

CROPPING



CROP ADVICE: Field Systems soil advisers Ed Scott and Michael Eyres talked about improving paddock productivity at the recent Hart Field Day.

GROWERS LEAVING YIELD IN THE FIELD

FIELD Systems soil adviser Michael Eyres said one of the biggest problems agriculture faced was that growers often did not test the area of the soil that was doing the "heavy lifting" at the end of the cropping season.

"Often that heavy lifting can come from a soil horizon farmers have never tested and they would have little information on how those lower soil layers operate," he said.

"Soil horizons can vary greatly from 1 centimetre to 100cm - you can go from very low pH to high pH at different depths.

"By understanding the layers, you better understand where the moisture sits, and nitrogen sits.

"Plants drink, they don't eat, so we need to better understand soils to depth and the yield/protein correlation research we have undertaken gives us a better understanding of where to look."

Colleague Ed Scott said their research also looked at the correlation between the different grade specifications of wheat and their yield/protein data.

"In one instance, from APH to ASW, there was only a difference of 7 units of N," colleague Ed Scott said.

"Over a couple-of-tonne crops, suddenly you may have a 20-kilogram difference of urea that you could be shuffling across to somewhere else.

"That's where the zones help you to get that efficiency - you can move the rate to where it is needed.

"You are then spending the same amount on urea, but increasing profitability."

- ALISHA FOGDEN

Data offers soil insights

BY ALISHA FOGDEN

PROTEIN meters on harvesters are growing in popularity, not only to accurately grade and blend grain, but to better assess soil productivity.

At the recent Hart Field Day, guest speakers Michael Eyres and Ed Scott - soil advisers from Field Systems - explained that the yield and protein data could be used more extensively to improve on-farm productivity and profitability.

The two have been working with NSW analytical technology company Next Instruments, which created the CropScan 3000B

Near Infrared Transmission Analyser - an on-combine real-time recorder of protein, moisture, starch, fiber and oil content in a range of grains.

Mr Eyres said five years ago, with Mat Clancy from Next Instruments, they began analysing the protein data alongside yield maps with soil core and pit data to delineate and identify new soil zone configurations within a paddock.

These zones differed from other methods, which outlined distinct zones, as the yield/protein/moisture/soil data maps related more to soil behaviour and crop performance.

"As soil advisers, we wanted to use that information to adjust and validate what needed to happen in the paddock," Mr Eyres said.

"These zones would help us identify any soil and crop issues to better manage inputs, particularly nitrogen, the following year."

The zones (quadrants) were separated into four colours:

- Green = high yield/high protein - "the good zone"
- Yellow = high yield/low protein - "a zone where you could maybe add more nitrogen to get a protein and yield change"
- Blue = low yield/high

protein - "not so good. In these zones, there may be water limitations, dense dispersed clays etc where you get the rainfall but the crop can't access the moisture"

■ Red = low yield/low protein - "the danger zone".

"By identifying these zones, particularly your red and blue zones, it's then about trying to troubleshoot those areas from a longer term soil management perspective," Mr Scott said.

"Sometimes it's not just a matter of more N. It could be more about getting more efficiency out of the N we are applying, or shuffling that

placement of N around.

"With a blue zone - a moisture limiting environment - what's the decision-making for that area? Could it be a clay issue down in the profile? Or whether gypsum needs to be applied to improve the soil structure, which would then start making the N more efficient.

"The quadrant zones help growers to better understand their high performing areas and where there is N use efficiency. They then get a better dollar/hectare spend out of applied N and address the poor performing zones to get better stability of performance in them."

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