NEW FERTILISER STRATEGY GIVES GREAT RESULTS
Achieving long-term gain to a healthier all-round system with BSN-SS

Greg Elliot – Area Manager (Western Australia)
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What's in this Insight

This Insight is based on an article that appeared in the newspaper ***'Farm Weekly'*** dated 29 October 2009 about the results of a newly introduced fertiliser system using **BSN Superstrike (BSN-SS)**. In parenthesis, this remarkable story is re-told, as the message itself is timeless.

"A LONG-TERM STRATEGY of ameliorating hostile clay soils, and the introduction of a new fertiliser strategy resulted in more robust cereal plants, achieved better yields, reduced costs and climate risk and even improved returns from livestock grazing stubble at a farming enterprise in Western Australia's central wheat belt.

The Background

Peter Waters and his father Geoff crop approximately 5,000 hectares near Kununoppin – planting wheat, barley, lupins and canola. They run about 1,000 merino and 1,000 SAMM breeder ewes. The average growing season rainfall is 200-300mm, and while it's been considerably less than that in recent years, the 2009 season saw a return to the average. Most of the property is situated on 'the toughest clay you could think of'.

Throughout the previous decade the Waters were achieving cereal yields of 1-1.1 tonnes/ha (often with high screenings) with very low inputs, applying 65-70kg/ha of phosphorus and nitrogen in granular form at seeding. Yields weren't very high, but with the low inputs they were making money on it. The crops usually looked good in an average year, developing a lot of plant matter but were 'running out of puff' towards harvest – and the heads weren't filling. It was considered that the plants were not being looked after properly, so the decision was made to change their approach and look at a system which would increase head-fill when it was needed.

The Solution

Working with Consultant Greg Elliot from RLF Wyalkatchem WA, the Waters made changes to their soil liming program, and introduced an Integrated Fertiliser Management (IFM) strategy aimed at improving plant health, fertiliser efficiency and increased yields.

Using limed sand to address soil acidity is a relatively common practice in the district, but it is a slow process. Peter and Geoff began to use crushed limestone and started seeing results earlier than usual. Calcium levels increased which improved soil structure and water-holding capacity.

However the most important change was the IFM strategy.

They reduced the up-front phosphorous and nitrogen rate to 60kg/ha and applied **BSN-SS** seed treatment.

- By dropping the nitrogen rate the entire fertiliser budget was not committed to the season thereby risking a bigger loss if the season turned bad.
- By applying **BSN-SS**, increased root mass and a more vigorous and healthy plant was established thereby enabling the seed to better look after itself during germination.

The Waters then monitored the season's progress and followed up six weeks later with an application of RLF's Crop Specific Foliar **Plasma 828** at 750-1000ml/ha. Crop Specific Foliars supply a high dose of soil-immobile ions (phosphate, magnesium, and trace elements including zinc, manganese and copper) to make up for the slowing down of plant activity due to limitations in soil availability and mobility. CSF is designed to stimulate root growth, enabling crops to better utilise soil nutrients and moisture.

The Results

Peter reported that the results of the new IFM system, while partly hampered by a run of well below-average rainfall seasons, speak for themselves.

"The wheat and barley plants have been healthier," he said. "The **BSN-SS** seed treatment produced a big root mass, which when combined with the better soil structure and water-holding capacity from the crushed limestone, enabled the plants to extract moisture and nutrients more easily and to better tolerate stress.

We initially did a trial by applying the seed treatment to one half of a paddock and leaving the rest. The untreated seed was being belted by bugs, while the treated seed had virtually none – and because the treated plants were less stressed they weren't moving the sugars to the outer, younger leaves, so they weren't as palatable to the bugs.

Kununoppin farmer Peter Waters (left), and Greg Elliot – RLF Area Manager (Western Australia)

Head fill and yield has improved. Where we were previously getting 1-1.1 tonnes/ha, we're now achieving 1.7 tonnes/ha, although this is obviously dependent on rainfall. Grain quality has also improved, with next to no screenings and very good hectolitre weights".

He went on too say that "we're also subjected to periodic frosts here at Kununoppin, but we've found it doesn't impact on the more resilient healthier plants quite so badly. So, we've improved our climate risk management and our fertiliser efficiency with the new system. We've also got an unexpected bonus with our stock. Previously when we put them on the cereal stubbles they wouldn't eat a lot of it and would lose condition, but after the introduction of the IFM strategy we find that they graze the cereal stubble right back, and actually improve their condition".

The benefits have been a changing-experience for Peter and Geoff Waters. Better grazing, better yields and grain quality, improved fertiliser efficiency, improved pest and frost tolerance, less passes on the tractor and improved risk management – they have all made a difference and have resulted in A MUCH HEALTHIER SYSTEM".