



Wheat – Boree Creek NSW

McLean Family | 'Hopefield', Boree Creek NSW

The use of a new continued-release phosphate fertiliser has underpinned yet another win for Boree Creek farmers, Geoff, Marie, Matt and Renee McLean of 'Hopefield', in the 2005 Narrandera Show Society Wheat Competition.

Their crop of Janz wheat just pipped another nine entries on the basis of its overall trueness to type, freedom from weeds, yield potential, crop uniformity and general management to win the event.

According to fourth-generation wheat grower, Matt McLean, the only thing different about this year's crop was a decision to adopt a new plant nutrition program developed by BioAg.

The McLean family, who conduct a mixed farming enterprise across five adjoining properties totalling 1,300 ha at Boree Creek, 30km south of Narrandera, decided to incorporate *BioAgPhos*[®], an immediate and sustained release phosphate fertiliser made from high-grade reactive phosphate rock, into their cropping program last year.

"We heard about *BioAgPhos* from other farmers in the district, who all seemed pretty happy with the results," Matt McLean said. "Instead of the plant using up all the nutrients in a short period, *BioAgPhos* continuously releases phosphorus as the plant needs it. It made sense to us, so we decided to give it a go."



Boree Creek wheat farmers, Matt and Geoff McLean

The McLean family typically plants about 640 ha of winter cereals, lupins and canola on a four-year crop rotation program. The final crop is undersown to lucerne and clover pastures, which are then utilised by 1,300 Merino ewes as part of a wool and prime lamb enterprise.



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BioAg prepared a custom fertility program based on soil samples collected from first, second and third-year cropping paddocks. The program then recommended the use of various solid and liquid nutrients according to specific needs of each paddock.

The first-year crop program was based on a pre-sowing application of 100kg per ha of *BioAgPhos* and 500kg per ha of lime. The mix was spread by a local contractor using a belt spreader and then incorporated with a pre-sowing cultivation and/or harrowing.

Immediately before sowing, a liquid microbial culture called *BioAg Soil & Seed™*, which stimulates germination, root development and soil microbial activity by delivering a rich source of essential nutrients directly soil, was applied at 1.5L per ha as a tank-mix with a pre-emergent herbicide.

In addition, 50kg per ha of a conventional zinc-coated MAP (mono ammonium phosphate) fertiliser containing 11 percent nitrogen, 22 percent phosphorus, 2 percent sulphur, 0.5 percent zinc, was incorporated at sowing to ensure rapid germination.

The third-year crop program consisted of a pre-sowing application of 100kg per ha of *BioAgPhos* and 1,000kg per ha of lime; 50kg per ha of ammonium sulphate (SOA) applied as a pre-drill; 1.7L per ha *BioAg Soil & Seed* before sowing and 50kg MAP + zinc at sowing.

Both programs also recommended the application of *BioAg Balance & Grow®*, a foliar fertiliser which delivers essential nutrients directly to the plant to stimulate vegetative growth and improve soil microbial activity.

Matt McLean said there was no additional outlay to implementing the BioAg program, apart from the extra effort of using a powdered fertiliser instead of a conventional granular product. “We used to apply MAP at sowing



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at 100kg per ha, which at \$475 per tonne delivered, equated to \$47.50 per ha or \$2.16 per unit of phosphorus,” he said.

“*BioAgPhos* cost about \$300 per tonne delivered and was applied at 100kg per ha, which equated to \$30 per ha. We still applied 50kg per ha of MAP at sowing, which worked out to be \$23.75 per ha. This meant we applied about 27 units of phosphorus at \$1.99 per unit. Finally, the *Soil & Seed* cost about \$5 per L and was applied 1.5L per ha, giving a cost of \$7.50 per ha.

“All up, the BioAg program cost \$13.75 per ha more than last year’s program, but we also applied five more units of phosphorus per hectare. On a P-for-P basis, it was actually cheaper. Sure, it’s a bit more work spreading *BioAgPhos* and applying the liquid treatments, but we think it’s worth it.”

Although not electing to implement the foliar nutrition program, the McLeans had an extremely favourable outcome on one trial paddock. “We had a 40 ha paddock that looked terrible,” Matt McLean said.

“The plants had no roots and were yellow. We didn’t know what was wrong. It was clearly lacking something. We applied *BioAg Balance & Grow* at 1.5L per ha and calcium nitrate at 7kg per ha, plus trace amounts of vitamin B5 and dandelion, as a foliar application in early September.

“The turnaround was amazing. It was the difference between having a crop and no crop at all. It cost about \$15 per ha plus application, so we aren’t going to do this every year, but we would do it again if we needed to. In practice and outcome, it’s no different to top dressing.”

Matt’s father, Geoff McLean, said he was sufficiently impressed with the new program to warrant implementing it again next season. “This year’s crops grown using BioAg are as good or better than our conventional ones” he said. “We seem to have less bulk and more grain. This year’s barley crops are the best I’ve ever grown.”

“A third-year crop of Schooner barley undersown to lucerne and clover averaged 28 bags per acre (4.6 tonnes per ha) and went Malt 1. Likewise, one of our first-year wheat crops won the wheat competition and it yielded 22 bags an acre (4.4 tonnes per ha).

“Both crops were grown using the BioAg program, so it’s certainly not setting us backwards. Sure, we’ve had a lot of rain during spring, but rain alone is not completely responsible for the end result.

“It may be five or ten years before we see the full benefits of BioAg in terms of improved soil structure and fertility, but hopefully it will be worth it. We need to think long-term if we want to keep our soils healthy rather than just keeping the crops going.



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“My family has been growing crops here for more than 100 years. When you think about it, it’s amazing that we can still grow crops here at all.”

The McLeans are also considering adopting BioAg *Sulphate of Ammonia* (SOA) into their pre-sowing program. For the past five years, they have pre-drilled 50-100kg per ha of urea or granulated ammonium sulphate to overcome an observed nitrogen deficiency that typically resulted in pinched grain.

“Next year, we are thinking of using BioAg SOA, which is about half the cost of GranAm,” Matt McLean said. “It only costs about \$6-7 per ha to spread using a contractor and we’ll simply incorporate it at sowing.”

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