

Winter 2013

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BioAg COUNTRY

Foliar Treatments Boost YIELDS and QUALITY in the Riverina

*The experiences of a BioAg cropping customer in the Riverina show that our liquid products **Soil & Seed**, **Balance & Grow** and **Fruit & Balance** offer significant improvements in yield and grain quality.*



Andrew and Sally Dalglish and family on their melon farm at Katherine NT.

Andrew Dalglish and his father Charlie have been BioAg customers for around 10 years at their Eurongilly (NSW) farm *Bradford Park*, which they sold at the end of 2011. During this time Andrew also ran a mango harvesting business across both the Northern Territory and North Queensland (and still does).

To keep himself even busier, Andrew bought a 3,000 acre property *Panama*, between West Wyalong (NSW) and Ungarie, in 2007. When he bought *Panama* it was a run down grazing property with poor fencing and a history of inadequate fertilisation. Andrew got busy, removed the fences, filled in the melon holes, and started continuous cropping under soil and plant nutrition guidance from BioAg's MD, Anton Barton. A couple of applications, several years apart, of poultry manure mixed with BioAgPhos and gypsum, raised the underlying soil fertility and provided a nutritional platform from which the 2012 harvest yield results were achieved.

In 2011 Andrew spread the blend of poultry manure, BioAgPhos and gypsum across much of the property, and used *Soil & Seed* with MAP as a starter fertiliser. The crop yields were high, and most of the soil nitrogen was used up growing this second consecutive big crop.

For the 2012 season Andrew decided to sow with 50 kg/ha MAP and 4kg/ha zinc sulphate. Sulphate of Ammonia was spread after sowing (because of the availability of the spreading contractor) at rates of 80 kg/ha for barley, 150 kg/ha for canola and

120 kg/ha for wheat. Andrew was keen to do everything possible to maximise yield and quality in 2012, as the planting profile was full and, during the winter, grain prices were rising due to the worsening US drought. The crops included 210 ha Garnet canola, 120 ha Eaglehawk wheat, 210 ha of Janz Clearfield wheat, 245 ha Hindmarsh barley, and 95 ha Albus Lupins.

In late July, when the cereals were at the late tillering stage, and prior to the commencement of canola flowering, the vegetative foliar fertiliser treatments were applied as shown below.

	Balance & Grow l/ha	Calcium Nitrate kg/ha	UAN l/ha
Canola	1.6	6.5	18
Wheat	1.6	7.0	14
Barley	1.2	4.5	12

From mid August to early September, the following fruiting foliar treatments were applied to the canola at the early flowering stage and to the cereal crops from 2nd node to pre-head emergence.

	Fruit & Balance l/ha	Copper Sulphate g/ha	Zinc Sulphate g/ha	UAN l/ha
Canola	1.6	150		14
Wheat	1.6	150	200	15
Barley	1.7	150		12
Lupins	2		150	

Having given the crops every chance to maximise yield and quality by rigorously

following the prescribed program, Andrew was a little disappointed that the spring failed, and his yield potential was compromised to some extent. He was, however, delighted with the yields and grades of grain that he produced.

All of the wheat was graded APW with a value of \$265 per tonne. The canola produced 43 to 45% oil with a value of \$515 per tonne, and all of the barley was graded F1 and sold for \$215 per tonne. All of the prices were achieved on a delivered West Wyalong basis.

Once Andrew's crops were harvested and sold, his greatest excitement came from the analysis of his potential yield and water use efficiency.

	Yield t/ha	Potential Yield %	Water Use Efficiency kg/ha/mm
Canola	1.86	174	13.92
Wheat	2.52	118	18.87
Barley	2.56	120	19.18

So, realising that despite owning and operating *Panama* in the Riverina along with his mango contracting businesses up north, that he still had capacity to spare, last year Andrew bought a mango and horticulture farm at Katherine (NT) where he is now growing rock melons in addition to managing his mango trees.

In Andrew Dalglish the old adage certainly applies – "if you want something done well, give the job to a busy person."

BioAg **PASSES TEST**

Mundoora farmer Craig Stringer reports increased yields in a trial barley crop by adding **BioAg's Soil & Seed** and **Balance & Grow** to his normal fertilisation program. Journalist Miranda Kenny, *Stock Journal* (SA), 30th April 2013.

UNDERTAKING trials of new products and seed varieties are two ways in which Craig consistently improves yields on his 1214-hectare mixed farm at Mundoora, in the State's Mid North.

Craig, who farms the property with his wife Jacinta, son Nicholas, and father Lex, said BioAg products were the most recent he had trialled on-farm.

"Our agronomist, Mid North Ag Services' Ben Hook, suggested we use it last year," he said.

"We'd also had a bit of literature about it come through in the post with a bit of a spiel on it, so we decided to have a look at it.

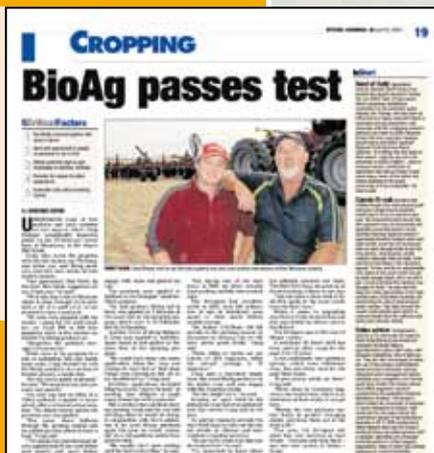
"We were very pleased with the results – going by the yield monitor, we reaped 400 to 450 kilograms/ha more in the section we trialled the BioAg products on.

"Altogether, the paddock averaged 2.6 tonnes/ha."

While most of the property is a mix of undulating hills and sandy loam soils, Craig decided to trial the BioAg products on a section of heavier ground, a sandy clay.

"It's our worst patch of ground," he said. "We wanted to try and promote root growth."

The trial was run on 60ha of a 120ha paddock, cropped to scout wheat, after a wheat-on-wheat rotation. The wheat variety grown the previous year was gladius.



FAMILY FARM: Craig Stringer and his son Nicholas regularly trial new crop varieties and products at their Mundoora property.

"Ben came down halfway through the growing season and we pulled up a few plants to have a look," Craig said.

"The plants that had BioAg products applied had 20 per cent better root growth and much better vigour, with more leaf growth up top."

The products were applied in addition to the Stringers' usual fertiliser program.

The first product, BioAg Soil & Seed, was applied at 2 litres/ha at the same time as the spraying program, which used 1L of Trifluralin and 1L of Roundup.

Another 2l/ha of BioAg Balance & Grow was applied at mid-tiller, again mixed in and applied at the same time as the spraying program.

"We could have done one more application when the crop was coming to head but at that stage things were starting to dry off so we decided not to," Craig said.

Fertiliser applications included 50kg/ha of urea "down the tube" at seeding, then 100kg/ha of single super broadcast with a spreader.

Still a week or two out from starting seeding, Craig said he was still deciding what he would be doing, in conjunction with Ben's

advice, but if he used BioAg products again this year, he would "probably" do a full paddock, rather than another trial.

"We usually don't start seeding until the first week of May," he said.

"But during one of our best years, in 2001, we didn't actually start seeding until the first week of June."

The Stringers had excellent yields in 2012, with 368 millimetres of rain at Mundoora compared to their usual 342mm rainfall average.

"Six inches (152.4mm) did fall outside of the growing season, in December to January, but we did have pretty good yields," Craig said.

"From 161ha of barley we got 3.4t/ha or 20.5 bags/acre, when the normal average is 15 bags/acre."

Craig said a next-door neighbour also used BioAg products on his barley crop and was happy with the resulting yields.

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For further information, contact BioAg's SA agronomist Phil Toy on 0458 440 225

PotPhos - The Answer to Potassium and Sulphur Deficiencies in Pasture, Crops and Fodder Production

If you need to lift potassium and sulphur in your soils, try **PotPhos**. It combines the benefits of **BioAgPhos**, a highly reactive phosphate source, and potassium sulphate, a biologically friendly potassium source. It was formulated for the high rainfall zones in Victoria, Tasmania and New South Wales, where potassium deficiencies are common and reduce pasture, crop and fodder production. It is a well balanced fertiliser for both autumn and spring application in high rainfall environments, but it is also well suited to irrigated fodder production in the warmer climates.

PotPhos, a blend of 75% BioAgPhos and 25% sulphate of potash, has a composition ratio of 0:9:10:5 N:P:K:S & 26% Ca.

Potassium (K) is an essential nutrient for plant growth and development. Because large amounts are absorbed from the root zone in the production of most crops and pastures, it is classified as a macronutrient. Potassium has many functions within the plant including photosynthesis, protein synthesis, water translocation, carbohydrate metabolism for energy production, stomata control, pest and disease resistance and improving the cold tolerance of plant tissue.

For more on this topic, go to bioag.com.au and look for the downloadable fact sheet, or call agronomist Daniel Hill on 0448 453 412.

BioAg Increases Yields and Quality of Potatoes in Indian Saline Soils

BioAg's research partner in India, the Centre for Strategic Studies (CSS) in Kolkata cooperated with the International Potato Center in a recent trial (November 2012 - March 2013) in the Sundarban District of West Bengal to determine a suitable fertiliser application regime for saline soils, and to test various potato varieties to determine which offered higher yields. West Bengal is the third largest potato growing state in India after Uttar Pradesh and Punjab, but the productivity is relatively low as flooding is frequent and, as a consequence, the soils are saline.

A high-yielding, evenly sized, BioAg treated potato crop in West Bengal.



The International Potato Center (known by its Spanish acronym CIP) is a research-for-development organization with a focus on potato, sweet potato, and Andean roots and tubers. CIP, which is based in Lima, Peru, is dedicated to delivering sustainable science-based solutions to the pressing world issues of hunger, poverty, gender equity, climate change and the preservation of our Earth's fragile biodiversity and natural resources.

BioAg's contribution to this trial was in the soil nutrition component, and our recommendations were based on trials done by the CSS on our behalf in 2011/12.

The fertiliser treatments are shown in table 1.

In the BioAg treatment, the principal difference was to substitute part of the DAP with BioAgPhos, so that BioAgPhos contributed 75% of the phosphorus applied,

and to add 10 l/ha of Soil & Seed, BioAg's liquid microbial nutrient designed to stimulate rapid germination and early root development. The N, P and K levels remained the same in each treatment.

The yields in tonne/ha for each of seven varieties of potatoes and for each of the two fertiliser treatments are shown in table 2. The variety Kufri Jyoti is one of the most popular varieties of potato grown in India, followed by Kufri Pukraj. The other five varieties, with the CIP designations, were trial varieties developed and supplied by CIP.

All of the varieties (the popular Indian varieties and the CIP varieties) produced higher yields under the BioAg treatment. The Kufri Pukraj plot produced a 94% increase and CIP 4197 a 56% better yield. The mean increase in yield for all varieties was 37% in favour of the BioAg plots.

The research team remarked that generally the quality of the BioAg fertilised tubers was better than that of the standard treatment. The tubers were more uniform, a greater percentage were of marketable size (hence the higher yields), and the skins were better formed.

The gross and net revenues per ha achieved on the basis of the average 37% increase in yield are shown in table 3.

Thus, for an increase in fertiliser cost of approximately \$175 per ha, the net increase in return achieved was approximately \$695. This translates to a four-fold return on investment in the additional nutrients.

The CIP research team was encouraged by the results, and plan to carry out a further series of similar trials in the different potato growing regions throughout India.

Table 1

	Urea kg/ha	DAP kg/ha	MOP kg/ha	Soil & Seed l/ha	BioAgPhos kg/ha	Fertiliser Cost	
Standard Treatment	434	680	250	0	0	INR 18,660	AUD 335
BioAg Treatment	632	170	250	10	865	INR 28,394	AUD 510

Table 3

	Standard Treatment		BioAg Treatment		Increase	
	INR	AUD	INR	AUD	INR	AUD
Gross Revenue per ha	129,703	2,329	178,157	3,199	48,454	870
Net Revenue per ha	111,043	1,994	149,764	2,689	38,721	695

Farm gate price for potatoes per tonne: INR 6,000 (AUD 107.7)

Table 2

Variety	Standard Treatment (t/ha)	BioAg Treatment (t/ha)
CIP 4148 (V1)	23.29	27.36
K. Jyoti (V2)	16.67	27.20
K. Pukraj (V3)	15.34	29.95
CIP 4175 (V4)	27.97	30.23
CIP 4181 (V5)	21.20	29.53
CIP 4197 (V6)	20.17	31.41
CIP 4206 (V7)	26.05	32.38
Mean	21.62	29.69

BioAgPhos Brings Out the Best in Pasture Improvement



"The initial BioAgPhos application produced a significant improvement in clover growth in the first year after application, considering that no clover had been sown at the time". BioAg's Arron O'Connell (L) and Matthew Higgins of Gloucester Rural Supplies (centre) and farmer Graham Forbes (R).

Gloucester (NSW) farmer Graham Forbes milks 600 Frisian cows on his property *Grandview*, and has been pleased with the improvement of his pasture which he attributes to the application of BioAgPhos.

He bought a new farm with no fertiliser history three years ago, which was growing mostly unimproved and unproductive grasses. He applied 400kg/ha BioAgPhos in 2010 and 400kg/ha BioAgPhos S10 in 2011. He topped up with a phosphate fertiliser which was offered as a special at 350 kg/ha in 2012.

He sowed the new block with cocksfoot, red clover and chicory in May 2012, and is now running heifers on it. "The initial BioAgPhos application produced a significant improvement in clover growth in the first year after application, considering that no clover had been sown at the time." said Graham. "As the block had no previous fertiliser history, it is clear that the product has

helped to build phosphate levels in the soil to where it now supports a very productive pasture".

BioAg's regional agronomist, Arron O'Connell comments that "BioAgPhos is ideal for establishing and topdressing pastures, It contains 12% P: 35% Ca: 1% S, and provides a high analysis, environmentally friendly and cost effective alternative to conventional phosphate fertilisers. It does not contain any water-soluble phosphate and thus it won't leach or 'lock-up', and will keep releasing for much longer than conventional fertilisers. As a result, BioAgPhos is perfectly suited to the high rainfall, acidic soils found in the coastal areas of Northern NSW".

"I am pleased, but not surprised by the results achieved by Graham on his improved pasture", he said. For further information contact Arron on 0429 820 360 or Gloucester Rural Supplies' assistant manager Mathew Higgins on 0409 916 143.

Appointments and Departures



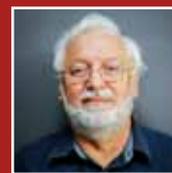
BioAg has recently appointed **Andrew Puckeridge** to manage our ever expanding sales team. Andrew's background is in the domestic and

international trading, hedging and marketing of agricultural commodities and inputs. Prior to joining BioAg, Andrew managed an interest rate and commodity protection sales team for a major Australian bank in regional Victoria and Tasmania. He has strong practical experience in agricultural production through the management of his own property in the Riverina (NSW).



Even more recently, **Michael Douglass** has been appointed to the position of Administration Manager, taking over part of the role held by our retiring General Manager, Geoff Clarke.

Having grown up in Wagga Wagga, Michael spent 12 years in Sydney in banking, health and the arts. He has a strong interest in writing having been a website content provider, editor and technical writer. Michael has published numerous works and recently appeared in the University of Technology, Sydney (UTS) Writers Anthology 2013.



We farewell **Geoff Clarke**, who has been our General Manager for a little over five years, as he heads off into retirement. Geoff's interests in the company

have been in supporting the directors in strengthening the company's corporate systems to meet its growth plans, and the development of its export markets. He has also been the editor of *BioAg Country* since he joined us. We wish him well as he pursues his interests in travel and, of course, sailing.

Distributor Profile - Whites Fertiliser Service

BioAg is pleased to announce the appointment of Whites Fertiliser Service as distributor for BioAg's soil and plant nutrition products in East Gippsland (Vic.).

Whites Fertiliser Service, a family business based in Bairnsdale, has been in the fertiliser industry for over 40 years, servicing East Gippsland farmers since 1973. It is a licensed Fertcare® Organisation and its trucks, equipped with GPS navigation for accurate spreading, are Accu Spread® accredited.

Call proprietor Doug White at Whites Fertiliser Service, on 51 523 166, to discuss your on-farm needs.



The Whites Fertiliser Service team with proprietor Doug White in the centre of the back row.



Better soils. Better crops. Better stock.™

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