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BioAg COUNTRY



BioAg Cotton Trials 2012-13 season

This year we conducted our second year of cotton trials in the Riverina. These trials follow those that we have already conducted in Pakistan utilising the BioAg products BioAgPhos, Soil & Seed, Balance & Grow, and Fruit & Balance. They also coincide with our replicated and non-replicated trials in the Arkansas, Mississippi and Tennessee areas of the US.

The Australian trial blocks ranged in size from seven hectares through to commercial farming blocks and as we go to print results are still arriving. None-the-less we are witnessing some very exciting results with yield increases of 1.3 bales/ha on return cotton paddocks.

Commins Enterprises, cotton growers based between Whitton and Darlington Point are one of the growers who are participating in the

trials for the second year running. We achieved a yield increase of 0.9 bales/ha in the 2011-12 trials and another 1.3 bales/ha in 2012-13 season. This increase of yield in the first year and then a subsequent increase again in the second using the same trial block is consistent with what occurs to our commercial growers' crops across many different crop types. The improved health of the soil and its ability to make existing and added nutrients more available improves the crops in a variety of ways.

Pending the return and interrogation of the full set of results, perhaps the unquantifiable results for this season are the most pleasing aspect to date. Again this type of feedback is typical of the feedback we receive from our existing commercial customers and is now being reflected in the cotton trials.

- Achieved a 5% yield increase across the board.
- Crop was ready for picking 4-5 days earlier than the control meaning they missed the last rain last year.
- The crop looked uniform and even across the paddock. No renegade plants putting too many nutrients and energy into growth rather than yield.
- The top bolls filled properly and cracked open fully. This lead to a cleaner pick off the top bolls.
- The crop had uniform growth with consistent internode lengths. No nutrients or energy waisted in unneeded plant growth.
- No difference in gin results despite the increased yield. Crop wasn't sacrificing quality for yield.

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A comparison of a BioAg treated cotton plant (left) versus the control plant.



One of the Commins trial blocks with the BioAg trial on the left.

Commins Tiralee 1 Results 2012

	Control	BioAg Treatment
Area	3.80 ha	2.97 ha
Average Yield	9.7 bales/ha	10.6 bales/ha
Total Volume	37.0 bales	31.4 bales
Lint Weight	8,049 kg	6,833 kg
Lint Wt/ha	2,119 kg	2,301 kg
Return on Investment		
Cost of Treatment = \$132	Net ROI ~ 4 x	
Net Return = \$488		

Commins Tiralee 1 Results 2013

	Control	BioAg Treatment
Area	6.6 ha	6.7 ha
Average Yield	11.58 bale/ha	12.87 bale/ha
Return on Investment	Cost of Treatment = \$120.00 Nett Return = \$491	Net ROI 4.9



After five enjoyable years with BioAg, I have chosen to broaden my horizons and gain experience in other facets of Agriculture. This spring newsletter gives me a chance to thank all of those I have worked alongside, and an opportunity to provide some history behind the development of a few key products that I was fortunate enough to be a part of.

MagPhos and PotPhos

Throughout my travels and agronomic experiences in south-west Victoria, I worked with a number of valued dairy farmers and graziers alike. These growers faced many issues including seasonal, market fluctuations, cold winters, dry summers, and inherent high iron, manganese, and in some cases aluminium levels - issues that posed a big challenge from a fertiliser efficiency and productivity point of view.

As many of you are aware BioAg produces BioAgPhos, manufactured from high quality RPR and containing a minimum phosphorous content of 12%. While phosphorus management in a grazing enterprise represents a challenge in itself, we identified the need to offer further inputs in areas of potassium, sulphur and magnesium to add value to a farmers operation and maximise production. After a few years of paddock trials and experiences, BioAg released MagPhos in early 2013, followed by PotPhos.

The development of MagPhos grew out of evidence that many of our dairy pastures in southern Victoria were lacking in magnesium. Low levels of magnesium in the cow's blood were leading to *Grass Tetany*, the major cause of death to adult cattle in our part of the country. In attempts to rectify this, most dairies were feeding magnesium on a daily basis, while some farmers were also applying dolomite lime. This was time-consuming, messy and difficult to do in wet paddocks.

At this time, our R&D team in Narrandera noted that a superfine magnesite lime provided a quicker acting form of magnesium that improved the magnesium levels in foliage and therefore the magnesium consumption of animals.

To simplify the transport and application for our clients we blended BioAgPhos with dolomitic magnesite to produce MagPhos. There are few options on the market that provide a simple and balanced approach that combats the large underlying issue of magnesium deficiency, so MagPhos continues to grow in popularity and demand.

PotPhos followed MagPhos in its release to the market. Through many cold winters and subsequent periods of high rainfall, pasture systems in southern Victoria were hitting spring with deficiencies in potassium and sulphur.

Many fertiliser options on the market provided potassium in the *Muriate of Potash* form or as *Potassium Chloride*. Potassium in this form typically did not last long in the system so required subsequent inputs in order to maintain or build levels. There was also the associated *chloride effect* where it converts to chloride salt, which has a toxic impact on many plants and reduces plant yields.

Trials of Potassium Sulphate (SOP) gave good results in the field, improved plant health, catered to sulphur deficient pastures, and avoided chloride and fertiliser *burn*. PotPhos, a blend of SOP and BioAgPhos provided a well-balanced option for graziers heading into spring and it continues to grow in popularity among graziers where potassium, sulphur and phosphorus are required.

On a personal level, I would like to take this opportunity to thank all of the people I have worked with over my five years with BioAg. I have made many lifelong friends, gained valued experience and knowledge along the way, and hope I have added some value to farmers and industry alike.

Kind Regards
Richard Chibnall

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- An extra fruiting node consistently across the treated blocks.
- Often the worst blocks were treated with the BioAg program. These blocks yielded at least as well as the better blocks.
- When pupae busting, they were able to rip at a deeper depth, in a higher gear and used less fuel on the treated blocks against the control blocks.
- Following a cotton crop treated with a BioAg program the winter cereal crop has a stronger root structure and held on longer than comparative crops without a BioAg program in our dry winter/spring period.

We are planning a number of summer trials this coming season with the majority of these being on a commercial scale. This allows for greater uniformity and consistency of results with less variation caused by changes in soil type and paddock history. The planned trials will be conducted on cotton, and potentially on soybeans and tomatoes.

As always we would be happy to talk to you further about the trials or BioAg programs. Contact your local BioAg representative or our head office in Narrandera.

New **VIDEOS** provide insight into **GROWER SUCCESSES**

Recently we released videos that provide a snapshot of the BioAg programs that two of our successful growers are using.



The first is an interview with Chris Molineaux from Casella Wines in the Riverina. The team, who manage 900 hectares of wine grapes as well as dry acre and irrigated broad acre agriculture, had the goal of improving the soils health in order to see benefits such as higher yields and a better quality of product. The BioAg program they utilise consists of BioAgPhos, Soil & Seed, Balance & Grow, and Fruit & Balance which has provided increases of both plant-available P as well as total P. Through the program the group are aiming to reduce the reliance on conventional inputs, reach targets earlier in the season, and increase the colour levels of their red grape varieties.



The second video features Tony Cristofaro of Wamoon Estates, citrus and grape growers based in Leeton, NSW. Tony started trialling BioAg programs in early 2003 and soon adopted these to his entire crop, utilising the products BioAgPhos, Balance & Grow, Soil & Seed, and Fruit & Balance.

Through the continued use of the program, Tony has found his citrus to be of a consistently high yield that is similar year to year and the fruit is also of a consistent size which is in the range desired by the consumer. Grape yields have similarly been of high volume and quality, while at the same time reducing the plant canopy and therefore water consumption. The fruit produced is of premium quality and Tony has in turn received premium prices.

To see the videos visit the BioAg website at www.bioag.com.au/testimonials



Case study –

Decreased milk fats in otherwise high yielding dairy cows

Daniel Hill, BioAg's Area Manager for western Victoria was recently asked for advice from a dairy farmer who had cows grazing on BioAg treated pastures for the past four years. During this time, his total milk yield had increased and milk protein levels were consistently high, but the amount of milk fats had decreased.

BioAg sought the advice of David Atherton PhD who is in charge of distributing BioAg products in the UK and one of the UK's better-known animal nutritionists.

David's advice was interesting in that he highlighted that rumen digestion is the *driving force* behind protein levels, yields, and milk fats in dairy cows.

In general terms, David suggested that as grass quality improves, energy and protein levels increase as do polyunsaturated fatty acids (PUFAs), yet fibre levels have to fall.

The polyunsaturated fats depress fibre digestion that again reduces rumen acetate and milk fats, while fats coating fibre particles prevent microbial digestion, which cause at least some of this depression of fibre digestion in the rumen.

The upside of the decline in butterfat is that you get more milk and more protein, so in this case a decline in butterfat is a positive sign of an effective soil and pasture improvement treatment program.

David also provided simple advice on how the reduction in butterfat can be minimised:

- Continue with the pasture treatment program since it is improving soils even if it does depress milk fats, there are more positive outcomes than negative. Poor soil health will have a detrimental effect on the plant and cause problems for the livestock.
- Feed additional roughage while cows are on pasture (typically baled mature silage). The cow will be looking for fibre if the grass has a naturally low level.
- Introduce rumen-protected fats into the concentrate part of the cow's diet, assuming she is getting concentrates. This will lift milk fats.
- Include yeasts (Diamond V) in supplementary diets as they support fibre digestion and acetate production.

For a local perspective, BioAg also discussed this issue with Keith Hutton PhD who for many years ran CopRice in NSW and Vic, and found that Keith's advice mirrored David's in that feed roughage will minimise the drop in milk fats.

Keith said "while the roughage needs to be good quality, it need not be *top shelf*. Wheat straw is perfectly adequate and rice straw if it is available may provide an even better result. The cows will also self-medicate".

In summary, it was found that a good understanding of rumen digestion was able to provide a simple and cost effective solution to a drop in milk fats in dairy cows, and re-enforced the benefits of a BioAg program providing better soils, better pastures and better stock.

COMPANY CHANGES



BioAg farewells Richard Chibnall, Marco Retamoza and Phil Kelly

It is with some sadness that BioAg farewells Richard Chibnall, Marco Retamoza and Phil Kelly who have all resigned from their positions in BioAg since our last newsletter.



Richard joined BioAg five years ago and represented BioAg in the Southern Victorian area as well as playing a role in the development of PoiPhos and MagPhos. Marco joined BioAg a little over 6 years ago and has been a key representative for



BioAg in the Sunraysia area. Phil Kelly joined us in November 2011 and was based west of the Blue Mountains. Apart from representing us in that area, Phil also helped manage the 2012 and 2013 cotton trials.

Richard, Marco and Phil have all made a significant impact here at BioAg, and while Richard plans to travel overseas for twelve months, there is no doubt they all will continue to enjoy success in their future careers.

We wish them all the best!



Welcome Andrew Puckeridge and Michael Douglass – Head Office, Narrandera

We would like to announce two new additions to our team at our head office in Narrandera. Andrew Puckeridge has joined us as National Sales Manager and his role is purely to support the sales team and improve the services and benefits they can provide to

you. Michael Douglass has also joined us as Administration Manager and will be helping to streamline the processes that make and deliver our products.



Welcome David Phelps – Southern slopes pasture market specialist

David will be looking after the pasture market of the Southern slopes from

Orange in NSW down to the Victorian border. Based in Wagga, he is happily married to Dianne with 2 grown boys (1 still at home) and has close to 30 years of agricultural experience, having worked in the broad-acre and cotton industries with Pursehouse Rural on the Liverpool Plains, a stint in WA with CSBP through the Esperance and Bunbury areas and over the last 9 years with PGG Wrightson Seeds as a pasture agronomist (sales and production roles). David is a keen hockey player and continues to be involved in this sport. He is looking forward to the role within BioAg and the challenges that will arise.



Welcome John Hill - Riverina cotton and broad acre markets

BioAg are pleased to welcome John Hill to the team. John will be looking after the cotton and broad acre markets of the Riverina and is based in Leeton. He and his wife Sally have a six-year-old daughter Grace who is currently in kindergarten at Leeton Public School. Sally and her business partner own and operate the Leeton Physiotherapy Centre. The pair also own a hobby farm between Leeton and Griffith and enjoy the country lifestyle. Socially John plays rugby for the Leeton Phantoms during the winter and cricket in the summer.

John has been employed in the rural sector for the past twenty-four years including in the Riverina, New South Wales for the past twelve. He has been involved in grain trading, grain and hay accumulation, and the processing and exporting of oaten hay for the Japanese dairy industry.

More recently John was with Landmark as branch manager in Griffith before becoming the regional Sales and Operations Manager for Southern NSW. His primary role during this period was to increase sales through teamwork, product knowledge and gaining

a better understanding of the sales process. John was able to develop a strong sales team and culture leading to some fantastic results. For the past 12 months John managed a property that he and Sally leased just north of Leeton.

"I have missed the team environment and I see BioAg as a fantastic opportunity and look forward to seeing the results we can achieve as a team".



Welcome Dan Hill – moving to Southern Victoria

We are also pleased to announce that Daniel Hill will take over as the BioAg Area Manager for southern Victoria. Dan is currently our Ballarat based agronomist and has significant pasture experience.

Sunraysia

We are also pleased to announce that David Morello will continue as the BioAg distributor for the Sunraysia area and that Daniel Hill, our Ballarat based horticulturist will service the area as well. Jephtha Gates, our Technical Director also provides technical support to all our team and to our customers.

Sunraysia continues to be an important area, not only as a centre of Australian food production, but for BioAg as well, and we are as determined as ever to maintain our existing relationships with you, as well as further develop what we can offer the area.

Despite the loss of Marco in this area, we are totally committed to supporting our customers and we will continue to value your loyalty in the Sunraysia area with optimum advice and timely product supply. With the BioAg team and David Morello as distributor, you can go forward with confidence that you can rely on BioAg!

Our website can connect you to your nearest agronomist!



Better soils. Better crops. Better stock.™

For more information,
phone 02 6958 9911 or visit www.bioag.com.au