# Crop Action

## Issue 16 Sunday 31 August 2025

***In this issue of Crop Action:***



## Editor's note

While tomorrow marks the official start of spring in New Zealand, on arable farms around the country spring activities are well and truly underway. FAR has conducted a number of workshops and other events over winter, and planning is well underway now for spring events – watch this space! Around the country, soils almost everywhere are at (or over) field capacity, with most areas experiencing a very wet winter. Despite this, there is optimism from growers in some regions, where crops are looking strong now that we have had some better weather and the soils are warming up. Others, however, are facing some difficult challenges, with reports of drowned-out crops needing to be replanted with spring sowings.

As usual, Crop Action will bring you useful tips throughout the season, but if there is a specific issue you think you'd like to see addressed, please get in touch at ben.harvey@far.org.nz

## Crop management

### General

#### *Nutrient management for autumn-sown crops after a wet winter*

FAR has received some enquiries about whether crops that have experienced a very wet winter might be needing some extra fertiliser, as some are looking quite yellow. This could be the case, but there may also be other reasons. FAR researcher Dr Emmanuel Chakwizira has put together a resource for growers facing this situation, or who just would like to know more about this topic. It can be found here.

#### *Soil sampling tips and tricks*

To find out how much plant-available nitrogen (N) is in your soil after winter, you'll need a **soil mineral N test**; either from a lab or using a DIY quick N test (here). To start with, you might like to check out this video from FAR's Dirk Wallace showing you how to take a soil sample.

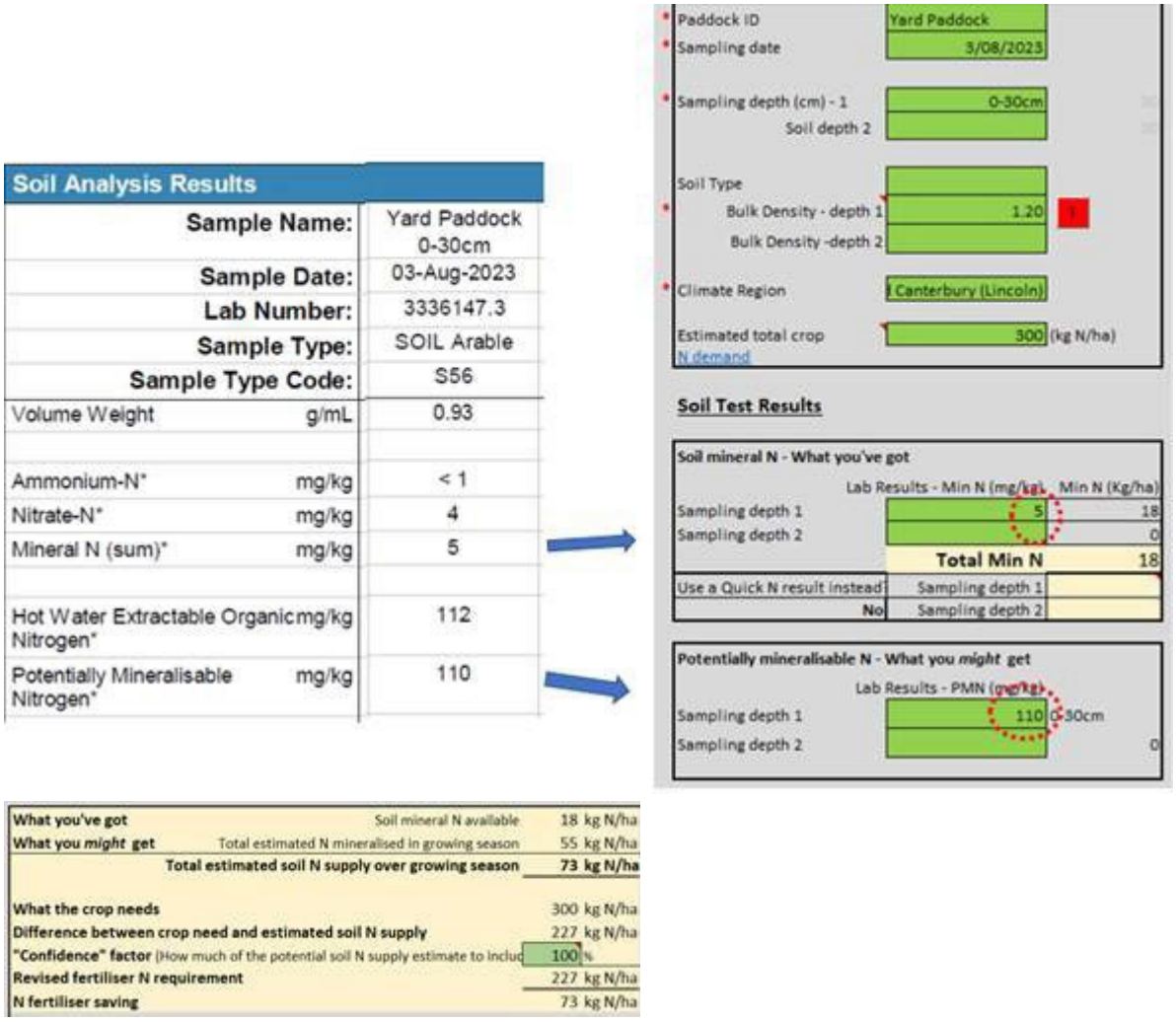
If you also want to estimate how much extra N your soil will release during the growing season, add a **potentially mineralisable N (PMN) test**. PMN can be done any time of year and doesn't need to be repeated every year.

**Tip:** Only measure PMN in the **top 0–15 cm** or **0–30 cm** of soil – no deeper.

Whether you're using just mineral N, or both mineral N and PMN results, FAR's **Soil Nitrogen Supply Calculator** (here) can help you work out the right fertiliser rate to hit your target yield.

**Example:** For a 12 t/ha wheat crop, the calculator works out how much fertiliser N (kg/ha) to apply based on your total N requirement and your soil's N supply.

If you're including PMN, you'll also enter the crop's active growing months (so only the N it will use is counted) and whether irrigation is used (which affects mineralisation rate).



| Soil Analysis Results | | |
|---|---|---|
| Sample Name: | | Yard Paddock 0-30cm |
| Sample Date: | | 03-Aug-2023 |
| Lab Number: | | 3336147.3 |
| Sample Type: | | SOIL Arable |
| Sample Type Code: | | S56 |
| Volume Weight | g/mL | 0.93 |
| Ammonium-N* | mg/kg | < 1 |
| Nitrate-N* | mg/kg | 4 |
| Mineral N (sum)* | mg/kg | 5 |
| Hot Water Extractable Organic Nitrogen* | mg/kg | 112 |
| Potentially Mineralisable Nitrogen* | mg/kg | 110 |



| | | |
|---|---|---|
| What you've got | Soil mineral N available | 18 kg N/ha |
| What you *might* get | Total estimated N mineralised in growing season | 55 kg N/ha |
| | **Total estimated soil N supply over growing season** | **73 kg N/ha** |
| What the crop needs | | 300 kg N/ha |
| Difference between crop need and estimated soil N supply | | 227 kg N/ha |
| "Confidence" factor | (How much of the potential soil N supply estimate to includ | 100 % |
| Revised fertiliser N requirement | | 227 kg N/ha |
| N fertiliser saving | | 73 kg N/ha |

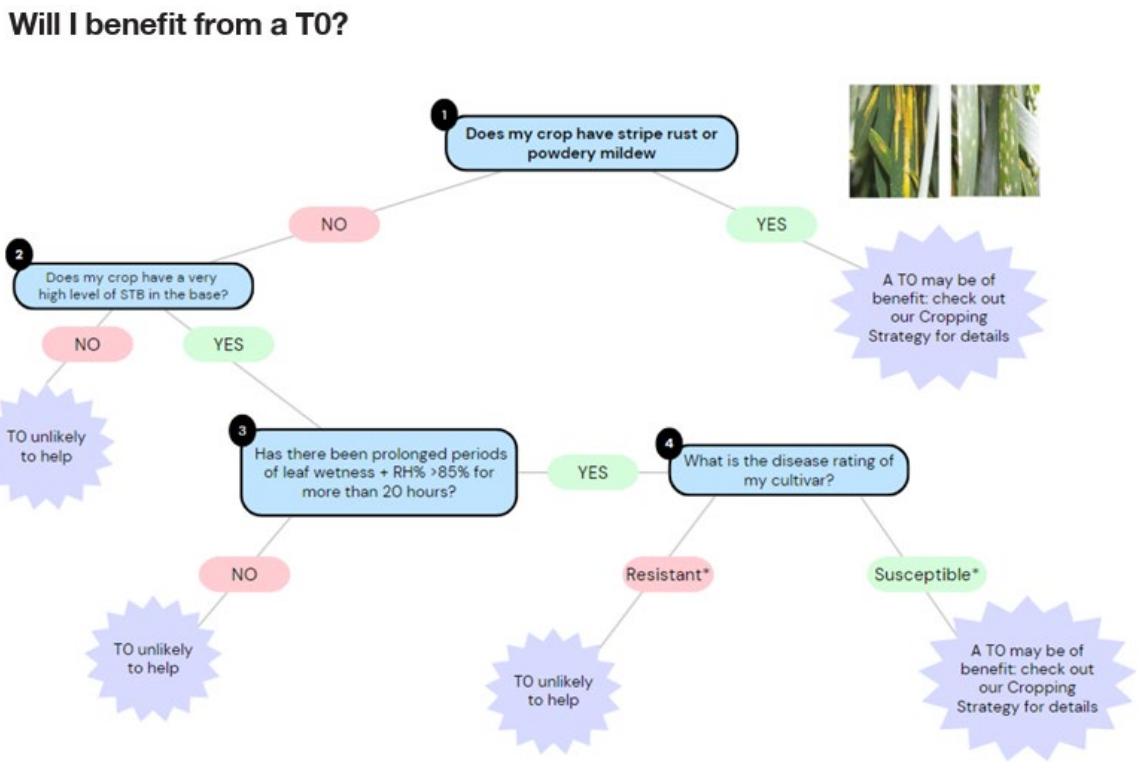
Growers wanting to sense check these numbers on farm have been trialing low or no N applications on small areas of paddocks (as small as you want) to check how crops perform without fertiliser N. On-farm try outs like these can help you to build knowledge and confidence around how to incorporate soil nitrogen estimates into crop nutrient planning.

More information can be found in FAR's publication, Nitrogen: the confidence to cut back.

## Cereals

### *Does my wheat need a T0 fungicide?*

T0 fungicides (applied around Growth Stage GS30-31) are rarely economically justifiable, with FAR trials repeatedly giving Margin-over-Cost (MoC) results that favour skipping the T0 spray (see Arable Update 231). There can be some situations where a T0 is justified, namely if stripe rust or powdery mildew is present, but in most situations the natural resistance of the cultivar should be what gets you through to the T1 timing (GS32). FAR has produced a decision tree to assist with planning, which is reproduced below. For a more detailed breakdown of your options, refer to Arable Update 219. The Cropping Strategy publication can be found here.




*Fungicide resistance*

Remember also that there is another compelling reason not to use a fungicide unless you need to: fungicide resistance. The more times a disease population is exposed to a given active ingredient, the more chances it has for resistance to develop further. Many fungicides limit the number of times it can be used per season (including seed coatings), so being mindful of this is an important aspect of preserving our valuable fungicide chemistry for future efficacy.

## *Phosphorus deficiency: check for purple leaves and know your soil fertility*

Cold, wet conditions have presented plenty of challenges for autumn sown cereals this season. At FAR's Chertsey Arable Site, autumn sown wheat is showing signs of red/purple discolouration in older leaves (see photo taken 28 August). This can be a symptom of phosphorus deficiency. Other symptoms can include plant stunting, and premature leaf senescence.


Phosphorus deficiency symptoms.

Phosphorus binds tightly to soil particles and doesn't leach in most New Zealand soil types. It is typically applied around planting so it is available to support the crop through early growth stages (the Chertsey Arable Site received 180 kg/ha Cropzeal® 20N). Phosphorus deficiency can happen in early spring, especially when soils are cold and wet due to slow uptake. Warm temperatures will kick-start phosphorus uptake, so deficiency can be temporary. With growth stage (GS) 30 rapidly approaching, older leaves may already be starting to senesce. If purpling persists, even after temperatures rise, further investigation may be warranted. Know your Olsen P, and talk to your fertiliser rep.

### *Aphid monitoring*

The start of spring means a shift from monthly to fortnightly aphid monitoring, so keep an eye on Aphid Chat to stay abreast of the latest data from your region. Data so far this year indicates that the season is shaping up to be one with lower pressure from aphid-vectored viruses, but past experience also suggests that things can change rapidly, often around October. Hence, it is vital to know what's going on in your crop.

Disease implications are linked to the results of a "race" between the crop growth and the aphid population. Once the crop grows past GS32, it is generally considered past the point where insecticides are economically beneficial. If the crop reaches this stage before aphid numbers build up, then foliar insecticides can, as a rule, be kept in the shed. The presence of beneficial insects (especially parasitic wasps in the early stages of infestation) can be the edge that helps you win the race, which is why insecticide choice and use should be carefully considered for aphid control in cereals.

## Herbage

### *Spring nitrogen on ryegrass seed crops*

Spring nitrogen requirements for ryegrass seed crops are generally set at about 175 kg N/ha, minus however much may be supplied by the soil throughout the season (often estimated at about 20-30 kg N/ha). Some growers have asked whether this holds true for newer cultivars, many of which produce significantly more vegetative tillers. The assumption could be that this would mean an extra requirement for nitrogen and certainly, these crops can look hungrier in spring and it can be tempting to add more N. However, at this stage, we just don't know.

Information to date suggests that N timing may be more important than N rate. This makes sense given FAR research suggests that earlier closing dates can raise seed yield (see below); but it's a balancing act: encouraging good growth for later partitioning into the seed without pushing an increase in late vegetative growth that will reduce seed yield. Our recommendation is to contact your seed company to discuss a strategy.

*FAR research*

In the meantime, FAR is in the second year of a three-year study on improving seed yield of the so-called "low aftermath heading" varieties, which produce more vegetative tillers, especially after the usual harvest window has concluded.

The first year of the study (yet to be published) showed that keeping the crop grazed (or topped) through late winter and up until closing was important. Early closing dates yielded much better than late ones, as long as lodging wasn't an issue. The risk with adding extra nitrogen to compensate for extra tillering is that it could increase lodging, which decreases seed yield. There could be scope for countering this with extra plant growth regulator (PGR, e.g. Moddus®). This is one of the focus points of this year's FAR trial at Chertsey. Watch this space as we continue to investigate the many aspects involved in optimising seed yield in these new cultivars.

# Maize

## *Winter cover crop termination*

Winter crop termination prior to maize planting is approaching. If you intend to cultivate, make sure there is enough time between termination and cultivation to ensure winter crop roots break down enough to achieve a good seed bed for planting maize. If the winter crop is retained rather than harvested e.g. for weed suppression (see weed FAR Focus here), heavy residue can create challenges at planting in no-till systems. A thick "mat" may hinder seedling emergence, and residue can 'hair-pin' in seed trenches, reducing slot closure and seed-to-soil contact. If you intend to no-till plant in these conditions ensure your row cleaners are set up to handle the planting environment.

*Termination timing*

There are pros and cons to different termination timings. The results from five years of trials (2017-2022) in a no tillage system, where residue was retained for integrated weed management and termination timing ranged from 3 to 34 days before planting, highlighted the following:

*Pros of earlier termination*

- Significantly stronger early season maize growth, regardless of winter crop.
    - This was not driven by nitrogen (N) availability as the maize did not start utilising soil N until 3–5 weeks after planting. Lower soil temperatures with the later termination timings may be important.
- A 'brown bridge' period may help minimise insect populations and risk.
- Early termination supported root breakdown, which in turn, is likely to support more effective cultivation.

*Pros of later termination*

- Greater biomass over winter and living root days.
- Despite slower establishment, in most years the maize caught up and yields were not significantly reduced.
    - However, in dryer years, there was a trend for lower maize silage and grain yields the closer the termination timing was to maize planting (possibly due to moisture competition).
- Overall where there were winter legume crops there were greater maize yields despite termination timing (and less N fertiliser was required).

Find out more about cover crops here. You also might like to check out the booklet from 2023's "Beyond First Principles" workshops, here or 2024's maize winter workshops, here.

# Oilseed rape

## *Application of spring fertiliser*

Data from the ongoing South Canterbury Monitor Farm Study (MFS) supports the practice of aiming for a GAI of 3.5-4 by the beginning of flowering. In order to achieve that, an application of spring N should be going on in the next couple of weeks. Crop Action will have more on GAI in the coming months, but for now the most important action is to get that nitrogen on. Consult your agronomist for exact rates and timing.

# Weather Updates

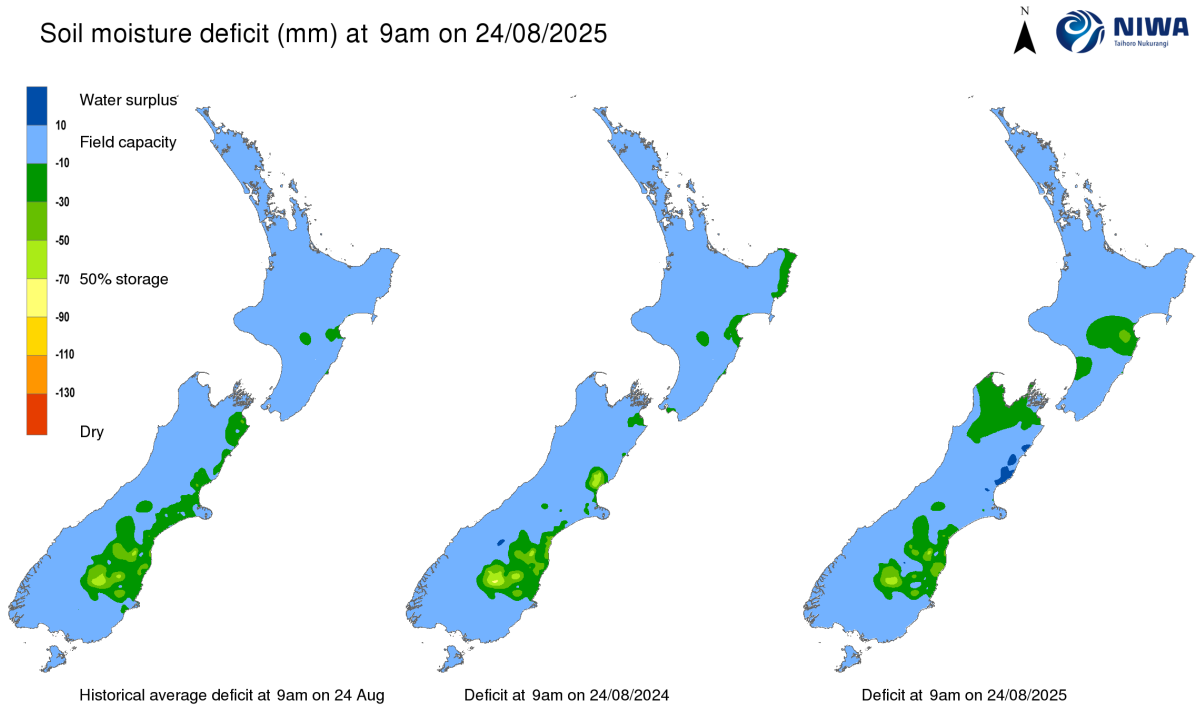
## *Long-term weather outlook*

The August to October outlook summary from Earth Sciences New Zealand (formerly NIWA) notes a slight increase in the chances of a La Niña system developing by the end of the year, but overall the chance remains low. This means that the most commonly experienced systems for this three-month period will be those that bring north-easterly to easterly air flows, with an increased likelihood of heavy rainfall events. Above average temperatures are expected for all of New Zealand, except for the east of the South Island, which is likely to be either average or above average. Frosts and cold snaps will be less frequent. Rainfall levels are anticipated to be above normal for the north and east of the North Island, while the west of the South Island is equally likely to be average or below average. The rest of the country will be either normal or above normal in terms of rainfall.

## *FAR weather tool*

The FAR online weather tool is a great way to track 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 weather station closest to you 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.



## Contact the editor

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