

◁29...NEW LIQUID FERTILISERS IMPROVE NUTRITION

tain 100 per cent water soluble phosphorus, potassium phosphate, chelated zinc and ammonium nitrogen.

Chelated zinc has been used to improve zinc availability where the soil pH is outside the optimum range for zinc uptake (5.0 to 6.0).

Where potassium is supplied, potassium phosphate is the form used. It is the best source of potassium for direct contact with germinating seedlings because it has a low salt index.

Ammonium nitrogen can improve phosphorous uptake by the crop. As plants take up nitrogen, phosphorus comes along with it.

Nutrient balance

EASY NP fertiliser contains 11 per cent nitrogen (w/v) and 16 per cent phosphorus (w/v).

Where zinc is required, EASY NP plus Zn fertiliser contains 10 per cent nitrogen (w/v), 15 per cent phosphorus (w/v) and 0.7 per cent zinc (w/v).

EASY NPK 27 fertiliser contains eight per cent nitrogen (w/v), 14 per cent phosphorus (w/v), five per cent potassium (w/v) and 0.7 per cent zinc (w/v).

The products are available from Incitec Pivot's agents and dealers in bulk tanker loads or 1000 litre containers. Supplies are held in Brisbane and Moree for growers. 🌱

Variation kept in check at Brookstead

A three year program of variable rate application of BIG N fertiliser has resulted in cost savings and harvest improvements for Brookstead cotton grower Russell Clapham.

Nitrogen variation between the top and drain ends of his cotton paddocks had been causing uneven defoliation times, with cotton at the drain ends still growing big, rank bushes while the top was ready to pick.

"Before Bollgard cotton, grubs couldn't be controlled in the rank areas, resulting in yield reductions up to 30-40 per cent compared with the better areas" said Russell.

Soil tests confirmed that the pattern he was seeing was caused by a nitrogen variation. Intensive soil testing was used to gain as much information as possible about the fertility of paddocks, with samples taken at two hectare intervals.

"We started by taking little steps," said Russell.

Paddocks were split in three for BIG N rates so that the top end received the highest rate, the middle a lower rate and the tail end received the least.

Although his system has become more precise as the years have passed, Russell cautions growers to tread carefully when approaching variable rate technology.

He now has yield map data, soil test data and previous application rate maps as source material. With the help of his son, Nathan, he creates specific BIG N application maps for each paddock each year, which are loaded onto a data card in the tractor.

Application is automated with the use of a Raven flow controller and GPS. But while the potential of the equipment hasn't really been tested, he's reached the limit to which he is willing to refine the system at this stage.

"I could split the paddock up into 100 pieces and treat every area differently, but it comes back to the time spent and the returns to be achieved," he said. "For the work we've already done using a few soil tests and some agronomic advice, we have fixed 90 per cent of the problem."

In fact, Russell is so pleased with the results so far, he's planning to cut back on his use of variable rate this season.

"The crops are cutting out much more evenly. There's been a definite visual improvement and the yield monitors show that yields vary by only about 10 per cent across the paddock," he said.

At the same time, he has been saving on fertiliser costs by better targeting rates to what's required and



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Russell Clapham, farming at Brookstead, has used variable rate application of BIG N fertiliser to even out crop growth and yields.

protecting the fertility of the soil at the top ends of the paddocks.

“You can apply all the high technology machinery and the best agronomy you like, but at the end of the day, you’ve got to assess what you’re going to get out of it,” he said.

“Everyone’s learning with variable rate — there aren’t any hard and fast rules.”

Quick wins

Russell suggested three ways for cotton growers to achieve quick wins using variable rate technology.

1. For smaller farms, use BIG N.

Not only has Russell found BIG N well suited to making precise variable rate applications, but it also saves him time.

“Because BIG N is delivered to the paddock, you don’t have the added job of keeping supply up to the machine,” he said. “That’s important to me because fertiliser application is a one-man job.”

2. Note losses from Fusarium.

When intensive maps of Fusarium wilt outbreaks by the Department of Primary Industries were overlaid with yield maps from the same paddock, it showed a direct link.

Soil testing confirmed that where the Fusarium killed the cotton, the crop didn’t use all the nitrogen applied.

Russell reflected this in the next BIG N fertiliser application made to the paddock, with 100 metre square patches receiving lower BIG N rates than the rest of the paddock.

“It cut down the overall fertiliser spend and evened up growth in the following crop,” he said.

3. Look at newly lasered paddocks.

Russell has seen nitrogen requirements vary significantly following a cut and fill.

“We have varied rates from 30 kg per hectare of nitrogen up to 200 kg per hectare of nitrogen on newly lasered country, with good results,” he said. “You wouldn’t do it on established paddocks, or you could end up with more mess than you started with!”

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