good time to start thinking about cultivar selection for autumn sown cereal crops. Many of the new cultivars have high yield potential and robust disease resistance ratings. Selecting the right cultivar sets up the crop to yield well and provides the foundation for an integrated approach to disease management. This approach allows for greater flexibility in fungicide programme choice, which allows you to:

1. Exploit the “sweet spot” between disease control and resistance management without compromising yield or economic return.
2. Steward at-risk chemistries such as SDHIs (Group 7 fungicides) and new active ingredients such as the quinone inside inhibitors (Qils – Group 21 fungicide).

[2024 Harvest Snippets](#) outline the latest results from Cultivar Performance Trials.

For more information, see the following:

- [Cereal Disease Management Strategy](#)
- [Autumn Cultivar Evaluation Booklet \(2022-23\)](#)

Herbage

White clover seed crop desiccation

FAR has been conducting trials to identify alternative pre-harvest pre-desiccation and desiccation strategies for white clover seed crops. Products such as Buster® (a.i. glufosinate), Granstar® (a.i. tribenuron-methyl), glyphosate or Versatill® (a.i. clopyralid) give comparable seed yields to Reglone®, and are often more effective in wetter than average conditions. However, these products negatively affect post-harvest grazing, and may not be suitable when the crop is to be maintained into the following year. An organic product, GreenMan™ (a.i. fatty acids), provides effective desiccation and increased post-harvest regrowth, although it tends to be more expensive. For an information on recent FAR research on this topic, click [here](#).

Maize

Cover or catch crops for maize silage systems

Growers who have finished maize silage harvest are considering catch/cover crop options. Annual ryegrass is the common choice, but there are other options that could improve profitability and/or help meet environmental requirements. FAR's [From the Ground Up](#) magazine from this time last year contains an in-depth article on these choices (see p26), from which the table below is reproduced. If you are considering your cover crop options, the article is well worth a read.

At FAR's NCRS site this season, we elected to plant 'Nui' perennial ryegrass which will make management easier on our smaller site as this won't need to be topped or grazed before being taken off in September. Our other cover crop trials continue as usual, some of which will contain mixes with faba beans. We were able to obtain the small amount that we needed for our trials with no issues, although we have heard a report that seed of this species may be difficult to come by for some.

Table 1: Indicative example of cover and catch crop species comparisons.

Type	Species	Seed size	Seed price/kg	Seeding rate (kg/ha)	Planting depth (mm)	Dry matter yield (t/ha)	Suitability for grazing	Suitability for silage
Grasses	Annual ryegrass	●	\$	20 - 30	10	3.0 – 6.0	Excellent	Excellent
	Cereals	●	\$	80 - 150	20 - 40	4.0 – 9.0	Good	Excellent
Legumes	Faba bean	●	\$	200 - 300	50 - 70	3.0 – 7.0		Good
	Vetch	●	\$ \$ \$	25 - 40	20 - 40	2.0 – 5.0	Adequate	Good
	Lupins	●	\$ \$	100 - 150	40 - 60	3.0 – 6.0		
	Annual clover	●	\$ \$ \$	4 - 10	5 - 10	2.5 – 5.0	Good	Excellent
	Perennial clover	●	\$ \$ \$	4 - 10	5 - 10	0.5 – 1.5	Good	Excellent
Brassicac	Radish	●	\$ \$	6 - 8	20 - 30	3.0 – 7.0		
	Mustard	●	\$ \$	6 - 8	10 - 20	3.0 – 6.0		
	Turnips	●	\$ \$ \$	1 - 3	5 - 10	3.0 – 7.0	Good	

Maize silage harvest – optimising quality

Optimal harvest timing and the ensiling means optimal silage quality which contributes, in turn, to maximising milk or meat production. For optimal feed quality maize silage is typically harvested between 32 and 38% Whole Plant Dry Matter (WPDM). Depending on your crop characteristics, feed quality expectations and practical situation, the achieved WPDM% of your maize crop will likely vary. Once the maize is harvested make sure it is well consolidated within the bunker of the stack. This will maximise silage quality and minimise dry matter losses.

For detailed information on when to harvest your maize for silage, managing crop variability, ensiling best practice, and the role of silage inoculants, visit:

- [Pioneer maize silage resource page](#)
- [Corson Maize: Maize Silage Best Practice](#)
- [X121: The role of silage inoculants](#)

For those trading maize silage, to ensure the outcome is fair for both parties we encourage you to visit FAR's [Good practice guide for maize forage trading](#).

Fall armyworm (FAW) update

Confirmed FAW specimens have now been reported in Northland, Westland, Tasman, Bay of Plenty, Auckland and Waikato, along with one find in the Marlborough region. As the season progresses, later generations will have greater numbers of larvae and will present a higher risk of significant damage to crops. Later planted crops are especially susceptible. **Please scout crops**, as the earlier FAW is identified, the more effective control measures are likely to be. Further information on FAW and its management can be found [here](#).



Brown marmorated stink bug (BMSB)

This pest (see picture, right) has been detected on numerous occasions at the New Zealand border, and would pose a significant threat to a number of crop and ornamental species should it become established here (particularly maize and sweetcorn). A Government Industry Agreement (GIA) exists to prepare for such an eventuality, details of which can be found [here](#). Any BMSB finds or suspected finds should be reported immediately to MPI. Further information on identification and preventing incursion can be found on [the MPI website](#).

Oilseed rape

Post-harvest management

Most oilseed rape crops have been harvested by now which means it is time to consider post-harvest paddock management. The main issues going into the following crop are slugs, volunteer oilseed rape plant, and weed control in general. **Delay post-harvest tillage for 2-3 weeks** if possible. Burying seed straight away has been shown to trigger dormancy, which will lead to these seeds being a problem in future years. Be careful not to delay longer than this, however, as this will lead to the stubble becoming a good habitat for slugs.

Sunflowers

Harvest machinery set-up

Sunflower harvest is approaching and for those who are not experienced with the crop, this can present challenges. Pure Oil NZ provide excellent advice to their growers on this and other topics. See their advice below for setting up machinery for harvest.

- Slow drum speeds aid in harvest. Speeds of around 450 rpm for conventional headers and 250–350 rpm for rotary headers are suggested. Combines with smaller cylinders will require a faster speed and combines with a larger cylinder diameter will require a slower speed.
- Fan speed as fast as practical without lifting seed over the sieve. A common fault in sunflower harvesting is to use insufficient air for fear of losing the small seeds which are of little value.
- Concave clearance – 30-35mm for dry and easy threshing conditions. These settings are recommendations for a starting point and might need to be further optimized. Concave clearances of up to 40mm in easy threshing conditions are possible.

Weather Updates

Long-term seasonal outlook

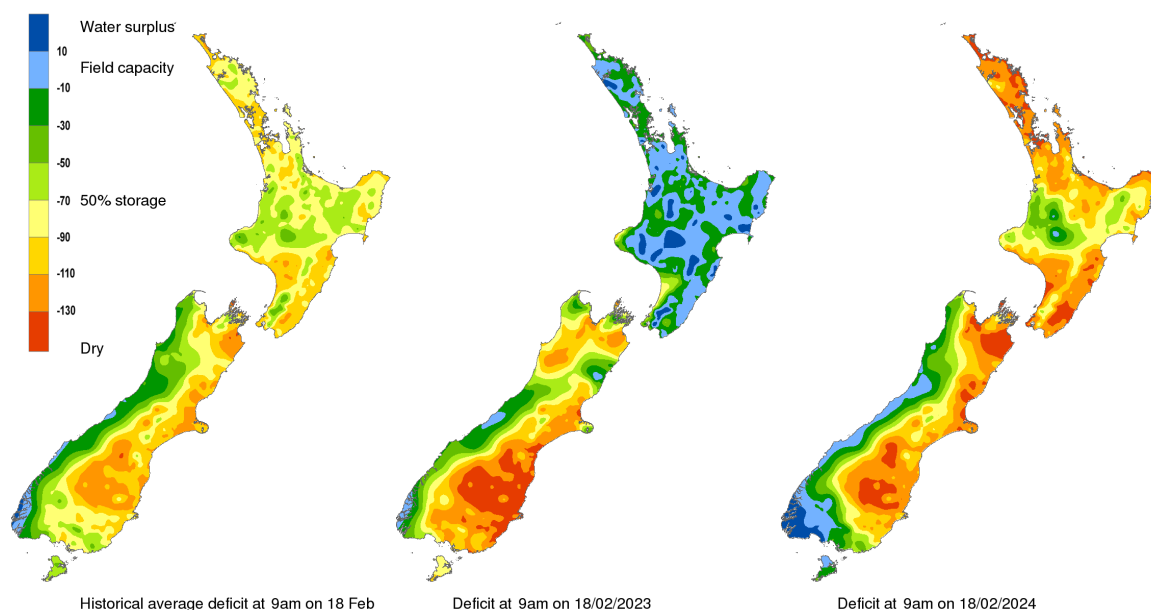
El Niño continues, and is expected to remain the dominant factor in New Zealand's climate until at least the end of April. The main outcomes of this weather system are gusty westerly and north-westerly winds, along with lower-than-average rainfall for northern and eastern areas of both islands. There is also expected to be variability in air temperatures, as air flows across the country switch between those coming from Australia or the Southern Ocean. Some areas are experiencing unusual dryness, and growers are encouraged to make use of NIWA's [drought forecasting dashboard](#). Temperatures across arable regions are expected to be higher than average.

FAR weather tool

The FAR online weather tool is a great way to keep an eye on weather patterns and to compare the current season's conditions with those of previous years. You can check it out [here](#). Click on the link and select the region you're interested in from the drop-down box at the top right of the screen. Please contact us if you have any queries about the tool, or suggestions on how to make it better.

Soil moisture data - see more from NIWA [here](#)

Soil moisture deficit (mm) at 9am on 18/02/2024



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Herbage and vegetable seed production - [Richard Chynoweth](#)

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