

## Summer 2015

### In this edition

- Ship Ahoy
- Three from three
- Introducing our 2016 Early-Bird deal
- The time is right
- A BioAg Digest-it story in pictures
- The Phosphate market
- The Pasture Ecosystem

# BioAg COUNTRY



Ship containing one of BioAg's previous RPR imports arrives at port.

BioAg can confirm a new shipload of highly reactive Algerian RPR (13% phosphorus) has been secured and is on the way.

Since our last shipment of Algerian rock, the price of phosphate rocks has increased while sea freight costs have decreased. The result is that we have a similar delivered USD cost to Geelong. The big difference is in the currency, having moved from 0.89 to 0.71 AUD/USD, which is a 25% cost increase in Australian dollar terms.

Therefore, all fertiliser prices are rising in AUD terms, and BioAgPhos is not exempt from the consequence of the falling Aussie dollar.

The important thing for farmers to understand is that the world values the primary and secondary protein commodities that Australian agriculture generates so

the challenge for individual farmers is to maximise the conversion of moisture into agri-produce.

Maximising production requires the application of the four R's. The right amount of the right product in the right place at the right time. To help facilitate the 4 R's, BioAg has a team of qualified and experienced Fertcare accredited agronomists who are available to assist our clients achieve their production goals whilst enhancing soil health and fertility.

### Questions producers should be asking themselves are:

Do I need slow-release or capital phosphorus?

Does my fertiliser need a quick or slow sulphur source mixed with it?

Is aglime (calcium) an important nutrient that needs to be in my soil nutrient mix?

How much of each nutrient should be applied for maximum return on dollars invested in fertiliser?

If you are not able to confidently and correctly answer all of these questions yourself, involving your BioAg agronomist will get you the optimum outcome.

Still got doubts – go to the BioAg website, have a look at the accumulated science, then visit the contacts page and call your agronomist!

# Three from three

2015 marked the third year of what has been a very successful series of corn trials using BioAg programs and conducted by AgriCenter International.

- Yield increase above standard practice 26%
- After reducing nitrogen inputs by 15% from the standard practice, yield result achieved by the BioAg program was 15.6%
- Average yield increases over three years of corn trials were 25% (above standard practice), and 16.8% (using 15% less nitrogen)

In successive years since 2013, BioAg programs have been put to the test by AgriCenter International in independent, replicated field trials in corn.

The trial aims were to see what affect a BioAg program had on:

1. The standard district practice, and
2. The standard practice with 15% of its nitrogen input removed.

Both 2013 and 2014 trials resulted in very strong results in both of these categories.

## In late October 2015, BioAg received the 2015 results

Standard District Practice + BioAg program  
26% yield increase

Standard District Practice (less 15% nitrogen) + BioAg program 15.6% yield increase

These results are important for a variety of reasons:

### Impressive yield results

AgriCentre International trials are conducted in the heart of one of the world's major food production belts. The fertiliser regimes they use are a reflection of the importance that area is to the US economy, basically as good as they can be.

For BioAg to achieve a 26% yield increase above their own practices is something we are quite proud of.

### Deliver production efficiencies

BioAg programs are designed to do two things, deliver yield increases, and deliver them with increased efficiencies (what's the point of improving the health of soils if it doesn't provide additional benefits).

In this category, we delivered a 15.6% yield increase while using 15% less nitrogen.

### Consistent and strong results

Over the three years of the trials, BioAg programs delivered consistently strong results. This is despite varying climatic conditions over that time, and different trial plots with varied plot histories.

For replications that used a straight BioAg program over the standard district practice, the three years of results varied not much

(between 22.1-25%), while the replications using 15% less nitrogen showed similar consistent results (15.1-19.7%).

### Return on Investment

All of these results deliver a return on investment that is greater than the cost of using the BioAg program.

## Three-year summary

A summary of the three years of independent, replicated corn trial results follow.

Year	Yield increase (%)	Yield increase less 15%N (%)
1	26.92	15.1
2	22.1	19.7
3	26	15.6
Three year average	25	16.8

## Further trial results

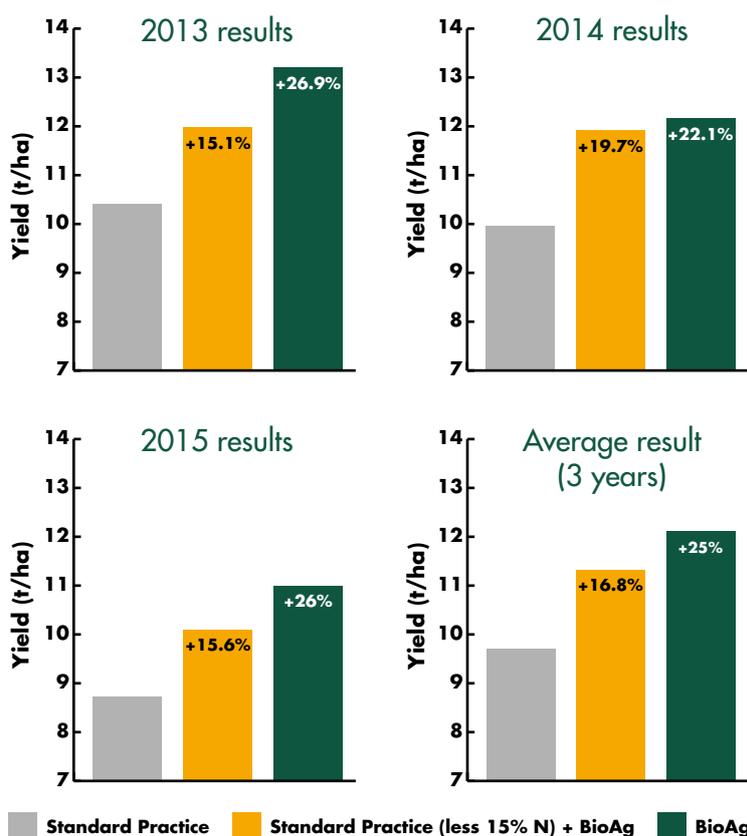
Along with the corn trials, AgriCenter International also trialed BioAg programs on cotton and soybean.

Results from these trials should be received by December 2015 and we will update you at that time.

All BioAg trial reports and results can be found on the BioAg website [www.bioag.com.au](http://www.bioag.com.au).



Anton Barton inspects BioAg's 2015 corn trial with trial manager Dr Clive Kirkby.



# Introducing our **2016 Early-Bird** deal

In the lead up to Christmas each year, BioAg traditionally offer a deal to its customers.

This year, our Early-Bird deal commences on 1 December and offers discounted pricing on our popular BioAgPhos, BioAg Superb, and BioAgPhos S10.

As we discussed in our cover story, the falling Aussie dollar is putting upward pressure on the Australian fertiliser supply chain.

Our Early-Bird deal is aimed at providing some insulation for the farmer from the looming fertiliser price increases.

## Early-Bird pricing

**BioAgPhos** \$390 /t

**BioAg Superb** \$292 /t

**BioAgPhos S10** \$440 /t

Payment for these prices is due by the end of December 2015.

## Learn more

Our qualified and experienced team of Fertcare accredited Area Managers are more than happy to assist you.

Permanent pasture treated with untreated pig slurry (8 days after spreading)



## A BioAg Digest-it story in pictures

See our Trials section of [www.bioag.com.au](http://www.bioag.com.au) for the full story



Permanent pasture treated with BioAg Digest-it treated pig slurry (8 days after spreading)



Ross Hamilton and Charlotte Morley of Parawa SA (As they appeared in the Stock Journal in October 2015) in their clover pasture grown using a BioAg program.

# The **TIME** is **RIGHT**

Take advantage of cheaper and plentiful freight and spreading contractors by applying BioAg fertilisers at a time of the year when it actually suits you.

## Why can BioAg natural fertilisers be spread well in advance when other forms of fertiliser can't?

One of the benefits of BioAg natural fertilisers is the ability to spread at any time, safe in the knowledge that the products efficacy won't be compromised while waiting for crop production to start.

This is due to our fertilisers not being subject to issues common to areas within Australia, such as leaching down past the root zone or locking up with some of the most common elements in Australian soils, iron and aluminium. You won't lose our fertiliser to these issues no matter how early you apply them.

## So what does happen between BioAg fertiliser application and the onset of rain?

BioAg natural fertilisers are a high-grade and highly reactive RPR combined with BioAg's proprietary liquid microbial fermented culture.

The fermented cultures contain (amongst other ingredients) P-solubilising microorganisms that are naturally occurring in soils.

In effect, your soil's health will increase after applying our fertilisers, and our 100% bio-available form of phosphorus is ready to produce when the rain comes.

## THE **PHOSPHATE** MARKET

Australia consumes just over 1% of global phosphate production. Traditional suppliers to the Australian market are the USA, Mexico and China. Saudi Arabia as a recent entrant to the market is now starting to supply the Australian market.

The global benchmark price for phosphate fertilisers remains the Tampa Florida USA export price for DAP in USD per tonne FOB. Prices from other major exporting regions, like China, Saudi Arabia, Morocco and Russia, tend to move in line with movements in the Tampa price. With the actual price in other regions reflecting differences in local markets, product and freight costs to importing markets.

The Australian price for phosphate fertilisers ex-port store is a function of the USD FOB price at the port where the product is supplied, the USD sea-freight cost, the exchange rate, the discharge and storage costs in AUD plus supply chain margins.

The price of Single Superphosphate trends closely to the price of ammonium phosphates on a cost per kgP basis, with allowances for sulphur in SSP and Nitrogen in MAP & DAP.

Over the last year, we have seen the Tampa DAP benchmark soften from around USD470 to around USD430 FOB Tampa while our currency has moved from around 0.90 AUD/USD to around 0.71 AUD/USD. This means FOB down 10% and currency down 25% amounts to domestic fertiliser prices up 15%.

# The Pasture ECOSYSTEM



Part 2 (Part 1 appeared in BioAg Country Spring 2015).

Compiled by David Phelps  
Area Manager, Southern NSW



As pasture-based livestock producers, we are in the business of harvesting solar energy and converting it to food & fiber. We attempt to manage plants to optimise this harvesting of solar energy via the management of the above ground portion of the pasture. However, there is more biomass & biological activity occurring beneath us than we realise.

## Niches and micro-environments

As we walk across pasture we notice that different grasses, forbs, and legumes grow best in different parts of the landscape. These different sites present different soil environments. The plants that do well on a part of the pasture are those adapted to the soil chemical and physical environment in that area. They are also tolerant of the timing and intensity of grazing placed on them by the animals as controlled by the farmer. These plants have found their niche or place in the pasture community.

The same principles apply below ground. There are many species of bacteria, protozoa and other microorganisms that have the same ecological function in the soil. Some do better where the soil has a high pH, others do better where the soil is lower in pH. Some do best when the soil is cool, others do best when the soil is warm. Having high species diversity is good since it ensures good microbiological activity across a range of environmental conditions.

Stock also drop dung and urine back on the soil surface. Dung is the residue of the forage that the rumen bacteria and protozoa, and stomach acid did not digest. Urine contains the nitrogen that was in excess of the livestock's ability to convert rumen nitrogen to bacterial protein and protein that was excess to the stock's need for growth and/or milk production.

Dung is quickly inhabited by dung beetles, fly larva, beetles that eat fly larva, earthworms, and bacteria. One group of dung beetles lays its eggs in the cow pie while another takes the dung and moves it into burrows in the soil under the cow pie to lay eggs. A third group of dung beetles take small balls of dung and rolls them away for burial in the soil as food for their larva. These dung beetles are demonstrating different physical niches or niches separated in space. Different species of dung beetles within these groups use the dung at different times of the year demonstrating different temporal niches. After a while fungus and actinomycetes invade the cow pie and help decompose the more resistant forms of carbon.

NSW DPI Fertiliser Trial image showing a BioAg blend plot on the left (300kg/ha biannually) and a Single Superphosphate plot on the right (125kg/ha annually). 2014.



## Soil Moisture a controlling factor

All of this biological activity affects plant productivity by cycling nutrients. It also has major effects on the soil portion of the water cycle. Earthworms and dung beetles assist water infiltration by making passageways from the surface into the lower soil. Earthworms, bacteria, and fungus assist by making glues that hold soil particles together, making them stable when wet so that the soil has more, small, stable passages for water infiltration. All of this improves water infiltration during rainstorms resulting in more water going into the soil and

less running off the surface. The organic matter and soil microspores increase the amount of plant-available water the soil can hold after a rainfall event. This allows plants to grow well and longer between rains.

Part 3 of this article will appear in BioAg Country, Autumn 2016 edition.

### References:

E.B Rayburn - Pasture Ecology:  
Managing Things That We Cannot See: 2009  
USDA/NRCS. Soil Biology Web Site. [http://soils.usda.gov/sqi/concepts/soil\\_biology/biology.html](http://soils.usda.gov/sqi/concepts/soil_biology/biology.html)

## Christmas Closedown

BioAg will be taking a break over the Christmas/New Year period.

**Closing:** midday Thursday  
24th Dec 2015

**Re-opening:** 8.30am Monday  
4th Jan 2016

However you will still be able to contact us for orders and enquiries:

### For orders call:

Anton Barton 0418 367 326,  
or John Hill 0427 247 844

**For product pick-up from our Geelong quarry call:** Anton Barton 0418 367 326,  
or John Hill 0427 247 844

**For product pick-up at our Narrandera plant:** Barry Knight 0407 593 888

**We hope you have an enjoyable break during this time.**



Better soils. Better crops. Better stock.™

**For more information,  
phone 02 6958 9911 or visit [www.bioag.com.au](http://www.bioag.com.au)**