The Australian Summer Grains Conference (ASGC) is a tri-annual event showcasing the maize, sorghum, sunflower soyabean and mungbean industries. The MAA was involved in organising this very successful conference held on the Gold Coast in early March. Our thanks go to Steve Wilson and Rob Johnston for their efforts on the organising committee to bring together a thoroughly interesting and informative program of local and international speakers. The conference covered a broad range of topics including trends in new innovations, markets, technology and even health.

Specific to Maize, we had Mark Macrander, from Ingredion US, speaking on the latest developments on US specialty corn crops. Interesting to note they have three separate classifications for non-GMO corn, depending on the percentage of GM in the sample, ranging from 1%-5%. He also highlighted the emerging trend of processors and supermarkets to promote and label sustainably produced products. To achieve a sustainability label growers must attain a USDA approval/accreditation of their farming operations. I feel sure this trend will emerge here in the future.

Mark Cooper, a US plant breeder from Dupont Pioneer, presented his work on drought tolerance traits in maize. These traits once incorporated into commercial crops will enhance the Water Use Efficiency (WUE) of our varieties for years to come.

Other local speakers included:

Andrew Cogswell, who spoke on Maize marketing strategies and opportunities with particular reference to our strategic advantage of non-GMO product into North Asia.

Gino de Stefani, who attracted a lot of interest in his presentation on Whyalla Beef using high moisture corn as a feed.

Steve Wilson, a corn breeder with Dupont Pioneer Australia, who gave a presentation on the history of maize improvements of which he has seen an enormous amount during his long career.

As usual, the conference concluded with a dinner at which awards for service to industry were made. I am delighted to report the Ian Hamparsum Award for service to the Maize industry was awarded to a thoroughly deserving Steve Wilson, who has dedicated 32 years to corn breeding in Australia. As a farmer it is great to recognise and acknowledge the efforts of breeders as we rely on greater yield and quality traits to keep us in business. Steve is a foundation member of the MAA and holds a huge corporate knowledge of our industry and I congratulate him on his award.

Export

I feel all the foundations have been laid for corn exports to North Asia. We have successfully sold our non-GMO corn to Japan and Korea. They are actively seeking non-GMO maize and our varieties suit their needs. We are a small industry by world standards allowing us to be able to do ‘Identity Preservation’ (IP) very well. We have compiled the protocols which can assist growers, merchants and accumulators to enable the successful export of grain. All that needs to happen now is the Australian industry needs some favourable production years, with a reasonably valued AUD, thus allowing at the same time our merchants to expand tonnages for these markets.
The Ian Hamparsum Memorial Award

The Ian Hamparsum Memorial Award is named in memory of Mr Ian Hamparsum, who was a long-time maize grower on the Liverpool Plains in northern New South Wales. As a grower, he contributed to the growth of the industry in that region, as well as being involved in many regional activities.

The Award is presented on a tri-annual basis to a member of the maize community who has made an outstanding contribution to the industry. At the recent Australian Summer Grains Conference held at Royal Pines in March 2016, the Award was presented to Mr Stephen Wilson. Stephen as Maize Research Manager for Pioneer Hi-Bred Australia, has been involved in the maize industry for more than 32 years. As well as developing a large number of industry-leading hybrids, including 3270, C76, 31H50, P1756 and P1414, he has also been on the Executive of the Maize Association of Australia for more than 20 years. He has also represented the Maize industry on the organising committee for the Australian Summer Grains Conference for the 2010, 2013 and 2016 Conferences.

Stephen joins an elite membership of previous recipients:
2000 – George Commins
2003 – Colin Birch
2006 – Allan Irvin
2010 – Nick Hutchins
2013 – Tony Cogswell

Figure 1: Stephen Wilson (right) accepting his award from Tony Cogswell
Specialty corn crops have been grown in the United States for over 40 years using Identity Preservation (IP) techniques. Acreage for the more popular specialty corn types (white, waxy, hard endo) has been stable over time. In recent years, acreage for Non GMO and Organic have been on the rise along with Enogen corn. With lower corn prices the interest in growing IP corns of all types has also been on the rise. Although the primary benefit of raising IP corn is higher revenues for the grower it does not come without its challenges. Following IP protocols, meeting quality specifications, providing traceability documentation and the risk of contamination from pollen drift are a few of the challenges that need to be met to successfully produce specialty corn in the United States.

In total, specialty corn crops are a small portion of the US corn crop, representing roughly 3% of the total production. Specialty corn types are processed via four different processes. The wet milling process is a sophisticated process that separates the individual components of the kernel via physical and chemical methods. The dry mill process separates kernel components via a physical process while alkaline cooking is a method of making dough and flour from corn. The dry grind ethanol process ferments starch from corn to make ethanol. In addition to these processes there is an active export market for most specialty corn types.

Hard endo corn (sometimes referred to as yellow food grade) is one of the larger specialty corn types in the US representing approximately 1.5 million acres. The hard endo market is a very stable market and has GM and Non GMO markets within it. Premiums range from 20 to 60 cents per bushel and the key products produced with hard endo corn are flaking grits, brewers grits, corn meal and corn flour. Hard endo corn typically goes through the dry milling process and has an active export market as well.

White corn is a stable market that has both GM and Non GMO markets. Acreage was approximately 730,000 acres in 2015. Premiums are currently in the 25 to 60 cent per bushel range. About 80% of the white corn goes through the alkaline cooking process which makes masa dough or flour. The remaining 20% of white corn raised is dry milled which produces grits, meal and hominy.

Waxy corn is grown on approximately 450,000 acres and primarily goes through the wet milling process resulting in the production of modified food starches, industrial starches or native starches. Premiums range from 35 to 80 cents per bushel and both GM and Non GMO waxy markets exist.

The Non GMO yellow corn market is growing. It is estimated this market represents approximately 1.2 million acres. This specialty type is typically wet milled, exported or used as animal feed. With no standard definition for Non GMO there are several sub markets within Non GMO. Contracts exist at 0.9%, 2% and 3% GM thresholds. Non GMO yellow premiums are typically in the 35 to 50 cent per bushel range.

Other smaller specialty corn markets exist. Blue corn is a Non GMO corn type that is sometimes grown in an organic system. It is typically dry milled and produces products similar to white corn. Amylose corn is a Non GMO specialty corn type that is typically wet milled producing adhesives, glass fiber sizing, bioplastics and candies. Another small but growing market is Enogen corn which is corn grown specifically for usage in ethanol plants. Enogen corn contains the alpha amylose enzyme which helps increase efficiency in ethanol plants.

The specialty corn market today has many unique opportunities and challenges. The increasing demand for Non GMO products along with the potential confusion around what constitutes Non GMO requires end users and growers to have a clear understanding of requirements ahead of time, before signing contracts. As Non GMO demand has increased so has the rise of 3rd party verification companies. Companies such as NON-GMO Project offer 3rd party verification of products, produced according to rigorous best management practices to avoid GM contamination. As Non GMO demand increases so does the impact of contamination from neighbour to neighbour. Identity preservation protocols and Traceability systems need to be implemented to minimize issues of GM contamination of Non GMO fields, plus communication between neighbours needs to be taken to a new level of cooperation. The question becomes whose rights are to be protected, neighbour #1 or neighbour #2.

Currently, ample supplies of grain and lower commodity prices are putting pressure on specialty corn premiums in the US. However, grower interest in these specialty corn programs is very high. Specialty corn programs may be a small percentage of US corn production but they fill a very important niche for the industry and offer enhanced revenue opportunities for growers willing to meet the requirements of the specialty contracts.
New maize option yields well for Loch dairy farmer  By Ian Hooker

A first time try of the Pioneer® hybrid P1070 maize produced excellent yields in two different locations for dairy farmer Ian Hooker, of Loch in South Gippsland, Victoria.

Mr Hooker said he’d been growing maize for 15 years although it was the first time he had planted P1070. He said they put in 23 hectares all up with the 13 hectares off-farm producing yields of 26 dry matter tonnes per hectare of silage. “The 10 hectares of the dairy farm was almost as good,” he said.

Maize is planted as the weather warms up in November and is normally taken through harvest as silage in April.

Mr Hooker said the off –farm block was about 20 minutes from the dairy farm on river flats which held moisture really well. “It does grow great maize,” he said. The block is not irrigated, with the subsoil moisture and good natural falls of rain used to grow the crop.

A planting rate of between 97,000 and 98,000 seeds per hectare was used to sow the P1070 hybrid, with an excellent germination achieved across the two paddocks. “The germination was close to 100 per cent,” Mr Hooker said. “There weren’t too many missing plants.”

He said maize was a good option for the best utilisation of their country. It can also be used as part of the dairy ration at different times of the year. “I do like growing maize. It is a bit of a challenge and it is a good crop. We can then use maize when it suits us.”

Maize silage is used on the property for both milking cows and dry cows and would typically be fed out in the late autumn and winter period. “It is great tucker,” Mr Hooker said. “If it wasn’t for this we would be in trouble.” During spring, the cows utilise the pasture paddocks which are typically hitting their straps and there is also an opportunity to conserve any leftover maize silage for later. This year the higher yields from more hectares of maize will allow the dairy to also use the silage after New Year and take the pressure off buying in different feed options.

While maize has been grown for the dairy across a period of 15 years, there was one summer where it was not planted, and caused some issues with the cost of purchasing feed. “That year we bought more feed in than it would have cost to grow the maize,” Mr Hooker said.

Typically the maize is planted for three to four years running on the same paddock, and annual ryegrass is sown in the same areas across the winter period.

Harvest of P1070 maize for silage on the property of Ian Hooker, of Loch, VIC
Southern Queensland farmers finds corn replacement thanks to Dupont Pioneer  By Shane Peters, QLD

After searching for a variety to replace Pioneer® brand 32P55 hybrid corn, Shane Peters has found what he’s looking for in Pioneer® brand P1414 hybrid corn.

Shane, whose property ‘Ackerim’ is at Victoria Hill near Allora in southern Queensland, trialled a bag of the P1414 last summer and was impressed with what he observed. “I was looking for a hybrid that would be just as good, if not better, than the P55 but with similar characteristics.

I planted the P1414 trial next to P55 on the 30 September 2014 at 36,000 seeds per hectare with 25kg/ha of Starter at planting time and before that I’d applied 13.5 cubic metres/ha chook manure and also pre-applied 200 kg/ha of urea,” he says.

While the corn was planted into quite good moisture, Shane says it did have a tough start, with no rain for a month. “We didn’t get anything until the end of October when we got a 32mm storm, but we also got a heap of hail which striped the plant down and knocked it round a bit, but surprisingly enough the corn came back quite well. We then only had 28mm in total across six falls in November, before the big rains came in December and January, which helped a lot,” he says.

Shane harvested on the 18th February 2015 and was impressed with the quality despite some dead grain, which he attributed to the hail event. The P55 ended up yielding around 6.1 t/ha while the P1414 went about 6.6 t/ha.

“The P1414 did seem a touch better than the P55 - at the start of the season it just seemed to handle that drier weather a bit better than the P55 - I’ll be definitely putting in P1414 this year,” Shane concludes.

Corn for grain has proved the best use for the water allocation on the “Gidneys Hut” property of Mick Barlow, just north of Moama, in the southern part of New South Wales.

“With the water allocation here we’ve got to do something with it. One of my interests is corn. I like corn because it fills the header up quick and I’ve had a fair bit of success with it. The soil type suits corn here. Free draining soils, they water fairly quickly, good falls, just everything points towards corn.”

He said corn was an enjoyable crop to grow and could be quite rewarding through the season and after harvest. “The way you see something growing in your paddock,” he said. “It’s ordered, it’s all in a row. It grows quickly and when it comes to harvest it fills the header box quickly. And mostly, with a little bit of mucking about with about your marketing, you can do pretty well out of it.”

The crop was initially grown on the property in 2002 and reintroduced four years ago as water became available following the dry. “This is the fourth year in a row that we’ve grown corn,” Mr Barlow said. “Our poorest yield in that time has been over 15 tonne – and up to 18 tonne per hectare. So it fits a good place in our life, gives you money when everything else seems to have run out. I like it like that.”

He said the Pioneer® hybrid P1070 had been used on the property for the last four years with great results. “It’s been my main variety because of the agronomist’s advice. I didn’t make that choice myself but I’ve had good success with it. I’m very happy with it.”

Across the period, corn has been rotated around to different paddocks and is normally sown in the middle of October which helps ensure there isn’t any need to dry the grain at harvest. Last year one of the paddocks grew clover through the winter and was cut for silage in August and hay in November so the corn was not sown until early December. That particular paddock grew an 18 tonne per hectare crop a number of years ago and parts of the paddock produced a similar yield in spite of the later planting. Overall the area yielded 15 tonnes per hectare in a very good result.

A planting rate of 93,000 seeds per hectare was used for the December plant. “The seed bed here was fairly perfect this year so we ended up with a fairly high rate of germination, up to 86,000 plants per hectare, and that sets you off on the way to a good crop,” Mr Barlow said.

Other factors, such as times on the bay, a good fall of 1 in 800 and a perfect water recycling system, all attribute to getting irrigation water on the bays quickly, efficiently and on time. “At this stage we haven’t used eight megs per hectare on any of the crops. It is usually about 7.5 or a little bit over 7.5 and consequently you’ve got to try and match your hectares to your water,” Mr Barlow said. “I budget for 8 megs and we haven’t got there yet. The key also to it, is getting it in early while there is still sub-soil moisture and you are not trying to feed it right from that start and you can fluke a rain early on there somewhere that can kick you along a bit.”

Nutrition is also an important component of reaching for the higher yields with 250 kilograms per hectare of DAP placed under the ground for a start along with 400 kgs of urea. A further 400 kilograms per hectare of urea is applied early in the crop and watered in.

Mick Barlow, of Moama, NSW, has had yields of up to 18 tonnes per hectare from P1070 corn

By Mick Barlow

Corn the best use of water on Moama property  By Mick Barlow

By Shane Peters, QLD
The first year of growing maize for silage proved very successful for dairy farmer Scott Lumsden, at Leitchville, in northern Victoria.

Mr Lumsden planted 33 hectares of Pioneer® hybrid P1467 maize in early December 2014 and produced an average yield in excess of 22 dry matter tonnes per hectare when it was harvested in April of 2015. He said it worked out at $170 per dry tonne harvested and in the pit which compared very favourably to other feed options available. “Even at $190 to $200 it is still worth it. Hay was more expensive.”

The decision to grow maize last season was helped by good advice from his local agronomist and the urging of his nutritionist who was keen on the crop. “Our nutritionist really espouses its virtues, he loves it,” Mr Lumsden said.

A trip to California a number of years ago also demonstrated the benefits of maize in the dairy. “The dairies over there all ran on maize and lucerne hay. We could physically see how the Americans ran their mixed rations.”

He said it was an interesting process looking at growing maize and the help of a passionate local agronomist made the decision to plant a lot easier. “I was told maize had a recipe and you follow that recipe.”

A paddock was chosen for the crop and the maize planted on December 1 following the harvest of a cereal silage crop. Long-life urea was applied prior to sowing and DAP was also used in the initial periods. There wasn’t any need to add urea throughout the season which made it a relatively easy crop to manage. Mr Lumsden said the paddock preparation for maize was also not that difficult with just three passes needed to get the harvested cereal paddock ready for the summer crop.

He said they initially relied on natural rainfall for the establishment of the crop, although there was a need to water up the area in the subsequent weeks because of a lack of follow-up rainfall. With very little rainfall occurring across the summer period the crop was irrigated and used approximately 7.5 megalitres per hectare through to the finish.

“It was chopped at milk line 3.5 to 4.0 and it looked really good going into the pit. Our nutritionist looked at it and was very happy with it,” Mr Lumsden said.

The prospect of having in excess of 700 tonnes of maize silage to help feed the 750 milk cows is one that is quite pleasing. “Having big pits filled with maize gives you peace of mind. To have it up your sleeve, it provides us with different options through the year.”

He said the maize will be utilised through a mixer wagon in conjunction with protein hay, grain and a protein mix. “We will need to have less grain in the bale and it is a cheaper option than hay.”

Other advantages of maize such as herd health, assistance in joining and the ability to fill feed gaps through the year will also be realised. Mr Lumsden said the maize crop was rotated into an oats/vetch crop shortly after harvest.

He said there will definitely be the same amount or even more maize planted in the coming season with the option of a longer-season Pioneer hybrid being considered in conjunction with an earlier planting date to try to increase yields even further.
Converting stored grain to income – You grew it, you’ve earned it, now make sure you bank it
By Peter Botta, PCB Consulting

Grain in the silo is not yet money in the bank. It needs to be protected from a decline in quality and value, and ensured access to a market. Insect infestations, fungal pathogens and larger vertebrates can erode the value of the grain by reducing the physical quality and quantity for sale. Whole loads can be rejected due to nil tolerance for live insects, chemical residue issues and the presence of fungal pathogens.

The longer the storage period required, the greater the potential for infestation and quality deterioration. Your grain selling strategy subsequently needs to be matched with a plan for appropriate protectant and curative treatments over the same time period. The following ongoing and active interventions are to be included in any grain storage program:

- Maintain excellent silo hygiene, structure and function.
- Pressure test gas-tight sealed storages before fumigation.
- Regularly check structural integrity of silos.

Corn hybrids from Pioneer Seeds Australia have once again dominated the annual Royal Agricultural Society of Queensland (RASQ) crop competition with wins in both the dryland and irrigated sectors.

It is the sixth year in a row a Pioneer hybrid has taken out both divisions and demonstrates the strength of the research program and hybrid performance over many seasons.

The recently announced winners grew crops that were harvested in 2015 and the highest yielding corn hybrid was Pioneer® hybrid P1467 grown by Greg Hauser, of Wicks Farm, at Gatton. A yield of 16.185 tonnes per hectare was achieved from the hybrid, with the corn also claiming the title of Reserve Champion Crop in a competition with a range of winter and summer options.

The yield from the Gatton property just eclipsed a crop of Pioneer® hybrid P1756 grown on the Haylor property at Dalby which was tested at 16.138 tonnes per hectare. Third place went to Graham Stallman, of Clifton, with Hycorn 727 at 8.393 tonnes per hectare.

Pioneer Seeds Australia Corn Product Manager, Rob Crothers, said there were many pleasing aspects in the results from the RASQ competition. “The winning entries came from a wide geographical spread from Gatton in the east, Dalby in the west, Killarney in the south and also the central Darling Downs,” he said. “It shows the adaptability of the Pioneer hybrids across all areas under both irrigated and dryland conditions.”

Mr Crothers said there were four different Pioneer hybrids in the results which demonstrated the strength of the Pioneer breeding program. “P1467 and P1756 are relatively new corn hybrids and it is very pleasing to see these rise to the top in terms of yield.” “This is an indication that our breeding program is releasing products that are superior in yield to their predecessors and also have a range of additional agronomic and trait advantages.”

Over many seasons 32P55 dominated the RASQ competition in both dryland and irrigated sectors but has now been headed by these new options. Mr Crothers said seasonal conditions in the six years in which Pioneer hybrids have won both the irrigated and dryland corn competitions had been quite varied.

Fumigant resistance is a symptom of poor application combined with the structure being unsealed. We need to ensure all fumigants are available for use and the only way to ensure their longevity is using them in a gas-tight, sealed structure. These actions will assist in ensuring the best quality product reaches the market, and the subsequent conversion of stored grain into dollars in an uncertain income year.

The grain silo is an active and dynamic biosphere which must be managed to ensure quality grain for market and convert last year’s investment in time, money, resources and infrastructure into income. However, it can quickly descend into a costly nightmare if not managed and planned properly.

Please contact Peter Botta at PCB Consulting on 0417 501 890 with queries and search www.grainstorage.com.au for more information on grain storage options, aeration, identification of insect pests, the Australian standard for sealed silos AS2628, alternatives for non-sealed silos or the effective use of phosphine.
**Introduction**

Major challenges facing maize growers in the Murray Darling Basin are the cost and availability of water. To give an example from Northern Victoria, as of the beginning of the 2015-2016 season, temporary water on the Goulburn irrigation system was trading for more than $250 per megalitre. Similar increasing water costs are trending in other irrigation regions. Achieving the highest water use efficiency is therefore a key to growing sustainably and profitably.

**Drip irrigation history**

Modern drip irrigation technology was invented in Israel in the 1960s, with continued developments since that time. The concept of drip irrigation involves having water flow through pipes, or ‘driplines’ and being released through plastic emitters, spaced along the driplines.

The emitters are designed to create turbidity in the water, thereby keeping any particles suspended in solution. This means that the dripper does not clog with dirt or other particles. The flow is also regulated. Drip Irrigation technology has developed over the years to now provide a high level of resistance to clogging.

The driplines are part of an integrated irrigation system, with pumps, filters, valves, automatic controllers and fertiliser injection systems.

**Maize in Northern Victoria**

Sub-surface drip irrigation was first taken up in Victoria by growers involved in the processing tomato industry. The processing tomato industry in particular converted from furrow irrigation to sub-surface drip during the late 1980s and 1990s. The industry went from producing an average yield of below 50 tonnes per hectare in the mid-1980s to averages of above 100 tonnes per hectare in recent years. The industry credits much of this increase to drip irrigation – specifically, being able to control soil moisture levels, applying water to match crop requirement, and more consistently applying nutrients by using fertigation – injecting fertilisers into the driplines.

However, tomatoes are an expensive crop to grow and, as processing capacity closed and contracts were decreased in size during the mid to late 2000s, growers were looking to grow a different crop with the systems they had installed for tomatoes. maize became a popular crop, with high yields and good water use efficiency, partially as a result of the drip irrigation systems and the processing tomato growers’ skills in using these systems. As maize commodity prices remained good and money became available through the federal government’s On-Farm Irrigation Efficiency Program, farmers began installing sub-surface drip irrigation systems specifically to grow maize. Good results have since been achieved. Examples of some results to date from sub-surface drip irrigated maize crops in Northern Victoria include:

- Tony Sawyers: 20.5 tonnes/ha using 6.7 megalitres of water (a 1.5 ha area of one block yielded 28 tonnes per hectare) – this is an Australia record
- Grower in Kerang: 18 tonnes per hectare using 8 megalitres per hectare
- Grower in Corop: 17 tonnes per hectare using 6.5 megalitres per hectare
- Grower in Ardmona: 17 tonnes per hectare 6 megalitres per hectare

**Design**

The capital cost of installing sub-surface drip irrigation is significant, hence it is essential to design the most efficient system possible. However, we must make sure the system can deliver the peak crop water requirement. In Northern Victoria for maize this tends to be 12 mm per day during the hottest period when at its peak growth stage, assuming that there is always some reserve moisture in the soil.

The system must be carefully designed to ensure that the system will work hydraulically. This includes ensuring that there is enough pressure to operate all emitters at their required flow rates. All the technical information for the installation and operation will be contained on the design.

The common system for sub-surface drip irrigation is:

- Laterals 1.5 metres apart
- Emitters putting out 1 litre per hour, and spaced at 0.5 metres along the driplines.
Installation

The drip lines are ripped into the ground with a machine at approximately 25-30 cm below ground level. The sub-mains are then placed in a trench and the drip lines are finally attached. Heavy-wall, properly maintained, drip lines should last in the ground for 20+ years.

A video showing one of these installations is available on line (https://www.youtube.com/watch?v=hms_D_eirUM).

Advantages

The main advantages of sub-surface drip include:

- improved water use efficiency;
- increased yield;
- ability to inject fertiliser to the plant roots as required by the plant;
- ability to apply water to the crop on a daily basis to match crop requirement.

In addition the system can be fully automated. This is a huge advantage for reducing labour requirement and assists in precise scheduling of irrigation.

Sub-surface drip irrigation also enables growers to manage rain events. If a rain front is forecast but the crop requires water immediately you could apply 5 mm directly to the roots. If the rain front resulted in 25 mm of rain you may end up with an acceptable result, instead of a flood. If the front came through and ended up delivering minimal rain you could then apply another 15 – 20 mm. No other system has this kind of flexibility.

Challenges

Sub-surface drip irrigation also creates some challenges. On the duplex clay loam soils of Northern Victoria sub-surface drip does work well, as the water moves laterally, and upwards through the soil to provide enough moisture for germination. However, determining the time required to run the system to achieve optimum germination moisture does require experience.

Return on Investment

A return on investment calculator can be used to assess the investment into sub-surface drip for maize production as compared to other irrigation systems. To determine this, the relevant data has been inserted into a spreadsheet. The main drivers (apart from capital cost of the system) are the commodity price and yield, and also the quantity of water used and cost per ML of water.

This example shows a 4 year payback and a 34% internal rate of return for the investment.
Conclusion

Sub-surface drip irrigation has been successful for growers growing maize in Northern Victoria. It is initially a high-capital investment for what has traditionally been a commodity crop, but expensive water, good maize prices and high yields (which have been achieved with sub-surface drip irrigation) have resulted in the technology becoming more widely adopted.
Several factors have combined over the past month to increase water demand and thus result in a further firming of the water market. These factors are:

- a continued strong demand for temporary allocation water across the whole Southern Connected Basin for pre-watering of cereal crops/pastures, topping up of overdrawn accounts from summer overuse, and for carryover;
- only minor increases in market supply with the NSW allocations seeing no further increase in both the Murrumbidgee and NSW Murray valleys. The announcement on 15 April saw the Murrumbidgee general security remaining at 37% and NSW Murray remaining at 23%. In Victoria, Goulburn High Reliability Water Shares, will end the season on 90%, and Murray High Reliability at full allocation.
- continued hot and dry weather.

Historically, autumn is the period of the year where prices will usually be declining, or close to it. This can be highlighted below in the tail end of the 2013-14 season. Obviously prices in a specific year will depend on supply and demand rather than always following a historical pattern, this was the case this time last season (2014-15), as irrigators scrambled for carryover and water for cereal crops and pastures. Current pricing is a good example of this where demand has increased while supply has not increased to the same degree and hence prices have increased over the past month.

Cooler weather on the horizon and the prospect of additional water being released on to the market by High Reliability/Security (and other) holders mean we may be near the peak of temp prices for the remainder of this water year. A seasonal break with widespread rain may be the best way to ensure a drop in the price of temp water. In the meantime it’s certainly a good opportunity for sellers to obtain good prices for their temp water.

It probably comes as no surprise, however the outlook for early favourable allocation announcements early in the 16/17 irrigation year appear to be unlikely outside of a rapid return to ‘average inflows’ given the current below average storage inflows and a slowly declining El Niño. Water availability forecasts for the forthcoming 2016/17 season (starting 1 July 2016) have been made.

**2016/17 NSW Allocation forecasts under ‘extreme dry’ to ‘average’ inflows**

<table>
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<th>1 July</th>
<th>1 Sept</th>
<th>1 Nov</th>
</tr>
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<tbody>
<tr>
<td>NSW Murray HS</td>
<td>Most assured</td>
<td>1 July, with balance accruing shortly after</td>
<td></td>
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<tr>
<td>NSW Murray GS</td>
<td>0%</td>
<td>0-24%</td>
<td>0-42%</td>
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</tbody>
</table>

**2016/17 VIC Allocation forecasts under ‘extreme dry’ to ‘average’ inflows**

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<th>15 Aug</th>
<th>17 Oct</th>
<th>15 Feb</th>
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</thead>
<tbody>
<tr>
<td>VIC Murray HR</td>
<td>0-0%</td>
<td>0-31%</td>
<td>0-56%</td>
<td>6-100%</td>
</tr>
<tr>
<td>VIC Goulburn HR</td>
<td>0-17%</td>
<td>4-42%</td>
<td>12-82%</td>
<td>20-100%</td>
</tr>
</tbody>
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In the NSW Murray, the initial outlook for High Security next season on 1 July is largely favourable with full allocation likely (97%) but this may be delayed until inflows improve. While the initial outlook for General Security is currently unfavourable, with the likelihood of 0% high. In Victoria, the initial outlook for High Reliability next season on 1 July for Goulburn and Murray is minimal and may open on as little as 0%. Any improvement from 1 July in all valleys is heavily dependent on future inflows.

Carryover volumes are likely to be consistent with that of last season in both NSW and Victoria which, similar to earlier this season, may elevate some upward pressure on prices. Note that rainfall in April, May and June could allow increases to these estimated allocations.

From a risk management point of view, the sorts of tools buyers are using to guarantee at least some water for the 16/17 year include Forward Water Agreements and buying for Carryover. Those looking to carryover can do so in either physical storages, carryover accounts on their own licenses or by renting carryover space on other licenses. Information on the current water market and advice on water security strategies is readily obtainable by contacting a water broker.

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**Good inflows needed for next season** By David Barthold of Ruralco Water Brokers

In the NSW Murray, the initial outlook for High Security next season on 1 July is largely favourable with full allocation likely (97%) but this may be delayed until inflows improve. While the initial outlook for General Security is currently unfavourable, with the likelihood of 0% high. In Victoria, the initial outlook for High Reliability next season on 1 July for Goulburn and Murray is minimal and may open on as little as 0%. Any improvement from 1 July in all valleys is heavily dependent on future inflows.

Carryover volumes are likely to be consistent with that of last season in both NSW and Victoria which, similar to earlier this season, may elevate some upward pressure on prices. Note that rainfall in April, May and June could allow increases to these estimated allocations.

From a risk management point of view, the sorts of tools buyers are using to guarantee at least some water for the 16/17 year include Forward Water Agreements and buying for Carryover. Those looking to carryover can do so in either physical storages, carryover accounts on their own licenses or by renting carryover space on other licenses. Information on the current water market and advice on water security strategies is readily obtainable by contacting a water broker.
The long-term improvement of maize yield productivity within the US corn-belt has been extensively documented and is the subject of much ongoing investigation. These historical studies indicate that both genetic improvement of maize hybrids and improved agronomic management methods have contributed to the realized productivity gains achieved over the years. In addition to describing what has been achieved to date, understanding the potential for further sustainable productivity improvements for the future is foundational for the design of any long-term research strategy. To determine the potential for future contributions from both further genetic changes to the maize plant and different agronomic management systems it will be necessary to conduct experiments that jointly evaluate the acclimation of genetic diversity and the alternative agronomic management opportunities. However, such experiments become large and complicated very quickly. Thus, the most commonly adopted experimental approach has been to focus on one or a few elite maize hybrids and evaluate these in a small to moderate number of selected agronomic practices (e.g., different fertilizer applications, different plant populations or different irrigation strategies) at one or a few locations for one or two years. Such experiments are important for choosing suitable agronomic practices for commercial hybrids, but they have limited power to guide long-term research strategy. To overcome these limitations of scale of experimental approaches one practical approach that is now being applied is to use the power of modern computers to run advanced crop models for networks of experiments to enable prediction of how the different maize hybrids will perform in environments and agronomy beyond those directly tested in the experiments. Such modeling approaches can also be extended to the investigation and design of the cropping systems under consideration by growers.

Such a combined experimental and modeling approach was taken to develop the Optimum® AQUAmax® suite of maize hybrids developed by DuPont Pioneer. Through focused experimental efforts that characterized native genetic diversity for yield of elite maize hybrids under drought conditions, Pioneer breeders were able to design breeding strategies that combined improved performance under drought conditions with high yield under more favorable conditions in the US corn-belt. An important component of the improved yield performance of selected AQUAmax® hybrids was associated with a change in the pattern of water use by hybrids (Messina et al. 2015). The results obtained from the modeling study predicted improved yield under a wide range of drought conditions. Importantly, the modeling study also indicated that yield would not be lost in many of the more favorable environments of the US corn-belt when the water limitations were not severe. Breeding and selecting for yield associated with an appropriate balance of water use during the vegetative, reproductive and grain filling developmental stages enabled identification of hybrids that had improved yield stability across a wide range of drought environments while maintaining the ability of the hybrids to achieve high yield potential under favorable conditions (Cooper et al. 2014). Important testing of many of the candidate AQUAmax® hybrids across a range of different agronomic management systems indicated that the AQUAmax® hybrids outperformed other maize hybrids in drought environments when the hybrids were grown at higher plant populations than those that were in current use by the growers. Characterizing this combined contribution of improved hybrid genetics and improved management strategy enabled the recommendation to growers of an improved integrated hybrid and agronomic product strategy at the time the AQUAmax® hybrids were available to growers. The AQUAmax® hybrids were first released in the US in 2011. A comprehensive three year study was conducted in the US corn-belt from 2011 to 2013 to compare the yield performance of the AQUAmax® hybrids with other hybrids in use by growers (Gaffney et al. 2015). Over the three year period of the study many comparisons were made in drought and favorable environments. In total 78 AQUAmax® hybrids were compared with 4,287 non-AQUAmax hybrids in a total of 2,006 drought environments and 8,725 favorable environments. On average over all of the comparisons the AQUAmax® hybrids demonstrated a 6.5% yield advantage over the non-AQUAmax hybrids under drought and a 1.9% yield advantage in the favorable environments. The breeding methods that were used to develop the AQUAmax® hybrids for the US corn-belt are now being applied by DuPont Pioneer maize breeders in other drought-prone geographic regions of the world. Further, the new maize genetic resources with improved drought tolerance that were initially developed for the drought-prone Western region of the US corn-belt are now being evaluated and used by DuPont Pioneer breeders globally.

**References**


**AQUAmax® drought tolerant maize hybrids developed for the US corn-belt**

By Mark Cooper, DuPont Pioneer, 7250 NW 62nd Avenue, Johnston, IA 50131, USA

The AQUAmax® hybrid suite of maize hybrids developed for the US corn-belt was used to predict the yield impact that could be achieved by breeding for a change in the pattern of water use by hybrids (Messina et al. 2015). The results obtained from the modeling study predicted improved yield under a wide range of drought conditions. Importantly, the modeling study also indicated that yield would not be lost in many of the more favorable environments of the US corn-belt when the water limitations were not severe. Breeding and selecting for yield associated with an appropriate balance of water use during the vegetative, reproductive and grain filling developmental stages enabled identification of hybrids that had improved yield stability across a wide range of drought environments while maintaining the ability of the hybrids to achieve high yield potential under favorable conditions (Cooper et al. 2014). Important testing of many of the candidate AQUAmax® hybrids across a range of different agronomic management systems indicated that the AQUAmax® hybrids outperformed other maize hybrids in drought environments when the hybrids were grown at higher plant populations than those that were in current use by the growers. Characterizing this combined contribution of improved hybrid genetics and improved management strategy enabled the recommendation to growers of an improved integrated hybrid and agronomic product strategy at the time the AQUAmax® hybrids were available to growers. The AQUAmax® hybrids were first released in the US in 2011. A comprehensive three year study was conducted in the US corn-belt from 2011 to 2013 to compare the yield performance of the AQUAmax® hybrids with other hybrids in use by growers (Gaffney et al. 2015). Over the three year period of the study many comparisons were made in drought and favorable environments. In total 78 AQUAmax® hybrids were compared with 4,287 non-AQUAmax hybrids in a total of 2,006 drought environments and 8,725 favorable environments. On average over all of the comparisons the AQUAmax® hybrids demonstrated a 6.5% yield advantage over the non-AQUAmax hybrids under drought and a 1.9% yield advantage in the favorable environments. The breeding methods that were used to develop the AQUAmax® hybrids for the US corn-belt are now being applied by DuPont Pioneer maize breeders in other drought-prone geographic regions of the world. Further, the new maize genetic resources with improved drought tolerance that were initially developed for the drought-prone Western region of the US corn-belt are now being evaluated and used by DuPont Pioneer breeders globally. **References**


For farmers across the country with adequate subsoil moisture, autumn means getting wheat, barley, canola and other winter crops into paddocks, with little downtime. But for some Darling Downs growers, a recent tour of the Casino area in northern NSW for a corn and soybean field day was worth taking a day off for.

About 40 farmers made the bus trip to the Advanta Seeds/PB Agrifood Fairy Hill field day, held at Peter Brodie and Mark Carter’s share farm 13km north of Casino. Advanta Seeds corn business manager Rob Johnston said the information afternoon focused on crop diseases, trial methods and new products. “The trial site in Casino is very important to Advanta as it’s a great area to test for in-crop diseases like northern leaf blight and rust,” he said. “We can test our new and upcoming hybrids against these diseases.” It was also an excellent opportunity to show farmers from the Downs what we’re doing in research and hybrids that are coming through, plus explain to them how we test hybrids and why we release certain hybrids to the market.”

Mr Johnston said of particular interest were the new imidazolinone tolerant (IT) varieties PAC 606IT and 727IT. “Allan Smith from Snackbrands was also on-hand to discuss with growers what they look for in a corn crop, and he showed growers a commercial crop of PAC 727 which will go into making CCs corn chips.”

Mr Johnston said the timing of the tour was ideal given the Downs corn harvest usually runs from January to April, while northern NSW runs a bit later, from February to May.

PB Agrifood staff led a walkthrough of a soybean trial, helping growers learn more about the soybean trial varieties on display, while Queensland Department of Agriculture and Fisheries (QDAF) staff discussed the best practices for stored grain and testing aeration efficiency of grain storage.

### Extension of host and geographical range of *Pantoea ananatis* on maize to Victoria

An extension of geographical and host range of *Pantoea ananatis* (*P. ananatis*) on maize (*Zea mays*) in Victoria was announced on 3 May 2016. This is the first report of *P. ananatis*, commonly known as Leaf Spot Disease of Maize, in Victoria and the first record of the bacterium on maize in Australia. There have been previous reports of the pathogen associated with diseases of rice (NSW, NT), sorghum (NSW) and pineapple (Qld). There are multiple varieties of *Zea mays* susceptible to *P. ananatis*, including sweet corn and maize. Additionally, the plant pathogen has a wide known or suspected host range including pineapple, rice, onion, tomato, eucalyptus, peach, sudangrass and honeydew melons.

Symptoms associated with *P. ananatis* on maize include elongated necrotic lesions on leaves. Any unusual plant symptoms or pests should be reported immediately to the relevant state or territory agriculture agency through the Exotic Plant Pest Hotline at 1800 084 881.
Kennedy Agriculture Pty Ltd, located at Corop in Northern Victoria, grows a range of irrigated crops, including maize, wheat, faba beans and processing tomatoes. These crops are typically grown using sub-surface drip irrigation which has been installed on a permanent basis. The sub-surface drip is buried at a depth of approximately 25cm, with laterals at 1.52m spacings.

Sub-surface drip irrigation has been used by the Kennedys since the mid 1980’s, to grow processing tomatoes. The system was initially installed temporarily and removed following each processing tomato crop. The system is now installed on a permanent basis and, with the use of GPS technology, the beds can be reformatted at any time knowing that the sub-surface drip line will be in the centre of the bed.

A typical cropping rotation on the property consists of one processing tomato crop every 4 years, with maize, faba beans and wheat grown in rotation. Following maize crops, Sean Kennedy was finding that he had an issue with the carryover of maize stubble and cobs. This then posed an issue when growing processing tomatoes. Processing tomatoes are mechanically harvested, with the entire tomato bush being cut off at ground level and passing through the harvester. Tomatoes are mechanically shaken off the plant and are then loaded into bulk tubs to be carted to the factory. During harvest Sean was finding that the old cobs and some stalks were being picked up by the tomato harvester. Some of this trash was not being removed by the electronic dirt and colour sorters located on the harvester and ended up being delivered to the tomato processing factory with the tomatoes. Upon delivery to the factory the bulk tubs or tomatoes are unloaded by washing the tomatoes out of the tub, hence the cobs and stems were floating into the factory and potentially jamming the equipment.

To overcome this issue Sean developed a method during the 2014/15 season to capture the cobs during the harvest of the maize crop. This enabled the majority of the cobs to be removed from the paddock, thus minimising the number of cobs that would be picked up by the processing tomato harvester. At this stage these cobs have been dumped on the edge of the paddock and burnt at a later date, although Sean is now looking at options to enable them to be utilised.

Pioneer Corn Variety Sets New Record For Southern Qld Farmer

Owen Rosenberger’s Pioneer® brand P1467 corn was not only the best yielding variety he’s ever grown, it achieved that feat by a wide margin. Mr Rosenberger, who farms just north of Oakey on the Darling Downs in southern Queensland, with parents Ron and Meryl and his brother Ross, has grown P1467 for two years. “We’d been looking around for a corn variety that suited our area and our conditions and our local Pioneer Area Sales Manager, Ben Thrift, suggested this variety and for the last two seasons it’s been really good. “The first season we compared it to a couple of other varieties, and it stood out, so this is the first year we’ve actually had one variety across the whole lot,” he explains.

In the 2015/16 season the Rosenbergers planted 75 hectares of P1467, with 110kg/ha of urea pre-plant before applying 50kg/ha of Starter and 20kg/ha of sulphur and potash at planting. Pre-emergent weed control consisted of 3L/ha Gesaprim® and 2L/ha Dual Gold®, with glyphosate applied after the planter. “We planted on the 25th October into marginal moisture in a long fallow paddock that had good stored moisture, and a little bit of rain allowed us to get started. “It wasn’t overly wet when I planted it, but by planting a lot deeper we got a really good emergence,” he says.

The P1467 was harvested for silage on the 31st January 2016, with the yield of 50t/ha setting a new record for the family. “It’s our highest ever yield and an exceptional result for our area, being nearly 20t/ha more than normal – it’s nearly an irrigated yield in a dryland situation. “We had a pretty good season, we were under a lot of storm rain and the crop never really had a hard day - every time it needed a drink it got rain,” he says.

The silage is now all stored in pits, ready to be fed back to the Rosenberg’s dairy cows. As for the P1467, the exceptional performance has secured its future in their cropping rotation.

“We’ve used a few different seed companies, but Pioneer has the varieties that suit what we want to do. “Their P1467 corn suits our country, which is not really known as a corn growing area, but this hybrid seems to perform for us, so we’ve stuck with it,” Owen Rosenberger says.
A goal to grow corn to consistently achieve high yields has provided excellent gross margins on the property of John Hibma, of Mathoura, in southern New South Wales. Mr Hibma said they had grown corn for the past five seasons and, in some years, have produced average yields of 18 tonnes per hectare.

He said areas of the paddocks had yielded more than 20 tonnes per hectare and the aim going forward was to average that mark across the entire corn area. “I am hoping that the 20 should be quite achievable,” he said.

Mr Hibma said while the gross margin was the main reason they grew corn, it was also a very enjoyable and rewarding crop. “It’s a very rewarding crop to grow. Just the speed of it all. Every day you can see changes. We used to grow it a bit on the flood too and every now and then you’d have a little spot that you missed with the pre-watering and you could just sort of see the difference, from that one week’s difference in the crop. There’d be a foot on top of the crop and you would just think wow, that’s how this one would have looked like last week. It is just a very enjoyable crop to grow.”

During the 2015/2016 season he grew Pioneer® hybrid P1467 and Pioneer® hybrid P1756. “Literature seems to show that they’re the best ones for what we need. We are growing P1467 as a feed and the other one is a gritting option.” P1756 was grown on the property the previous year and performed particularly well. It provided excellent yields and was able to be sold into the processing market at a premium. “It gives you another market and usually a little bit of a bonus in a normal year,” Mr Hibma said.

He said P1467 was initially put in as a feed grain option but was then sold to a local dairy farmer as a silage option to feed their cows. “It was grown for grain but a dairy farmer has approached us and he has bought it as silage, standing silage. The other one is just for grain, straight out grain.”

Mr Hibma said he was aiming at yields of 30 to 32 dry matter tonnes per hectare from the silage and 20 tonnes per hectare from the corn being grown for grain. He said the excellent yields were able to be achieved with the hybrids selected, good agronomic advice and higher plant numbers and fertiliser.

“Obviously the better the breeding, the more likely you are going to get the yields. We aim to achieve about 90 odd thousand plants per hectare and sow it at just under a hundred. It seems to have been fairly successful.”

The nutritional requirements consist of 350 kilograms per hectare of MAP up-front and 500 kilograms per hectare of urea. Additional urea is then fed to the crop through the pivot irrigations through the season. Zinc is also utilised at different times.

Normally corn on the property is sown in October or November, although last season that planting date was delayed until December waiting for an oats crop to be harvested.

Mr Hibma said the marketing of the grain had been relatively easy over the years they had grown corn. “It has never been hard to sell corn. It is a very easy thing to sell. A bit like wheat, there seems to be plenty of buyers out there and marketing has never been an issue.”
As we know, corn made into silage properly is a great feed for ruminants. There are two critical points that I want to cover, to ensure farmers understand how to maximise returns and ultimately profit from feeding corn silage to their animals. These critical points are:

1. **The Ensiling Process**
2. **The Nutritive Value and Balancing of the product**

**1. Ensiling Process**

(a) **Fermentation Process**
Corn plants in our paddocks are covered with both detrimental and beneficial micro-organisms. Microbes do all the work during the fermentation process of making good silage. They can also do all the damage if not properly managed.

We need to chop at the correct dry matter, properly pack to exclude any air and create an environment that allows lactic acid-producing bacteria in particular, along with others (e.g. acetic and propionic), to utilise the glucose and other plant sugars. Lactic acid causes pH to drop, hence the acid-producing bacteria stop producing acid. This leaves excess sugars available for the animals’ diet which in turn leads to increased productivity.

(b) **Stability Phase**

If silage is adequately packed and at the right dry matter there is a much better chance of the corn silage fermenting into a stable silage mass. Residual oxygen in the silage mass creates an environment for heating and slow fermentation. This has a great effect on silage quality, resulting in degradation of protein and depletion of plant sugars, and has the biggest effect on forage quality and hence animal performance.

This is also very important for silage when exposed to air during the feedout phase. Exposure to air stimulates yeasts, that were on the plant at harvest time, to break down lactic acid and raise the pH of the silage mass. The yeast then destroys degradable nutrients creating heat which allows moulds and bacteria to grow, creating more spoilage. These moulds and bacteria don’t only reduce the silage quality, and hence animal productivity, but they also create mycotoxins which affect, breeding, immunity and other metabolic processes in your animals.

The best way to encourage lactic acid-producing bacteria is to use a high-quality, properly researched and documented inoculant, such as Lallemand Animal Nutrition’s Lalsil HC. This applied technology will assist both the initial fermentation process and stability phase. The lactic acid-producing bacteria dominate the forage mass ensuring a fast and efficient fermentation. The DNA-patented bacteria Lactobacillus Buchneri 40788 included in the inoculant, help ensure silage stability at feedout by controlling yeast and mould growth. This in turn maintains a high-quality, palatable and hygienic silage for your animals.

Corn silage is known to be a high-energy forage which, along with being extremely palatable, makes it a perfect feed option for ruminants. The energy from corn silage compliments the protein from protein concentrate supplements or well-managed grass and legume pastures, balancing out the animals’ diet for high milk, fibre or meat production.

**2. Nutritive Value and product balance**

Corn silage can contain 40 - 50% grain on a dry matter basis - hence is an excellent energy source, but it is relatively low in protein at between 7.5 - 9% CP. Therefore feeding corn silage alone will not support high animal productivity, due to the low protein level. However, balanced with concentrate protein sources such as lupins, soyabean meal, canola meal etc, it will help support higher productivity levels. As mentioned earlier, highly digestible, high-protein grasses and legumes also provide a good balance.

Corn silage also has good levels of effective fibre for maintaining good rumen function. The NDF portion is the important fibre in this circumstance. Ensuring proper dry matter at harvest is critical and is related to the maturity of the crop, hence the need for a correct chop length to optimise the effectiveness of the fibre portion.

*Important*

Recent research has shown that total plant digestibility, but more so starch digestibility, increase dramatically over the six to ten month period of ensiling. Over 10 months of ensiling, starch digestibility can increase by up to 15% and total digestibility by up to 10%. This means the longer we can leave the corn silage in the stack the more our animals will digest and hence perform from it.

Keep in mind that rations may need to be adjusted due to this starch availability and fibre digestibility increase over time.

In summary, Corn Silage is an excellent consistent energy and fibre source for ruminants. Understanding the ensiling process, getting the key fermentation factors correct, and using a high quality inoculant like Lalsil HC from Lallemand will ensure the highest-quality silage possible.

Corn silage starch and dry matter digestibility will increase with time in the silage stack, so adjusting rations or diets will be critical to maximising animal health and productivity.
“HSR Amadeus” and “HSR Amadeus IT” have performed exceptionally well in southern Queensland in the 2015/16 growing season. Grown widely as a gritting maize option for delivery into Defiance milling in Warwick. It can also be grown and delivered as a stock feed grain (High moisture grain into “Whyalla Feedlot”), or also grown for stockfeed silage. This “plasticity” (or ability to be flexible) of “HSR Amadeus”, as both the conventional hybrid and the Imidazoline (CLEARFIELD) herbicide resistant version, makes it very attractive to growers and consumers alike in this ever evolving and changing Maize marketplace.

Sam Fessey of “South Toolburra” at Wheatvale grew dryland maize this year, half of his area to “Amadeus” and half with one of its gritting competitors to be delivered into Defiance for milling. The outcome was that his crop of Amadeus yielded well, with the lowest amount of quality deductions, and very consistent grain shape and uniformity. Sam was very happy with his outcome in a tough growing year. The competitor crop was all rejected for poor grain size into the mill.

Stewart Free of “Woozbry Transport” sowed and harvested Sam’s entire crop, and also grew some on his own property, “Hamilton Farms” at Clifton this year. Stewart was very impressed with the growth of his “HSR Amadeus” right throughout the season, under dryland conditions, saying that it showed very strong traits to withstand the stresses of being grown under tough conditions in a testing year. Its ease of harvest and uniform large grain size also impressed Stewart, and he commented that he will definitely be growing more “HSR Amadeus” himself next year and has no hesitation to recommend others to try it as well.
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

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<thead>
<tr>
<th>Name</th>
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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)

- Corporate members $1,500.00 per year
- Merchant company members $750 per year
- Research corporation members $220.00 per year
- 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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Please cut out this form and return it with your cheque to:
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