

Make grain testing a priority this harvest

Grain testing has been available from Nutrient Advantage Laboratory Services for a couple of years now and is becoming increasingly popular with agronomists looking to be more precise with nutrient budgeting.

If you haven't tried it yet, it's as simple as collecting 400 grams of seed off the header, putting it in a plant tissue test bag and submitting it to the laboratory under the code G1.

When you get the results back, they are presented in mg/kg or percentage terms, plus scaled up to 'nutrient removed per tonne of grain' for convenience.

Multiply the nutrient removed per tonne of grain figure by the yield from the crop and you quickly see how much of the nutrient has been removed from the paddock.

The test is available for wheat, barley and other cereals, plus canola and pulse crops.

In the past, standardised removal tables have been used to estimate nutrient removal, but we know there is a large natural variation between paddocks.

Putting a figure on the exact concentration of phosphorus in the grain harvested significantly improves recommendations.

Regular soil testing is still needed to see if soil nutrient levels are changing in response to application rates and to see where individual paddocks are sitting in relation to critical values. However, for those situations where paddocks are at optimal Colwell P levels and growers only want to replace the phosphorus removed at harvest, grain testing can be particularly valuable. For wheat, the test also reports the levels of zinc and phosphorus per seed, as a guide to potential seedling vigour.

Research has found that where zinc levels were over 500 nanograms of zinc per seed¹ and 130 micrograms of phosphorus per seed², vigour could be expected to be strong. Where wheat grain is below these benchmarks, growers may need to consider additional fertiliser to support early growth or use another seed source. I think most growers would agree that it is better to know sooner rather than later.

Step by step grain testing:

1. Collect samples by paddock, crop or area as required.
2. Supply approximately 400 grams of threshed seed (no stalks), in a Nutrient Advantage plant tissue test bag.
3. Submit to the laboratory under the code G1. The paperwork of Nutrient Advantage Advice online request is similar to a plant tissue test.
4. Receive your report.

Your report will include:

- Moisture percentage
- Nutrient results (in mg/kg or % units)
- Some important nutrient ratios
- 1000 grain weight (for wheat only)
- Seed zinc and phosphorus contents (for wheat only),
- Nutrient removal scaled up to 1 t/ha yield

Moisture percentage and 1000 grain weight are also reported. This allows an appropriate seeding rate to be accurately calculated. (Seed sowing rate kg/ha = Target plants/m² x Grain weight of 1000 seeds / Germination %)

Make grain testing a priority this harvest. It's a simple and inexpensive way to get started with accurate starter fertiliser recommendations for next season and it's sure to impress your clients.

For more information, feel free to contact jim.laycock@incitecpivot.com.au or 0427 006 047

If plant sampling bags are required contact Nutrient Advantage Laboratory Services on 1800 803 453

References:

- 1 'Importance of seed Zn content for wheat growth on Zn-deficient soil' by Zdenko Rengel and Robin D. Graham, published in *Plant and Soil*, 173: 259-266, 1995
- 2 'Effect of seed weight, and seed phosphorus and nitrogen concentrations on the early growth of wheat seedlings' by D. G. De Marco, CSIRO, published in the *Australian Journal of Experimental Agriculture*, 30, 545-9, 1990

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