



## Chair Update - Harley Bligh



Once again it is my pleasure to present the 2015-16 Maize Association Chair's report. Last year, our AGM at Ingredion in Sydney saw the election of two new committee members; one industry representative, David Coddington from HSR Seeds, ensured all the major seed companies are represented on the MAA committee, and a grower representative in Gino de Stefani from Nippon Foods. Gino manages the Whyalla feedlot at Texas in Queensland, an operation which grows and buys significant quantities of corn, most of which is high moisture; in fact the total quantity is around 60,000 tonnes and represents approximately 10% of the Australian corn crop. So we were very pleased to welcome the two new members to the committee which, I believe, is thoroughly representative of the Australian maize industry.

### Australian Summer Grains Conference (ASGC)

As reported in the last COB magazine the ASGC was undoubtedly the event the MAA was involved in this year. Once again I thank Steve Wilson and Rob Johnston for their sterling efforts in the lead-up to, and the execution of, the conference as it was an outstanding success resulting in a higher number of delegates attending than the previous conference. It was particularly satisfying to see the Ian Hamperson award for service to the maize industry awarded to Steve Wilson who has put literally a lifetime of effort and diligence into our industry, and who always takes a holistic view of the industry when we are discussing the issues that come before us. In fact he is one of the founding members of the MAA and we wish to thank him for his continued service. The ASGC is extremely important to the MAA as it is one of our main sources of income, being derived from the profit of the conference divided up amongst the different grains involved; sorghum, maize, soyabean, mungbean and sunflower. Without this income our association would struggle to survive.

### Veski

In March 2015, Veski launched a new program of Sustainable Agricultural Fellowships. The new agricultural fellowship aimed to bring world leading specialists in their field to Australia to work in collaboration with farmers, industry and government. Our Executive Officer Liz Mann to her great credit applied for and secured a grant of \$35,000 for a project.

Title of the project: Achieving World Record Maize Grain Yields in Northern Victoria

Project plan: Currently maize is grown throughout Northern Victoria for grain using sub-surface drip irrigation and centre pivots or lateral move irrigators. These types of irrigation systems enable growers to efficiently apply water and fertiliser, matching crop demand throughout the growing season. The current Australian highest maize grain yield sits at 20.5 tonnes per hectare at 12 per cent moisture, obtained by a grower in Northern Victoria in 2004. A number of growers in the region also achieve yields in the range of 18-19 t/ha annually.

By running a series of grower meetings across Northern Victoria with the current World Record holder speaking, and then working with a team of local growers and agronomists to design a number of on-farm trials, it was envisaged that over the term of the project a grower in Northern Victoria would be well placed to achieve a World Record yield (28 t/ha).

Most disappointingly, after successfully obtaining the grant the MAA contacted the current world record holder in the USA who, due to the long time between the application being submitted and being announced, was then unable to meet the commitment to travel. Another previous record holder was then contacted, but unfortunately his request for remuneration was larger than the grant could accommodate. When we kept searching for acceptable people through the seed companies and other contacts, we met dead ends only to be frustrated in every avenue. We attempted to attract a suitable person for the Veski criteria, but unfortunately the project could not proceed.

### Crop Competition

The committee is discussing the practicalities of running a national crop competition with the view to elevating corn production in Australia by disseminating the information gathered from these award-winning high-yielding crops. The full history of the agronomic husbandry of the crop including fertiliser, variety, water, planting date and previous cropping history etc will be collated in the process to then also assist other growers to evaluate and improve their own farming system to hopefully produce better yields, and thus better returns from their maize enterprises. With the continued expansion of cotton into the southern irrigation valleys, maize will have to compete for acreage as farmers pursue increased dollar returns per ML of water. One thing in favour of maize is that it's an agronomically good rotational crop with cotton, and the IT varieties will also help with Roundup-resistant grasses that are proliferating under Roundup-ready cotton.

## Asian Exports

As I stated in the last COB I believe all the ground work has been done; we have established a market presence and they like our GMO-free product. We have FTA's with Japan and Korea; protocols are in place but obviously we need the AUD to be favourable. At the same time we must have a sufficient critical mass of grain to expand this market. Hopefully my farming business has uncommitted grit tonnage. As a result we are hoping our grain merchants will secure a home in Northern Asia for this grain, at favourable prices. Surely this a call to arms for our marketers.

## R & D

The MAA does get approached by agricultural consultants and agronomists on a regular basis and they have raised concerns on several issues. These issues have been forwarded onto the GRDC and we have requested them to initiate research in these areas. More specifically:

- 1) Development of new thresholds and the registration of new insecticides to control the increasing high incidences of heliothis burrowing into cobs. This in turn allows easier entry of pathogens such as aflatoxin and boil smut in to the grain. The pests are not new but yield and process quality demands are increasing.
- 2) Are there newer and more effective fungicides that could be registered to control the influx of common rust, including Northern Leaf Blight? In the past two seasons some late-planted maize has shown quite high levels of rust with significant yield impacts.

## In this issue

New biosecurity app to help growers	2
National Maize Yield Competition	3
Scenic Rim dairy farmers stay afloat with smart investments	5
Beauresort dairy enlists new corn in weed battle	6
Corn silage providing valuable feedlot options at Daringa	7
Maize silage hits new yield heights on Moxey Farms	8
Encouraging outlook for double cropping	8
Smarting-up agronomy: Matching genetics and management to paddock and prevailing conditions	9
Independent Replicated Trial - Maize Grain Yields from Microbial Enhancement of Soil Health	10
"HSR BRUTUS" new maize for Australia in 2016	11
Robots and 'imi' corn the future for Beauresort dairy	12

Maize Association of Australia Incorporated  
ABN 16 507 902 551

[www.maizeaustralia.com.au](http://www.maizeaustralia.com.au)

Circulation approx. 3400

Published Spring and Autumn

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## Deadlines

The copy deadline for the Autumn issue is:

Mar 1, 2017.

Contributions welcome. Manuscripts and photographs are handled with care; return of unsolicited material is not guaranteed. Copy preferred by email or on disc in text-only format.

## Disclaimer

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- 3) With zero till, the impact of scarab beetles damaging the roots of maize crops seems to be increasing. Currently very little is known about the pest and how to successfully control it.
- 4) Lack of registered herbicides for use in maize and some herbicides, if registered, may only be registered for use in specific states. Some weeds that growers have issues with are not even listed on labels.

The MAA has requested further research on these issues.

## Conclusion

In concluding, I see the MAA in a sound financial position with a strong and representative committee to oversee the issues of our industry

and promote the production of Maize in Australia. I particularly want to pass on my thanks and appreciation to Liz Mann, our EO, who keeps the association functioning so well; especially gathering articles for and compiling the COB magazine. Also thanks to my fellow committee members who all give their time voluntarily to the MAA; for the advancement of Maize in Australia. Lastly I pass on our thanks and appreciation for the hospitality of Advanta Pacific seeds and thank Rob Johnston for organising the venue for this year's AGM.

## New biosecurity app to help growers



A new app called FarmBiosecurity, from Plant Health Australia, brings biosecurity into the smartphone age. The new app enables farmers of both crops and livestock to create their own personalized biosecurity plan that meets their farm's needs. Plant Health Australia's national horticulture manager, Alison Saunders, said the app is framed around the six biosecurity essentials which should make it easy to follow by anyone who is already familiar with them.

"If you are wondering how to implement biosecurity measures on-farm, the six essentials are a good place to start," Ms Saunders said.

When setting up their custom biosecurity profile, users select actions which apply to their farm. Once this is done the sections selected become

a to-do list that can be shared, saved or printed out for easy distribution to others working on the property.

"The app is easy to use and allows producers to take their biosecurity plan with them wherever they go, even if there is no internet access," Animal Health Australia's executive manager biosecurity and product integrity services, Duncan Rowland said.

Many costly infections can be prevented using the six biosecurity essentials. By providing farmers with easy access to them, it could mean better biosecurity practices for farms, which means healthy animals and crops. If interested, the app is now available for free on your Android and Apple devices. source: [farmbiosecurity.com.au](http://farmbiosecurity.com.au)



The Maize Association of Australia will be undertaking a number of activities in Northern Victoria and Southern NSW over the coming season. These will include:

### • Field days

All members of the MAA will be invited to participate in the field days. If you would like to receive the field days notices and details of the on-farm research please forward your email address to Liz Mann ([lizmann.ag@gmail.com](mailto:lizmann.ag@gmail.com)) or phone 0427 857 578

MAA Membership renewals will be sent out to existing members in the coming month. If you are not currently a member, but would like to join, the cost of membership (inc. GST) is:

Corporate member	\$1,500/year
Merchant company member	\$750/year
Research corporation member	\$220/year
Individual producer member	\$125/year

Please contact Liz Mann for additional information.

## National Maize Yield Competition

The Maize Association of Australia is launching the “National Maize Yield Competition”.

The MAA chair Harley Bligh wants to encourage Australian Maize growers to push their yield goals and outcomes higher.

The current Australian record maize yield was recorded during the 2004/5 season at Boort in northern Victoria, with the hybrid, Pioneer 3335, officially yield tested at 21 tonnes per hectare at 14% moisture. This was an irrigated crop, grown using sub-surface drip irrigation.

The association firmly believes that the genetic yield potential of Australian maize Hybrids has not yet been reached. The idea behind our yield competition is to reward the farmers that produces the highest irrigated yield and Dryland yield in Australia.

The USA run a very prestigious yield competition that has seen an increase in record yields for many decades. As a consequence, the winners have set new yield goals for many growers to aspire to and achieve.

Harley Bligh has said “As the success of our competition grows, we may expand the competition into several categories as the USA has done, but for now we want to keep things simple for the first year. This will be a truly national competition unlike any previous maize competitions.”

In conjunction with independent volunteer scrutineers, Pioneer seed, Pacific seeds and HSR have kindly agreed to help facilitate the weigh binning of the best entrants. The MAA has produced a strict set of criteria that must be adhered to when entering the competition. The criteria will be freely available on our web site <http://www.maizeaustralia.com.au/> or through one of the afore mentioned commercial Maize seed companies

This will be an exciting event for growers over the coming season, with both dryland and irrigated maize growers encouraged to enter their best performing crop.

**JUDGING:** Judging is on YIELD ONLY, Corrected for moisture content as percentage

**Categories:**

1. Irrigated

### IRRIGATED COMPETITION STANDARDS

CROPS	YIELD KILOGRAMS PER HECTARE		% MOISTURE CONTENT
	Standard	Existing Record	
Maize	15000	21000	14.0%

NB. Existing Record is the current highest yield, each year has different conditions, hence you may not need to achieve this yield to win in any given year. The standard yield is the minimum yield estimate required to enter the competition.

2. Dryland

### DRYLAND COMPETITION STANDARDS

CROPS	YIELD KILOGRAMS PER HECTARE		% MOISTURE CONTENT
	Standard	Existing Record	
Maize	6285	TBC	14.0%

Entry fee – One entry is free if a current MAA member, non-members \$125 (includes MAA membership) Entry Forms can be obtained from: <http://www.maizeaustralia.com.au/downloads/Aust%20Maize%20crop%20competition.pdf>

A Perpetual Shield will be presented to the winner in each category at an award dinner to align with MAA AGM.

## COMPETITION CONDITIONS

**Existing Record Yield** is the maximum yield achieved to date in Australia.

**Standard Yield** is the minimum yield required for a crop to qualify for prize money.

1. Only commercial approved strains of crops may be entered in the competition.
2. Competitors may enter any number of plots, of each of any named hybrid of Irrigated Agricultural Crop, which has been pre and/or post watered (irrigated only) or not pre and/or post watered (dryland only), of not less than (10) hectares in one piece. Plots of the same hybrid must have different recent crop history.
3. Judging will be carried out by a scrutineer approved by the Maize Association of Australia. Scrutineers must be independent and may be local agronomists or chemical resellers. The Judges decision shall be final.

**Entrants must notify the scrutineer 48 hours before harvest.**

4. Each entry must have uniform treatment throughout and similar recent crop history. A yield test representative of the whole area, comprising 0.1 hectare or more, will be taken at the Judge's discretion.
5. The area harvested must be measured by wheel or hand held GPS and the number of rows and row spacing recorded by the Scrutineer.
6. Scrutineering forms with complete crop information and yield results should be forwarded directly to the MAA.
7. Entries will not be accepted for the Dryland Category if the block can be irrigated.
8. Entries are made subject to the Rules, By-Laws and Regulations of the Maize Association of Australia.
9. MAA reserves the right of refusing or cancelling any entry without giving the reason for so doing.
10. Results will be announced in the “COB”



**Nick Hutchins and Tony Sawers in the current Australian record maize yield crop from 2004/05 season**

## National Maize Yield Competition (continued)

### Prizes

#### Irrigated Competition, Major Sponsor – Netafim



- 1<sup>st</sup> – Airfares and Accommodation to the value of \$5,000 to attend an event overseas to increase your knowledge of maize growing/marketing or storage.
- 2<sup>nd</sup> – 3-4 Bags of Maize Seed (provided the crop has been established using seed from a MAA Member)
- 3<sup>rd</sup> – Complimentary membership to the MAA for one year

#### Dryland Competition, Major Sponsor – MAA



- 1<sup>st</sup> – Airfares and Accommodation to the value of \$2,500 to attend an event overseas to increase your knowledge of maize growing/marketing or storage.
- 2<sup>nd</sup> – 3-4 Bags of Maize Seed (provided the crop has been established using seed from a MAA Member)
- 3<sup>rd</sup> – Complimentary membership to the MAA for one year

For more information please see the attached Guidelines or contact the MAA Executive Officer, Liz Mann on 0427 857 578 or email: [lizmann.ag@gmail.com](mailto:lizmann.ag@gmail.com)

# THE LATEST I.T. CORN HYBRIDS HAVE EMERGED

MORE  
WEED  
CONTROL  
OPTIONS

FEED CORN - 114 CRM

 **PAC 606IT**

GRIT/FEED CORN - 123 CRM

 **PAC 727IT**



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 **PACIFIC SEEDS**

## Scenic Rim dairy farmers stay afloat with smart investments **By Brandon Long, Media Relations Officer,** **ADVANTA SEEDS (Brandon.Long@advantaseeds.com)**

As profit margins continue to tighten in the dairy industry, farmers like Steve and Sharon Jervis at Innisplain in the Scenic Rim are becoming smarter with their investments.

Mr Jervis said the key to running their lean but successful 700-cow operation was to gradually add improvements based on industry best-practice. "While there's nothing wrong with jumping in early, we like to see what trends are working in the industry and slowly incorporate things when needed, because we can't afford to make mistakes," he said.

Threats to the bottom line, which vary year to year, include milk price, labour overheads, feed costs, weed burdens, unnecessary capital expenditure and drought.

One of their most successful recent ventures was to introduce imidazolinone-tolerant (IT) corn, which addressed feed cost and security as well as the weed burden. The system is based on varieties bred with imidazolinone tolerance. This allows use of Lightning®, the registered BASF product for use in the Clearfield system. It allows for treatment of both broadleaf and grass weeds in-crop.

The Clearfield package includes a herbicide tolerant variety, the herbicide itself and a product stewardship program.

"We've always been on TMR [total mixed rations] on this property and have been growing corn for 18 years but recently, due to the nutgrass issues, we needed IT. The technology gives us the same, if not better yields as the non-Clearfield crops, and allows us to tackle weeds," Mr Jervis said.

They feed out 4000 tonnes of corn silage per year, peaking at 5000t, with the number of hectares under the pivoting lateral irrigation system changing each season depending on their needs.

Last season they planted PAC 606IT and PAC 727IT in October and harvested in May. "The 606 was naturally more mature, but you can't always rely on Corn Relative Maturity (CRM) because variables like temperature and rainfall change this.

"Yields here max out at 70t/ha in ideal seasons and we were happy to get 55t/ha in a good year like 2015-16.

"We get the best result when we utilise the correct amount of fertiliser, have decent falls and prepare the ground. Due to good rain last year, we didn't have to irrigate as much as usual."

Another upgrade at the farm, this time to reduce labour overheads, was to buy their own harvester –

a Claas 890 Jaguar forage harvester with a Kemper Champion 445 front. "The initial outlay for the machine is big but we can harvest whenever we want now – there's no wait time. The processor chops the cob into easily digestible portions and is ensiled until we need to feed it out."

Future upgrades include adding automated elements to the rotary milking setup and adding to the silage pits.

"I'd like to add more automation including auto teat sprays and milk diagnostics. Pinpoint accuracy with the iodine on teats and measuring milk quality would save time and money."



**Innisplain dairy farmers Steve and Sharon Jervis recently addressed feed, weed, and labour issues on their farm.**



**Sharon and Steve Jervis, Innisplain**



**Steve Jervis**

**Beautesert dairy enlists new corn in weed battle** By Brandon Long, Media Relations Officer,  
ADVANTA SEEDS (Brandon.Long@advantaseeds.com)

Scenic Rim dairy farmer Craig Brook is now able to tackle weeds and produce quality corn silage in the same season after introducing imidazolinone tolerant (IT) corn to the farm recently. Mr Brook said they introduced corn in 2010, and IT corn in 2015, in the form of pit and round bale silage to supplement the ration.

"A lot of our country gets nutgrass, so with the IT corn you can still get that bulk silage in the pit while tackling weeds in-crop with a Group B herbicide," he said. "Corn is an expensive crop to grow, so you don't want a weedy paddock reducing its potential. You don't want to play 'spot the corn plant' come harvest."

Craig and brother Thomas run Kaperra Farms near Beautesert, cropping at their Round Mountain farm and trucking the feed to Boyland for their herd of 240 Jersey and Holstein cows.

The partial mixed ration (PMR) includes corn, barley, rye, and lucerne and vetch hay, while

grazing pasture consists of lucerne, chicory, clover and ryegrass. The only feed brought in is a small amount of canola meal and grain.

Mr Brook said he aimed for 25 tonnes per hectare from corn silage – a figure he reached last season thanks to plenty of rain. "It was a good year for it. The average annual rainfall for Round Mountain is 600 millimetres and we had twice that last year, so we only needed to irrigate three times.

"Our long term staple variety PAC 624 hit 25t/ha and PAC 606IT wasn't far behind, plus it has the IT benefit. I can't see any yield penalty from growing IT. "It had the most leaf to the plant. You'd stretch out your hand and the leaf was from pinky to thumb, indicating a healthy plant, as some get diseased towards the end."

Mr Brook planted 40ha of corn in 2015-16 over several varieties, with some of it double cropped. He said while grazing was a cheap option and provided protein, it was missing several other key

ingredients, which was where corn came in.

"We get paid on the fat and protein ratio and aim for between 18 and 24 litres per cow per day. We needed corn for that bulk starch. You get a lot better body conditioning, which helps with everything from milk production to fertility.

"For around \$40 per tonne including seed, fertiliser and chopping, it's cheap feed really."

The Parmalat suppliers plant in early September or in October if opportune, and aim to harvest between Christmas and New Year.

Once the corn is chopped and ensiled, Mr Brook lets it ferment for about six months "to lower non-digestible fibre (NDF) levels", making it easier for the cows to consume.

Mr Brook said they had land laying fallow over winter, which come September, will be ready for more corn.



Craig Brook, Kaperra Farms, Beautesert, is growing PAC 606IT corn again after a successful trial in 2015-16.

## Corn silage providing valuable feedlot options at Daringa



**Agronomist Ross Newman, inspecting pits of corn silage on Daringa Station in central Queensland. Corn was grown under dryland conditions on the property.**

A large crop of corn silage, grown under dryland conditions at Daringa, in central Queensland, will provide the base of the cattle feedlot ration.

Agronomist Ross Newman, of Savage, Barker and Backhouse in Rockhampton, said the corn was grown on Daringa Station to maximise the feed quality going into the feedlot. "We focus a lot on trying to produce good quality silage," he said. "Without silage in the ration it ends up being pretty expensive with the cost of grain, so silage is king."

750 hectares of corn was planted on the property from January 14 this season, 400 hectares of Pioneer® hybrid P1414 and 350 hectares of Pioneer® hybrid P1813-IT.

In the past, forage sorghum had been grown as the silage option but corn was chosen this season because of its superior feed value and versatility. "The relative feed value is chalk and cheese," Mr Newman said. "So where possible, we try to grow corn."

He said they had limited space in the pits so there was also a management issue to consider if they filled the areas and still had crop left in the paddock. "Once your pits are full - what do you do with the rest of the material?" With corn, the plan was to take as much as was required for silage and then let the

remaining crop dry in the paddock to be harvested for grain.

"I chose the varieties based on the sheer fact that I could have multiple marketing avenues. Both have gritting potential," Mr Newman said.

The area of P1414 was planted to long fallowed country and yielded 15 wet tonnes per acre. In other sections, that had Mung Beans harvested the previous June, P1414 yielded 12 tonnes per acre.

Mr Newman said the paddock which was planted to P1813-IT had issues with grass weeds in the lead-up so they picked a hybrid where they could use Lightning® herbicide as a post-emergent option. He said the area produced average yields of between 9.5 and 10 tonnes per acre. "Considering what that paddock situation was to start with, we've got a return out of probably the worst paddock on the place."

The corn crop was sown at a rate of 32,000 seeds per hectare into 36 inch row spacings, with the aim of getting 25,000 to 26,000 plants per hectare established. "Where we could get the evenness of distribution of seeds, the crop was absolutely fantastic," Mr Newman said. "Uniformity is key. Getting that light infiltration into the plant helps that cob development."

The crop was sown on a full profile of moisture but received just four inches of rainfall during the growing period and some additional rain as the corn was drying down.

At harvest some 7000 tonnes of silage was put into bunkers to be utilised in the 5000-head feedlot throughout the year.

Mr Newman said they also used Pioneer® brand 11CFT silage inoculant as an option specifically designed for corn. "It was worthwhile talking to a client, I discussed the benefit of not just the three traditional bacteria but also the addition of the bacteria that reduces the lignin," he said. "Silage spoilage is one of the greatest factors that makes silage more expensive and if we can help break down that lignin component as well as improve the digestibility in the ration, we can pick up a gain and those gains end up in the client's pocket." "You talk to people and they say oh inoculant is inoculant and you get told all these different stories," Mr Newman said.

"If you are going to invest in putting down 7000 tonnes, don't risk it by using a dodgy inoculant. An extra buck or two is a decent investment if we can minimise our spoilage."

## Maize silage hits new yield heights on Moxey Farms



**Josh Ziser, of Moxey Farms, at Gooloogong, NSW had a crop of P2307 maize yield and average of 102 tonnes per hectare last season.**

A paddock of maize silage produced potentially an Australian record last season on the Moxey Farms enterprise at Gooloogong, in central New South Wales.

Farm manager, Josh Ziser, said the 20 hectare paddock containing the Pioneer® hybrid P2307 produced the highest yields they had recorded at Moxey Farms. Silage harvested from the block was all put across a weighbridge and averaged approximately 102 wet tonnes per hectare (at 32 per cent dry matter) with some areas of the paddock topping 115 wet tonnes per hectare. "All the areas were quite

good last year but that particular paddock went really well," Mr Ziser said. "It was quite tall and impressive."

Local DuPont Pioneer area sales manager, John De Lyall, said the yield was the highest recorded yield he had been made aware of and could well be an Australian record. He said it was particularly impressive because it was over a large 20 hectare area and not just a small section of the paddock.

Mr Ziser said the P2307 crop enjoyed good seasonal conditions after being planted in mid-October. P2307 was one of a number of hybrids used on the farms and represented the longest-season maturity grown last year. P2307 is a 123 Corn Relative Maturity (CRM) corn and was planted alongside hybrids that included Pioneer® hybrid 32P55 at 114 CRM and Pioneer® hybrid P1813-IT at 118 CRM.

Mr Ziser said they sow the shorter season types early, and then stagger out the silage harvest in the autumn to help ensure the hybrid doesn't all mature at once.

The maize was planted at a rate of 78,000 seeds per hectare into 30 inch row spacings with all the nutrition put on up front to help streamline the process. Flood irrigations and pivots were used to water the crops, with the majority of maize being planted into country that had previously grown lucerne.

While high forage yields are quite important, Mr Ziser said he also concentrated on crops with high nutritional value to ensure the silage does well in the dairy ration. Maize hybrids such as P2307 are also high grain producers and so will produce silage with excellent energy percentages to best complement the high protein lucerne haylage used in the ration.

The maize silage is used throughout the year as the base of the ration for some 3,500 dairy cows.

Last season approximately 30,000 tonnes of maize was ensiled.

## Encouraging outlook for double cropping By Brandon Long, Media Relations Officer, ADVANTA SEEDS ([Brandon.Long@advantaseeds.com](mailto:Brandon.Long@advantaseeds.com))

With dams and soil moisture profiles full, as well as low water prices, double cropping silage and hay crops could add value for many irrigated and semi-irrigated dairy farmers in southern NSW and Victoria this summer.

According to Advanta Seeds corn business manager, Rob Johnston, a number of factors point to this as a good summer for double cropping into corn or forage sorghum. "In addition to the lower cost and availability of water, ongoing benefits on the weed and disease control fronts make double cropping into corn or sorghum a good option this summer," he said. "Both these crops allow the use of Dual and Gesaprim, and corn only has a 10-week plant back to Balance Herbicide. "There are also high yielding imidazolinone-tolerant (IT) options such as PAC 606IT available for post-emergent grass and broadleaf weed control."

Mr Johnston said, as non-host species for sclerotinia and blackleg, corn and sorghum offer a disease break to two of the key diseases affecting broadleaf winter crops. "Sorghum has also shown an ability to reduce the numbers of certain species of nematode, in particular *P. thornei* and is a non-host of verticillium wilt."

Sowing time for corn and sorghum is expected to extend from October to the end of December. "There are a range of maturities for planting over this time, with early sown, quick varieties such as PAC 301 in corn and Sprint forage sorghum offering early quality feed and make efficient use of the good soil moisture available," Mr Johnston said.

"One of the main things to think of when picking a corn hybrid to be planting late in the season is its disease package. Advanta Seeds have an extensive rating system on all its hybrids and it would be worth talking to your local representative. PAC 606IT, for instance, has shown outstanding tolerance to rust and northern leaf blight."

As always, factors such as field layout and existing infrastructure are among the factors which need to be considered when looking at double cropping.



**Advanta Seeds corn business manager Rob Johnston says this summer presents an opportunity for double cropping.**

## Smarting-up agronomy: Matching genetics and management to paddock and prevailing conditions

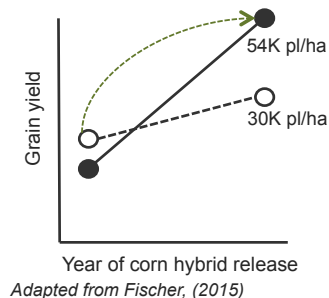
By Daniel Rodriguez, Joe Eyre and James McLean, Queensland Alliance for Agriculture and Food Innovation (QAAFI), The University of Queensland Toowoomba. For further information e-mail: [d.rodriguez@uq.edu.au](mailto:d.rodriguez@uq.edu.au)

Article associated to GRDC's project: *Tactical Agronomy for Sorghum and Maize in the Northern Region (UQ00075)*; and ACIAR's SIMLESA's Program.

GRDC and the Australian Centre for International Research (ACIAR) funded research is producing maize and sorghum hybrid type and agro-ecology specific recommendations in the Northern Region that are helping growers match commercially available genetics to environments and seasonal conditions.

This work is being carried out by the Queensland Alliance for Agriculture and Food Innovation (QAAFI) (<https://qaafi.uq.edu.au>) at the University of Queensland, in collaboration with Conservation Farmers Inc., agribusinesses, seed companies and NSW DPI.

Increases in maize yield are the result of improvements in breeding, agronomy, the farming system, and their interactions. In the USA the interaction between breeding gains and increased plant population has doubled maize yields from under 6t/ha to just below 12t/ha over the last 70 years Fig 1.



**Fig.1 Maize yield for old and new hybrids sown at old (30,000 plants/ha) and modern (54,000 plants/ha) plant populations in the USA. The dotted green line shows the combined benefit from new hybrids planted at higher densities.**

**2 per site, three to four plant densities, solid (1m) and wide (1.5m) configurations, and three replications.**

However, in Australia's Northern Grains Region the uncertainty of rainfall around flowering and high seed costs force farmers to plant much lower plant populations (25-40,000 plants/ha). This means that Australian farmers are unlikely to profit if we do not develop hybrids better adapted to our cropping systems.

When planted at low plant populations, all Australian hybrids will produce tillers or multiple stems, particularly under good seasonal conditions. In some hybrids, some of those tillers will produce cobs and grain; though in most cases tillers will use water and nutrients to grow and produce no grain. Growers see this as a highly undesirable characteristic in our hybrids.

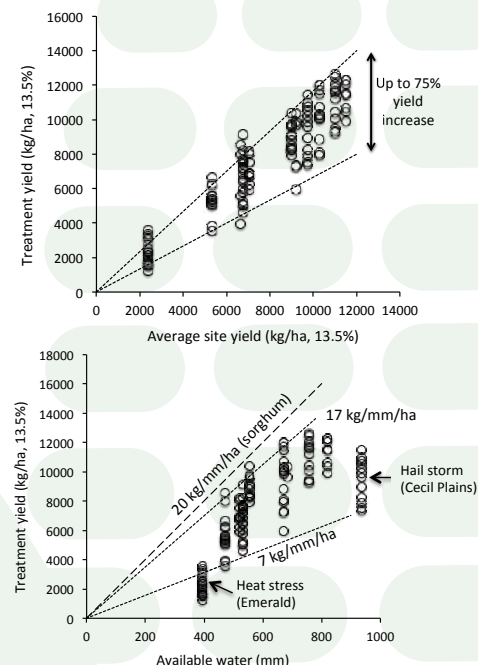
In this project we have developed a large dataset of results from on-farm and research station trials involving a large number of the maize hybrids to develop simple rules that could help farmers match hybrids and managements to site conditions. The dataset includes results from two years of trials; this is, five sites, up to twelve hybrids per site, three to four plant densities, solid (1m) and wide (1.5m) configurations, and three replications.

Results so far have shown that the difference between the lowest and highest yields (combination of hybrid x density x configuration) was up to 75% (top panel in Fig 2).

When expressed in terms of yield per unit of available water (bottom panel in Fig 2), that yield difference represented a 2.4 fold increase in water use efficiency (WUE; from 7 kg/mm/ha to 17 kg/mm/ha). Note that one site in Cecil Plains was affected by the hail storm of the 23 Dec 2015; and that another site at Emerald was badly damaged by water and heat stress.

The bottom panel in Fig 2 is also interesting because it shows that the maximum values for WUE in maize were about 15% lower than those for sorghum. This suggests that genetic improvement in maize in Australia might be lagging behind those of sorghum, or that the materials available in the market are not able to yield when grown at the typically low plant densities of Queensland in rainfed and irrigated maize cropping (see top panel, Fig 2). Fig 2 also shows that understanding which treatments are optimal across the range of tested sites and water availabilities can help us predict the highest-yielding combinations of hybrid and management for locations with expected yields between 2 and 12 t/ha.

These results question the idea that agronomy outweighs genetics in maize yield; and emphasises



**Fig 2. Diversity of treatment yields (kg/ha) across nine sites (or environments) plotted as a function of the average yield of each site (kg/ha) (top panel); and the available water at each site i.e. initial soil water + in crop rainfall + irrigation (bottom panel).**

that what really matters is understanding how to match hybrids and management to sites and expected seasonal conditions.

Further results and discussions can be found in QAAFI's Annual Trial Reports available to download from my web site (<https://qaafi.uq.edu.au/profile/471/daniel-rodriguez>); at our Annual Field Days and Goondiwindi 2017 GRDC Updates.



**Recent grower field day.**

## Independent Replicated Trial - Maize Grain Yields from Microbial Enhancement of Soil Health

By Andrew Wollen, Project Manager, Terragen

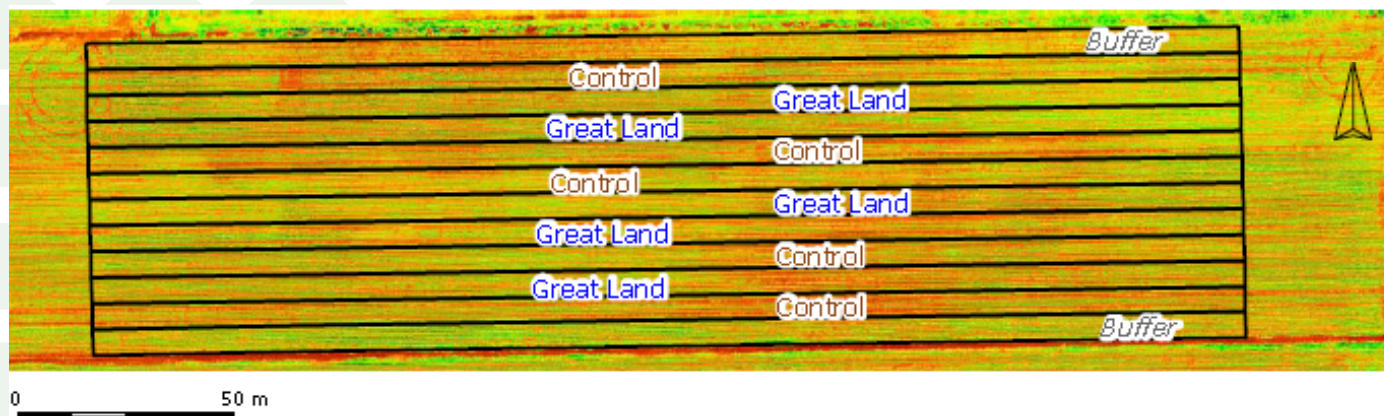


Figure 1: Aerial image (NDVI) of treatment layout

Biological health of soils is becoming an essential part of farmers thinking. An increasing body of scientific evidence shows the vital contribution of beneficial microbes, and other forms of soil life, to the performance of farming operations. The addition of beneficial Plant Growth Promoting Bacteria (PGPB) to the soil as part of a 'biological approach' to conventional farming systems has the ability to improve solubilisation and plant uptake from the existing reserves of soil nutrients. Subsequent benefits can include; less demand for applied soluble fertilisers, reduced loss of applied nutrients, improved plant mineralisation resulting in better yields, improved product quality and increased resilience to environmental stresses.

The effectiveness of "Great Land" as a live PGPB inoculant has been established over a wide range of farming enterprises. However, ongoing trials continue to be conducted to broaden the knowledge around optimum application methods, rates and interactions with different irrigation systems and soil fertilising programs. This is the first trial where application of "Great Land" has been applied just once, with the seed.

This independent trial was conducted at Craig Reynolds' farm, Congupna, near Shepparton, Northern Victoria. Supervision of the trial and data analysis was performed independently by Ag Logic. Craig normally sows 200 hectares of feed maize grain under a flood irrigation system. The trial crop was sown in mid-November and harvested in mid-April.

### Aim of Trial

To evaluate the impact on maize grain yield from the application of "Great Land" applied during sowing of the crop.

### Design

A trial paddock was selected on the basis of uniformity in soil type, topography and agronomic history across the entire area. The trial was established with five replicates of treated and control strips with each treatment strip being one width of an eight-row seeder. Figure 1 illustrates the trial layout using an aerial image.

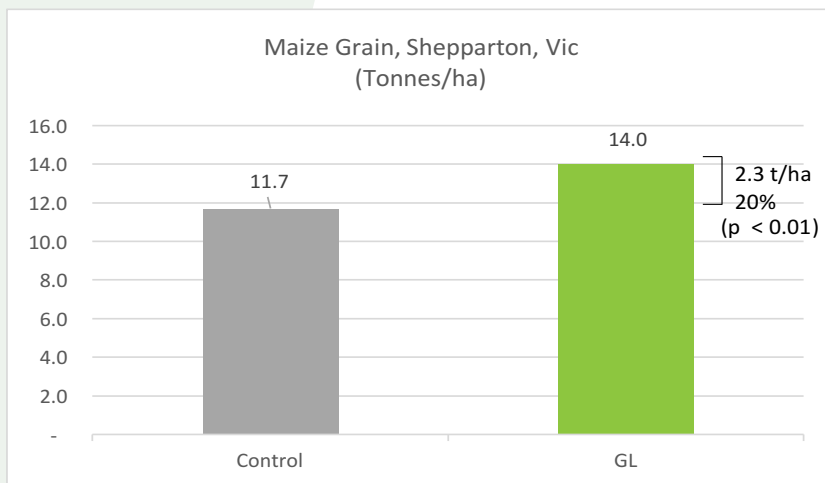


Figure 2: Trial results – average yields over treated and control replicates.

The crop's standard fertiliser program was used across the entire trial area. Major nutrients for the season totalled approximately 330 kg N/ha; 60 kg P/ha; and, 5 kg S/ha.

### Treatments

Treated strips received "Great Land" at a rate of 80 L/ha, undiluted, applied at sowing. "Great Land" replaced the normal application of liquid starter fertiliser and was applied through the seeder, at the same depth as the seed. In all other respects, treated strips received the same fertiliser as control strips.

### Assessments

The crop was harvested using a GPS yield monitor, logging yields at a rate of once per second. The yield data map was used to remove equipment-related variation from row ends, before applying statistical analyses to a section of the paddock totalling approximately 2 hectares. Additional assessments were made to record plant growth parameters measured during vegetative stages, along with the nutrient content of the harvested grain.

### Results:

The treated plots yielded an average of 2.3 t/ha (20%) higher harvested grain weight (moisture 13%) than the control (Figure 2), the difference being statistically significant ( $p < 0.01$ ). The range in yields between replicates was 0.6 t/ha for treated strips and 3.0 t/ha for untreated controls.

Plant growth during vegetative stages and nutrient content of grain did not show significant differences.

### Discussion:

This trial provides further clear evidence of improved yields and uniformity of crop performance from the enhancement of soil microbial populations, with plant growth promoting bacteria.

Economically, a yield difference of this magnitude would result in a benefit of around 3 to 4 times the cost of application. Further trials are being conducted to examine the ability of PGPB to help maintain high yields in conventional farming systems while reducing the application of soluble fertilisers.

## "HSR BRUTUS" new maize for Australia in 2016

Through HSR seeds extensive "Research and Extension trialling" (R.E.T.) programme over both 2015 and 2016 growing seasons in Australia we have identified a new maize product now named "HSR BRUTUS", to fill the needs of grain and silage growers looking for exceptional yields from a quick maize at a CRM of 105 days to maturity.

"HSR BRUTUS" has all of the positive attributes that we feel growers will embrace in a maturity grouping or slot that has been missing in the Australian market. Yields at our Orbost, Shepparton, Darlington Point, Breeza, Allora and Kingaroy R.E.T. sites have been outstanding. "BRUTUS" has come out well on top of its maturity grouping for yield in testing, and in some instances beating commercial products of longer maturities.

The development of "BRUTUS" has come about because we felt that a gap was there for a quicker high yielding product to fill a need for southern

growers that don't want to spend money drying grain. Any grower can get a late opportunity with water to grow a crop, and still have the ability to mature the grain prior to winter without drying. It fits very well for double cropping and has very good 'Stay Green' for silage production as well. The 'Stress Emergence' and 'Stalk strength' are other positive attributes, which make the emerging seedling bounce out of the ground and the crop will stand well in the field under most adverse conditions.

The name comes from the ancient Roman politician "Marcus Junius Brutus" he had an amazing parentage of previous well known romans, who was also just referred to as "BRUTUS", which remains HSR seeds policy to name products instead of the confusing numbering system. This makes it easier for growers to remember and the fact that it has a large "Brute" of a cob/ear on the plant, it is very appropriate.

You will find "BRUTUS" in only small quantities during the 2016/17 growing year, and it can be purchased from any reputable retail store. It is best to compare "BRUTUS" with what you are currently growing, sitting between the maturities would be "OLYMPIAD" at 112 CRM and "MAXIMUS" at 102 CRM. All HSR seeds products are delivered with 72,000 kernels in a bright blue bag. The major differentiation to other Maize seed suppliers is that we include on the bag tag the standard International Seed Testing Association (I.S.T.A.) results, testing actual germ under both warm and cold conditions. This gives you the grower confidence in the product you are purchasing.

For further information on Agronomy and planning talk to your HSR contacts David Coddington (0499 274 464) or John Auer (0448 580 273) at HSR seeds [info@hsrseeds.com.au](mailto:info@hsrseeds.com.au)

### BRUTUS 2016



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**Robots and 'imi' corn the future for Beaudesert dairy** By Brandon Long, Media Relations Officer,  
ADVANTA SEEDS ([Brandon.Long@advantaseeds.com](mailto:Brandon.Long@advantaseeds.com))

Cows are happier and crops are healthier at the Cahill's Beaudesert dairy since the introduction of milking robots and herbicide resistant corn crops.

Matthew Cahill, who runs the 365-hectare farm with wife Allison, said modernising their operation has improved animal health, cut labour costs and reduced the weed burden. "Instead of the cows being herded twice a day into the old herringbone setup, they are free to roam in and out of the automatic milking machines, which has improved their temperament," he said.

Mr Cahill said their 280 Friesians are fed a total mixed ration (TMR) and do not graze, instead moving between the robots, the feedpad and two loafing areas. "It used to take two or three people three hours in the morning and three hours in the

afternoon to milk the cows. Now we only need one or two workers – just myself if it comes to it."

They installed five DeLaval Voluntary Milking System robots in 2010, which feature milk meters, online cell counters, floor cleaning and a hydraulic arm which sprays iodine on the teats after milking.

Consequently, this freed up time to grow most of the crops for silage and hay - cutting feed bills. Eighty hectares of irrigation area allows them to grow corn for silage, Lucerne for hay and a small amount of oats or barley for winter feed.

Mr Cahill made the move to imidazolinone-tolerant (IT) corn varieties during the 2014-15 summer season to get more silage in the pit while also tackling weeds, particularly nutgrass in-crop with

Lightning® herbicide. The most recent season was one of his best ever, seeing up to 57 tonnes per hectare of wet silage off the corn.

"We sowed 3ha of PAC 727IT, 3ha of PAC 606IT and 6ha of another variety at the end of October and it was a tough start, as the crop was rained on heavily. We sprayed Lightning® once at the 2-3 leaf stage which took care of the nutgrass, and in the end we managed to get 57t/ha off the best part of the block.

"The combination of the milking machines and the IT corn has made the workplace more lifestyle friendly and has helped production as we move into uncertain times in the industry."



Matthew Cahill says milking robots and IT corn have changed his dairy for the better.

## MAA Executive

The executive of the Maize Association of Australia is elected by the Association's members to represent the maize industry and work on its behalf:

- To identify new opportunities for growers and marketers;
- To respond to issues affecting the industry, e.g. GMO and export standards; and to
- Liaise with R&D corporations to achieve the best outcomes from growers' R&D levies.

The table below lists the members of the current executive, along with their contact details. If you know of an issue about which the maize industry should be aware, or an issue on which the maize industry should develop a position, or could assist with the advancement of, please contact an executive member to discuss your thoughts.

### MAA Executive Committee 2014-2015

Liz Mann	CEO - MAA	PO Box 2293 Shepparton Vic 3632	0427 857 578	<a href="mailto:lizmann.ag@gmail.com">lizmann.ag@gmail.com</a>
Harley Bligh	Chair - Grower	386 Bligh Road Brookstead QLD 4346	07 4693 0160	<a href="mailto:harleysb@bigpond.com">harleysb@bigpond.com</a>
David Coddington	Industry	HSR Seeds, Narrandera NSW	0499 274 464	<a href="mailto:david.c@HSRseeds.com">david.c@HSRseeds.com</a>
Tony Cogswell	Industry	PO Box 411 Forbes NSW 2871	02 6851 2077	<a href="mailto:tony@lachlancommodities.com">tony@lachlancommodities.com</a>
Rob Crothers	Industry	Pioneer Australian	07 4637 3600	<a href="mailto:rob.crothers@pioneer.com">rob.crothers@pioneer.com</a>
Gino De Stefani	Grower	Whyalla Beef Pty Ltd	0427 763 845	<a href="mailto:gdestefani@whyallabeef.com.au">gdestefani@whyallabeef.com.au</a>
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Sean Kennedy	Grower	Corop, Victoria - Grower	0417 729 941	<a href="mailto:skennedy.ag@icloud.com">skennedy.ag@icloud.com</a>
Nick Slipper	Industry	Robinson Grain	0439 173 907	<a href="mailto:nick@robinsongrain.com.au">nick@robinsongrain.com.au</a>
Bernie Walsh	Vice Chair - Grower	PO Box 103 Yanco 2703	02 6955 7110	<a href="mailto:washfarms@bigpond.com.au">washfarms@bigpond.com.au</a>
Stephen Wilson	Industry	Locked Bag No 9001 204 Wyreema Road Toowoomba, QLD 4350	07 4630 1155	<a href="mailto:stephen.wilson@pioneer.com">stephen.wilson@pioneer.com</a>

## Maize Association of Australia Incorporated ABN 1650 790 2551

**Membership Application 2015/16** for membership based on the financial year ending June 30, 2016. Please accept my/our application for membership of the Maize Association of Australia (tick relevant box)

- |   |                     |
|---|---------------------|
| <input type="checkbox"/> Corporate members            | \$1,500.00 per year |
| <input type="checkbox"/> Merchant company members     | \$750 per year      |
| <input type="checkbox"/> Research corporation members | \$220.00 per year   |
| <input type="checkbox"/> Individual/producer members  | \$125.00 per year   |

**Please make your cheque payable to Maize Association of Australia Membership fees inclusive of GST**

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The MAA will issue you with a tax invoice on receipt of your membership application and payment.

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