



Bright future for the Australian maize industry

By Amelie Casgrain and Tom Dixon

Stimulating the Australian maize industry by tapping into Asian markets

The future of the maize industry was a key topic at the Australian Summer Grains Conference on the Gold Coast in June 2013. Tony Cogswell, from the maize exporting company Lachlan Commodities Pty Ltd and member of the Maize Association of Australia Executive Committee, spoke of the challenges the industry faces and the opportunities for growth in the future.

Maize is a minor crop in Australia, yet the country is becoming a self-sufficient producer: 2007 was the last year Australia needed to import maize. And despite the strength of the Australian dollar, the industry is growing steadily.

"Maize exports rose 270 per cent between 2000 and 2013," said Mr Cogswell. In 2011–12, 55,959 tonnes – the highest exports recorded to date – were registered through the Port of Brisbane, the main thoroughfare for maize. It is anticipated that 2012–13 season will produce greater than 110,000 tonnes of maize exports.

The Australian maize trade currently targets niche Asian markets only and exports remain low compared to other crops. "If Australia captures 15 per cent of the Japanese and South Korean markets, it could double the size of the maize industry here," said Mr Cogswell.

To continue to grow, the industry needs to understand where the markets are and build strong relationships with those customers.

Advantages of Australian maize

Unlike many other big exporting countries, Australia only grows non-genetically modified (GM) maize. Since 1996, growers around the world have adopted GM hybrids to control pests and weeds, which Australia is free from. Ninety per cent of the maize produced in the United States, one of the biggest exporters, is now GM.

Many countries have strict regulations on importing and selling GM goods. South Korea and Japan both restrict GM maize imports for food consumption. The growing demand for non-GM maize in Asian markets gives Australian growers an advantage over other big exporters.

Because maize production in Australia is counter-seasonal to the production in the northern hemisphere, Australian maize is available when Europe or North America has limited supplies.

"These advantages can be played up by the Australian industry to stimulate exports," said Mr Cogswell.

Success of the industry relies on growers and buyers

In order to develop the export market, the maize industry needs to establish good relationships with international buyers. High-quality grains of the right varieties, as well as consistency, will stimulate demands from importing countries.

"To boost our industry and keep the customers happy, we need to deliver clean, consistent quality maize that produces good yields," said Mr Cogswell.

"By investing in on-farm storage, growers can meet the needs of export demand exactly when it is required," he added.

Growers will gain more confidence in producing maize if they know there is a thriving export market. With better product and reliable quantities available, importing countries will continue to demand Australian grain.

Bright future for maize industry

The Australian maize industry aims at boosting the production to one million tonnes per year by 2020. "It is a very doable task," said Mr Cogswell.

Maize has the largest geographical distribution of all summer crops, stretching from the northern tip of tropical Queensland to Tasmania. Australian growers can capitalise on the GM-free status of the grain grown here and the benefits of counter-seasonal production. These factors will help establish Australia as one of the main players in GM-free maize exports.

"Consistency is the key to maintaining confidence between growers and consumers," said Mr Cogswell. With a client-oriented strategy and consistency in the product delivered, the industry has a lot to offer the North Asian market.

In this issue

Presidents Report	2
Developing versatile germplasm suitable for variable growing	4
Queensland corn growers capture valuable export markets	6
PAC 607IT meets market specs after heat wave and flood	6
Research proves benefits of corn in cotton rotation	8
Summer grains vital to future farming in northern region	9
Corn a diverse crop option on southern NSW property	9
Lightning herbicide controlling key weeds in corn on Pilton property	10
Quick maturity corn yields big in tough season	10
Managing for nitrogen deficiency in Central Queensland	12
Outsmarting weeds - beyond herbicides in cropping	14
Membership form and MMA executive committee contacts	15

FOLLOWING A STRATEGIC PLANNING WORKSHOP AT THE RECENT MAA AGM.

It is highly likely you will not receive a copy of the COB IN 2014 unless you are a financial member.

If you wish to receive information from the MAA, please join the Association (see membership application page 15)



Maize exports rose 270 per cent between 2000 and 2013

- Courtesy of Tom Dixon, Econnect Communication

From the CEO

I look forward to witnessing the future success of the MAA. Without the association as a platform to provide a conduit to all sectors of the supply chain, it appears evident that the industry may not reach the potential growth in the market place.

I thank Keith and the executive for their continued support and drive which has been difficult due to the lack of funding.

In closing I wish Harley Bligh, President, Liz Mann, CEO and their executive well in their endeavours to increase membership and funding for the Association and wish all sectors of the Association a successful season.

Kind regards

Jennie Hehir

Maize Association of Australia Incorporated
ABN 16 507 902 551

www.maizeaustralia.com.au

Circulation approx. 3400

Published Spring and Autumn

MAA and Membership

Liz Mann

MAA

PO Box 2293

Shepparton, Vic 3632

0427 857578

lizmann.ag@gmail.com

Editorial and Advertising

Stephen Smith, Agri-MC

PO Box 4043, Bendigo 3550

Ph: 03 5449 6346

Fax: 03 9012 4519

Mob: 0428 106 053

Email: stephen@agri-mc.com.au

www.agri-mc.com.au

Deadlines

The copy deadline for the Autumn issue is:
March 14, 2014.

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.

Ad size	Price/ad/issue ex. GST	Investment per reader per ad
Full page A4	\$ 1590.00	\$ 0.39
Half page A4	\$ 995.00	\$ 0.23
Quarter page A4	\$ 600.00	\$ 0.14

The MAA acknowledges the significant support to this publication by the Grains Research and Development Corporation (GRDC). The support of GRDC and advertisers is vital for the production of The Cob.

Disclaimer

The Maize Association of Australia has produced The Cob in good faith based on information available at the time of publication. Information in this newsletter has not been independently verified or peer reviewed, and is published at the reader's risk. Products or services may be identified by proprietary or trade names to help readers identify particular types of products but this is not and is not intended to be an endorsement or recommendation of any product or manufacturer.

The opinions expressed in The Cob are not necessarily those of the Maize Association of Australia nor GRDC, and no responsibility is taken for the accuracy of the material published herein.

Presidents Report



As with many agricultural organisations in Australia, the Maize Association of Australia (MAA) has insufficient funds to employ a full time industry officer. This results in an association with very little power to tackle any major issues in a proactive manner.

The present organisational structure of the MAA relies on an executive comprising of grower, research/advisory and industry representatives all of whom have full time employment elsewhere.

For the past two years the MAA has consulted broadly with industry and sought funding for a Maize Development Officer who would oversee the huge potential in the export of maize to South Asia.

This funding would be largely sourced from maize grower levies administered by the Grains Research and Development Corporation (GRDC). The MAA's calculation of these statutory levies administered by GRDC amount to approximately \$1 million per annum, however these levies are socialised to priority projects within the course grain industry and not necessarily maize.

After meeting with GRDC on several occasions, it was determined that due to poor historical success with Industry Development Officers, there was insufficient return on investment for this proposal to continue. At present there are only seventy paid grower members of the association. The membership is a voluntary contribution.

The COB is a biannual newsletter produced with the purpose of keeping all those involved in the Maize industry fully informed and updated with all maize issues. At present the COB is co-funded by GRDC and advertising. It is almost certain the COB will cease to exist in its current form, and instead be administered by the GRDC's Ground Cover.

Whilst financial resources are required to ensure a successful MAA, it is also ESSENTIAL that members play an active role in voicing their opinion on the direction of their industry.

Following this year's Australian Summer Grains Conference, the MAA executive decided to commission an independent facilitator to assist in formulating a strategic plan for the future of the association.

The MAA held their AGM on 6 September 2013. At this meeting I did not seek re-election. I would like to thank past and present executive members for their continued support during the past three years including Craig Choice, Kieran O'Keeffe, Glenn Lok and Paul Newell. The industry has benefited enormously from the tireless work

Kieran O'Keeffe's has done trialling the use of abamectin to control spotted mite and his work on mycotoxin's. I have thoroughly enjoyed my time with the association and am certain it will continue to grow with the increased export tonnages of our GM free product to Asia. Special thanks go to Jennie Hehir and Tony Cogswell. Jennie has had the unenviable task of managing both the financial and organisational side of the association. Her tireless quest to further the association has been appreciated.

My main objective in my tenure with the MAA was to re ignite the issue of funding for the Association which has been Tony Cogswell's passion since 2002. Due to Tony Cogswell's unselfish attitude and passionate assistance we have come a fair way in pulling the Industry together and as a result he was the most worthy recipient of the Ian Hamparsum award this year and I am sure Tony's efforts will eventually be rewarded.



I welcome Harley Bligh, grower from the Condamine region in QLD as the incoming President for the association along with Bernie Walsh, grower from Leeton in the Riverina as Vice President. Tony Sawers, grower from Boort, northern Victoria has joined the executive along with, Rob Crowthers, Pioneer and Ken Haxen, Pac Seeds. Jennie Hehir has retired, and her position of CEO will be filled by Liz Mann. Liz is from Shepparton and has a background in Agronomy and the Processing Tomato Industry. I wish the new executive well and am sure Harley, Bernie and Liz will receive the full support of the Executive.



Harley Bligh
Incoming MAA President



Liz Mann
Incoming MAA CEO

In closing I wish all growers a successful season.

Keith Pickmere



**UNLOCK
YOUR
CROP**

 **PACIFIC SEEDS**

CORN HYBRIDS

pacificseeds.com.au

Developing versatile germplasm suitable for variable growing conditions



By Dr Solomon Fekybelu, Senior Plant Breeder, DEEDI Hermitage Research Station

Maize research programs around the world are putting more emphasis towards improved tolerance to

drought and heat stress. It has become clear that improving tolerance to environmental stresses like drought and heat stress is critical not just to improve reliability of maize production in marginal environments, but also to ensure efficient water use even under none moisture limiting conditions.

Improving resilience of maize germplasm without compromising yield potential or grain quality is a key goal of the maize germplasm development programs. The maize pre-breeding program which is jointly run by Queensland Department of Agriculture, Fisheries and Forestry (DAFF) and Grains Research Development Corporation (GRDC) has a strong emphasis towards sustainable productivity improvement under the changing climate patterns.

The DAFF program focuses on the development of germplasm adapted to Australian growing conditions and that meets the grain quality requirements of the maize industry. Every season, new germplasm is tested for a wide range of traits including agronomic suitability, disease resistance, productivity and drought tolerance. The program identifies germplasm that performs well both under favourable and non favourable conditions. Improved germplasm (elite inbreds) are then given to seed companies in Australia whose business includes the development and marketing of commercial hybrids to Australian growers.

This update highlights the results from the 2011–12 cropping season.

Grain yield variability

Trials consisting of up to 260 new crosses and commercial hybrids were evaluated across south Queensland, Hermitage (HRS), Burnett region, Kingaroy (KRS) and central Queensland, Emerald (EMR). Moreover, 81 hybrids and commercial checks that were tested in 2010–11 season were retested at Warra near Dalby in a spring planting.

The yield variability at Hermitage ranges between 6 and 10 t/ha, with an average of 8.2 t/ha. At Kingaroy, the variability was relatively wider. It ranged from 5–11 t/ha with a mean value of 8.5 t/ha. At Emerald, the yield level was lower than at both Hermitage and Kingaroy. The genotypes tested at Emerald yielded between 2 and 7 t/ha. The average value at Emerald was 4.8 t/ha.

The genotypes tested at Warra were a different set. They showed performance ranging from 6–10 t/ha with average value of 8 t/ha (Figure 1).

Promising germplasm for further work were identified on the basis of stability of performance across sites, agronomic characteristics and grain quality. Yield stability was quantified on the basis of the consistency of performance across sites. This is measured by computing a statistic called superiority index. Genotypes with highly variable performance between sites are less consistent and therefore have higher superiority indices or lower ranks. On the other hand genotypes with better consistency in their productivity across

the test sites have better overall rankings or lower superiority indices. In figure 2, the red dots represents the genotypes (260 entries) tested across three sites. Genotypes with higher superiority index (y-axis) have also lower average yield (x-axis) across sites. The selections chosen from this series of trials are shown in green closed circles. They fell closer to the highest yield values (x-axis) and lowest superiority index (y-axis) indicating they are not just high yielding but also stable across variable environments. The checks are indicated as ch1, ch2, ch3, ch4, ch5 & ch6. It's worth noting that two of the checks (ch3 and ch6) combine very good yield potential and stability.

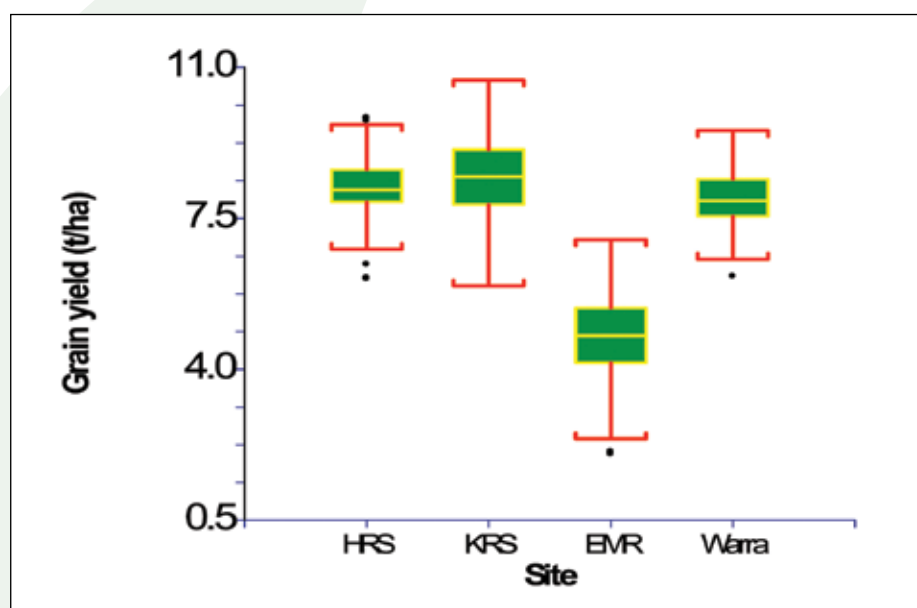


Figure 1. Grain yield variability of genotypes tested at Hermitage (HRS), Kingaroy (KRS), Emerald (EMR) and Warra (near Dalby) in 2011–12 season.

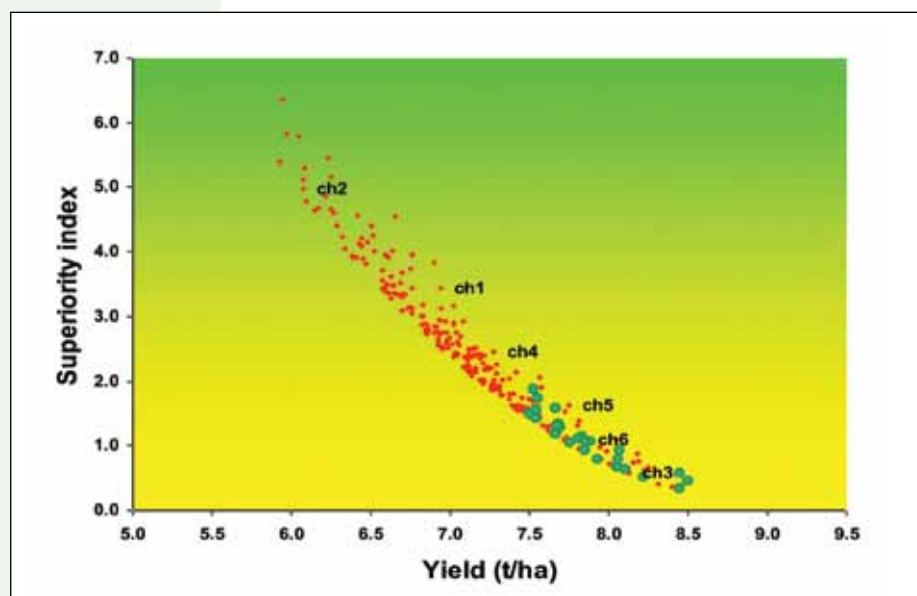


Figure 2. Plot showing stability of yield performance across test sites. Red dots are entries tested and green closed circles represent selections. ch1, ch2, ch3, ch4, ch5 & ch6 represent the six checks used in the experiments.

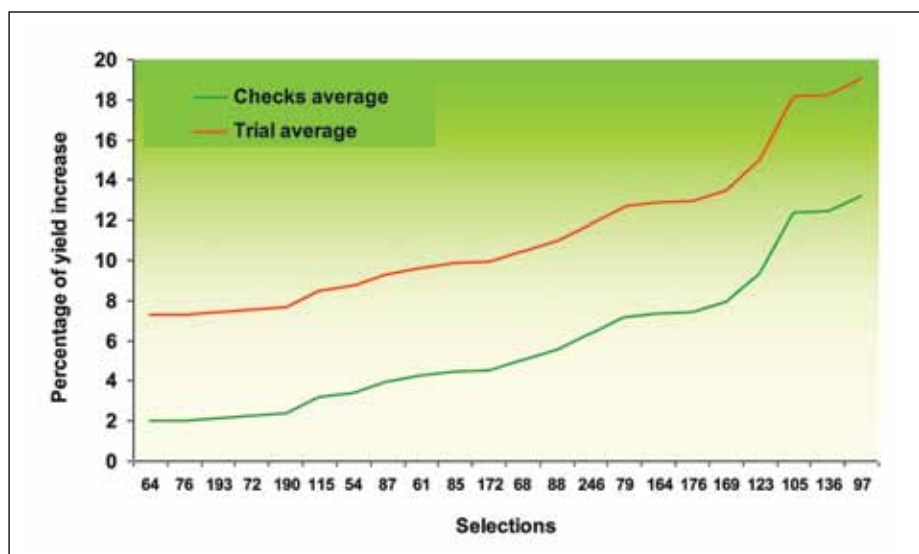


Figure 3. Percent yield increase of selections when compared to checks and trial average

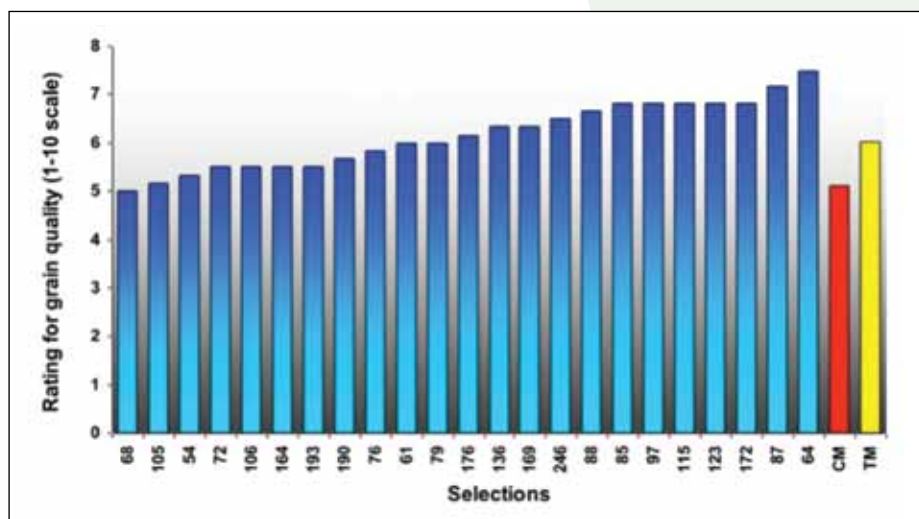


Figure 4. Grain quality ratings on 1-10 scale for selections made from across sites trials. CM= average of the commercial checks and TM = trial average. The dotted line is the cut off point.

Figure 3 shows the overall yield advantage of the selections made when compared to the check and trial means. Selected genotypes showed yield increase from 2 to 12 per cent over the checks average and 7 to 19 per cent over the trial average.

Grain quality

Selection of genotypes for further work is based on a combination of agronomic, quality and disease resistance traits. As a result, selections will have to fulfil minimum grain quality and other agronomic trait requirements.

A higher rating (rating ≥ 5 on 1-10 scale or better than the checks) will be required as the minimum benchmark for germplasm to have acceptable quality for processing, particularly for gritting. A score of 10 means bigger kernels with flinty texture, and a bright yellow kernel colour.

A rating of one simply means the grain is not suitable for gritting. Figure 4 shows the quality ratings for some selections at two sites, Kingaroy and Hermitage. Most of the selections shown had ratings ≥ 5 or better than the check mean (CM).

Future work

Selections will be further tested in collaboration with seed companies at different sites. Commercial lines will be developed with further breeding works and supplied to seed companies.

For more information about Queensland maize breeding research, contact Dr Solomon Fekybelu at DAFF Hermitage Research Facility, Warwick, on 4660 3661 or email solomon.fekybelu@daff.qld.gov.au



Queensland corn growers capture valuable export markets

Darling Downs corn growers toured Queensland Bulk Terminal in Brisbane on Friday to celebrate a bulk shipment of high-grade corn to Korea.

The vessel, 'Oriente Noble', was loaded with 12,000 tonnes of gritting corn produced by approximately 26 growers from the Darling Downs and Central Queensland. It will be milled and manufactured into snack food products for human consumption.

Bongeen grower Wayne Ziesemer worked with Philp Brodie Grain to contribute 2,300 tonnes of corn to the shipment.

"It was interesting to see the product loaded onto the ship. We have had a long association with Philp Brodie Grain and it's good to be dealing with them to meet a shipment such as this."

Mr Ziesemer runs over 1,600 hectares of cropping area, both dry-land and flood irrigation, supported by 2,000 tonnes of on-farm storage capacity. Corn and sorghum are his two main summer grains, and sales are split between domestic and export markets.

"On this occasion the logistics to port was managed through Philp Brodie Grain by road. For the hectic schedule we had to keep, it ran really smoothly. The carriers were also extremely co-operative," Mr Ziesemer said.

General Manager Philp Brodie Grain Tony Heckendorf said PBG's ex-farm service was used by many Queensland growers.

"The fact we can take care of the transport from the farm-gate is a real value-add to local growers: it's about creating efficiencies along the supply chain to create better returns for grower customers."

He said accumulation for the Wilmar Gavillon shipment was executed over ten days in tough conditions.

"It was difficult for growers to produce gritting-grade corn this year due to a very wet end to the season and high crop moisture."

"Only certain varieties of corn can be used for gritting and the kernels must not be cracked or discoloured."

"This shipment is testament to the expertise of growers across the Darling Downs and Central Queensland. Through difficult conditions they have produced a top quality product sought-after in valuable export markets."

The port's part owner Wilmar Gavillon has now taken custodianship of the vessel and its contents as it sets sail for a customer in Korea.



Left to right: Wayne Ziesemer (Grower, Bongeen QLD), Rob Crothers (Pioneer Australian Grain Corn & Sorghum Product Manager), Phil Jeffries (Wilmar Gavillon, Commodity Manager), Tony Heckendorf (GM Philp Brodie Grain), Ben Thrift (Pioneer Area Sales Manager, Central Darling Downs & Goondiwindi).



Jamie Crossing is very impressed with how PAC 607IT handles the weather extremes of his district.

PAC 607IT meets market specs after heat wave and flood

Liverpool Plains grower Jamie Crossing says that although meeting the specifications required by the feed corn market is not as rigorous as catering to grit corn specs, a tough season can still put him on the back foot.

Mr Crossing grew PAC 607IT corn last summer at Colly Blue, Spring Ridge, to supply feed mills and dairies around the region, but a heat wave and subsequent flood was not part of the plan.

"There was next to no rain from our early-October planting until Christmas - less than 30mm. We also experienced an intense heat wave throughout the summer."

"Then Christmas to New Years we probably had 35mm, and following this we had a flood - one event in January where 200mm fell," Mr Crossing said. To his delight, the corn emerged unscathed.

"We planted 120 hectares of the corn - 95 percent of which was irrigation and 5 percent was dryland."

"It was a very robust feed corn. The fact that it can handle those conditions is a testament to the hybrid's toughness."

Mr Crossing said the corn was harvested mid-April to return an irrigated yield of 11.5t/ha and went 5t/ha dryland.

"The grain quality was also excellent and there was no evidence of dead grain like other hybrids grown in the area."

Mr Crossing said the feed corn was then stored on farm before heading to processing at feed mills or to dairies as animal feed.

He said a combination of fertilisers helped him get the best out of the hybrid corn.

"The nitrogen component was made up of anhydrous ammonia pre-applied. I then applied more nitrogen during the crop's growth using fertigation through the lateral, and applied 100kg of triphos at planting with seed."

The corn was planted with an Excel precision planter with John Deere boxes, configured at 12 rows with 75 cm spacing at a seeding rate of 70,000 seeds/ha.

At-plant, a batch of Dual Gold at 1.5L/ha was applied and his in-crop spray was a mixture of Starane and Atrazine. It was also the first season he had used a miticide to control pests. "Miticide was registered for use in New South Wales for the first time last season, so we used that to keep the spider mite down to manageable levels." Mr Crossing said he was impressed with his PAC 607IT crop and will consider it again this summer. "The 607 stood up to the heat without a hassle and performed really well."

For further information contact your local territory manager or visit: pacificseeds.com.au

Your corn marketing needs covered

- Get access to domestic and export markets in Asia and the Pacific Rim
 - Take advantage of our integrated supply chain
- We can contract corn ex-farm, delivered and at selected Emerald Grain sites and private storers.

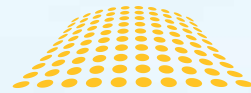
Contact your local office today



Northern NSW and Queensland

(07) 4690 6400

pbgrain.com.au



Southern Ag
GRAIN

Central and Southern NSW

1300 880 432

southernaggrain.com.au



Follow us twitter.com/EmeraldGrain



Proudly supported by

Emerald
GRAIN

Research proves benefits of corn in cotton rotation

Research conducted by NSW Department of Primary Industries has highlighted the benefits of including corn as part of a cotton rotation.

Principal Research Scientist, Dr Nilantha Hulugalle, of the Australian Cotton Research Institute, said the project was initiated to see whether the bulky corn crop delivered more organic matter to the soil.

It also followed anecdotal evidence from growers who had achieved higher yields from a corn/cotton rotation compared to a cotton/cotton rotation.

This scenario was tested last season by Dr Hulugalle by sowing back-to-back cotton and a cotton-corn-cotton sequence under conventional- and minimum-tillage (permanent beds).

The highest yield in that comparison was with cotton-corn-cotton minimum tillage with the cotton achieving 10.1 bales per hectare compared to the yield of cotton in the cotton rotation at 9.0 bales per hectare.

In the conventional tillage scenario, the cotton following corn produced 9.8 bales per hectare compared with cotton after cotton at 8.2 bales per hectare.

"The initial standout result is that the cotton treatment that included corn significantly outperformed their counterparts in yield," Dr Hulugalle said.

Yield increases in the corn rotation ranged from 12 per cent through to more than 21 per cent and added significantly to the gross margin, with an extra \$697 per hectare achieved in the maximum tillage scenario and an extra \$389 in the minimum tillage crop.

"It is looking very promising and the results were quite substantial," Dr Hulugalle said.

He said a lot of growers he worked with had mentioned corn was one of the best rotations and the trials backed this up.

"The results are just so striking," he said. "In all our treatments following corn, the cotton yields increased."

Included in the research was a study looking at the soil carbon numbers and the effects on disease by adding corn into the rotations.

Dr Hulugalle said soil organic carbon was higher after corn in the surface of on-farm sites in the MIA and Macquarie Valley. Similar results were also seen in the Namoi Valley during the previous season.

He said of particular interest was the increase in carbon in the subsoil in the ACRI trial, at depths of 60cm or more.

"A large proportion of the root mass of the corn crop goes to depths below 60cm and there is a significant increase in the amount of organic matter in these depths after corn."

"Another advantage of this rotation was that cotton root systems after corn went deeper and more extensive so were able to access extra moisture and nutrients."

"There was also a significant decrease in the black root rot numbers in corn. We suspect corn is controlling other diseases as well."

The success of the trial has led to a number of other projects being proposed for the near future.

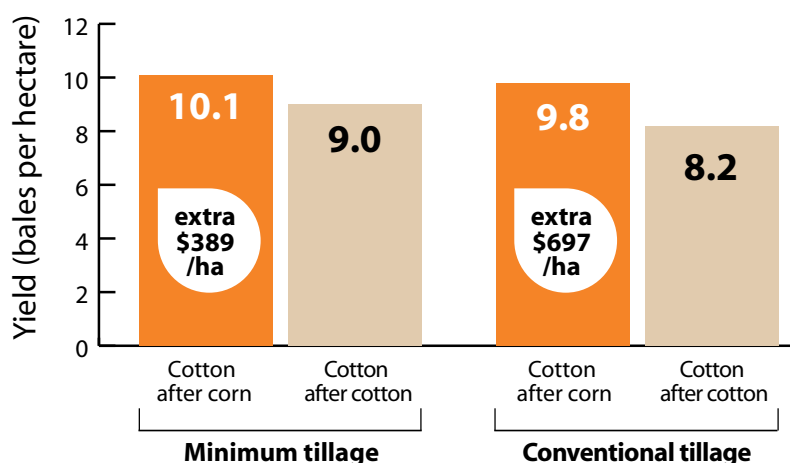
Dr Hulugalle said they would like to look at the deep subsoil carbon storage and also the interaction between soil fertility and soil fauna.

"Soil fauna influence litter and organic matter decomposition in soils and have an important role in ecosystem productivity."

He said adding another crop into the rotation caused changes to the type and amount of soil fauna and could be another factor in why corn works so well in a cotton rotation.

For further information contact your local area manager or call (07) 4637 3600 or visit www.pioneer.com

Corn in a cotton crop rotation



Summer grains vital to future farming in northern region

Northern growers are increasingly questioning the traditional model of wheat as a backbone to their enterprises, and planting more summer grains, including maize, due to favourable weather and market prices.

By Tom Dixon and Rachel Bowman

Northern region growers are increasingly questioning the traditional model of wheat as a backbone to their enterprises, instead relying more on summer grains as core crops in their farming systems.

Due to recent high prices and an increasing world demand, summer grains, including sorghum, maize, sunflowers, mungbeans and soybeans, are proving themselves to be profitable in their own right, and growers have planted record numbers this season.

"Rotations involving summer grains have become vital to the future of farming in the northern region," says James Clark, Grains Research and Development Corporation (GRDC) northern panel chair.

Rotations and careful crop sequencing are at the heart of managing major issues including crown rot, herbicide resistance and soil fertility decline in both summer and winter crops, says Mr Clark, speaking at the Australian Summer Grains Conference 2013 held at the Gold Coast in June.

"It is great to see summer grains becoming a profitable way to control weed and disease issues. We are looking forward to seeing more growers taking advantage of these benefits," he says.

Corn a diverse crop option on southern NSW property

The range of corn types and marketing options available has made it the major summer crop grown on the property of Bernie Walsh, at Yanco, in the MIA district of southern New South Wales.

Mr Walsh initially grew corn as silage for a local feedlot, but in more recent years has diversified the range to include feed corn, waxy corn, white corn and high amylose corn hybrids.

He said their initial experiment with corn for silage provided the confidence to have a serious look at growing the crop as a grain option. "I wasn't overly fond of silage because it was a big exporter of nutrients and compacted the soil." Among the corn grown last season was the DuPont Pioneer® hybrid 33V62 white corn which produced an average yield of 11.8 tonnes per hectare. "It is a good yielder and has good disease resistance," Mr Walsh said.

The grain from the crop was marketed through Lachlan Commodities, in Forbes, NSW with some of it sold to local company, Freedom Foods, to manufacture gluten-free products. Mr Walsh said it was a niche market product although there were some exciting opportunities through Asian destinations, such

Changing rainfall patterns good for summer crops

Grower Shaun Nolan from Roma says he currently splits his cropping program 60 per cent winter to 40 per cent summer to match the rainfall, with plantings dependent on prices and soil moisture.

"Summer rain in the Darling Downs appears to be increasing though," he says, "and we want to take advantage of the chance to do more summer plantings."

"Our operation is traditionally wheat- and chickpea-based," Mr Nolan says, "but recently we've moved to other crops like sorghum."

"Sorghum will play a larger role into the future in the north, particularly with more variability that our climate is showing at the moment," he says. Mr Nolan says conferences such as the 2010 and 2013 Australian Summer Grains Conference have been vital to his understanding of summer grain potential and allowed him to diversify his farm based on informed decisions.

Summer Grains Conference brings together industry

The Summer Grains Conference allowed growers to access the most up to date information from the summer grains industry to assist them in making the best choices on

as Korea, for white corn and other Australian corn types. "There's certainly a big market in Asia," he said. "I think our edge is the GM-free status. While we can market that I think there will be a market." "I also think the mandate for ethanol on the US has helped jack up the prices and put us a little bit more in the picture." Waxy corn hybrids have also been grown on the property for the past three years and last season, during hot and dry conditions, produced an average yield of 10.8 tonnes per hectare. During the previous two seasons the waxy corns were producing yields of up to 12 tonnes per hectare. Mr Walsh said the main waxy grown on the property was the DuPont Pioneer® hybrid 34N41 although he did have a small area of the new DuPont Pioneer® hybrid P1419E. "I've found 34N41 grows really well here as a variety although last season P1914E was one tonne to the hectare better." Included in the corn crop were some high amylose options and the new DuPont Pioneer® hybrid HA132.

"It does look as though it's going to be a winner," Mr Walsh said. "It was comfortably a tonne per hectare better than the old variety." He said the high amylose corn appealed to him because it went into the biodegradable plastics industry and was an environmentally friendly option. Corn on the property is normally



James Clark, GRDC Northern Panel Chair, addresses the Australian Summer Grains Conference

- Image copyright: Tom Dixon, Econnect Communication

crop rotations and maximise the benefits that summer grains can bring to their operations.

"Linking together all sectors of the summer grains supply chain including growers, agronomists, researchers, seed companies and marketers under one roof is very beneficial as it allows them to exchange so much information," says grower Rob Taylor. Mr Taylor is a summer crop specialist and floodplain farmer on the Darling Downs, and was on the organising committee for the conference.

GRDC chair Keith Perrett was at the conference and says "it's pleasing to see such a large number of farmers here at this conference, directly getting the information they require, including the latest knowledge from around the world."

planted from the last week of September and completed by the middle of October. "This allows us to get it off without drying the grain," Mr Walsh said. He said the beauty of corn was the wide number of maturities available which enabled him to change to a shorter-season variety if planting was later in the year.

The growing of corn has included a greater focus on marketing and the recent installation of three Twister silos supplied by Geronimo Industries in Cowra, NSW.

"They hold 930 tonnes of corn each and are fully aerated," Mr Walsh said. "I also bought an auger to fill them." He said the installation of the storage silos had been an important aspect in being able to market the grain at different times of the year and to different end users. "I think it gives me more security over my grain," he said. "I can call the shots to a degree."

The storage silos will likely lead to the inclusion of a soft yellow dent corn in the program this season to achieve higher yields and greater flexibility. Mr Walsh is a member of the Maize Association of Australia and said corn had an excellent place on many farms throughout the country. "If we can promote corn and the ability to make money out of it I think many farmers would have a second look at it. "It is a prescription crop and very simple to grow."

Lightning herbicide controlling key weeds in corn on Pilton property

The option of applying Lightning herbicide in the early growth stages of corn has helped control a number of key weeds on the property of John, and his son, Mick Ryan, at Pilton on the eastern Darling Downs in Queensland.

Mr John Ryan said weeds such as Johnson grass and Sorghum alnum were quite prolific in the area and difficult to target in either sorghum or conventional corn. "It's from growing continuous summer crop," he said. "The country gets dirty with Johnson grass."

He said spot spraying had been used regularly in sorghum in an attempt to control the weeds and since 2008 corn with the imidazolinone-tolerant (IT) trait has also made a big difference to the summer crop weed control.

IT corn can be used in conjunction with Lightning herbicide as a post-emergent option and helps control a range of problem weeds.

"Lightning is certainly very handy," Mr Ryan said. "It does a good job in knocking out the weeds. Otherwise you would have a jungle out there. I'm quite happy with Lightning."

It is a handy tool." The Lightning herbicide is normally applied quite early after crop emergence to get good control over a wide range of grassy and broadleaf weed species. "We try to get it on early," Mr Ryan said. "The earlier the better."

Corn grows very quickly and so the ability to target weeds when they and the crop are reasonably small is quite important.

A water rate of between 90 and 100 litres per hectare is also used to ensure good coverage of the herbicide across the weeds. "Coverage and timing is very important," Mr Ryan said.

He said Lightning herbicide also worked well in a crop rotation with the IT-corn often fallowed through to a soybean crop.

There are also options for a Clearfield wheat variety to be direct-drilled into the corn stubble if conditions are favourable.

Last season, the Pioneer® hybrid P1813-IT corn was planted in mid-October and survived 10 to 12 inches of rain which fell around Australia Day to yield well.

Mr Ryan said at harvest the P1813-IT averaged 2.7 tonnes per acre (6.67 tonnes per hectare) in a very good result in a paddock that had also contained corn the previous season. "The early corn yielded as good as the sorghum around the place."

Corn also did not have any of the grain quality issues associated with sorghum due to the wet conditions. The rainfall helped break down any residual from the herbicide and he was able to double crop barley immediately after the corn.

Mr Ryan said the area suited corn production and its inclusion on the property helped to split the harvest and alleviate pressure on the grain storages. With smaller hectares of any crop they plant than in cropping areas, growing corn and other summer crops is the most profitable approach on John and Mick's farm.

Last season the P1813-IT was sown at a rate of 35,000 seeds per hectare into 36 inch (90cm) row spacings. Anhydrous ammonia was used as fertiliser and the paddock also receive regular applications of manure from the on-farm feedlot. Zero-till technology is implemented on the property although cultivation is also used when required.



Quick maturity corn yields big in tough season

Victorian grower Snow Bramley first planted quick maturity corn variety PAC 301 in a 2011 trial, and after seeing the results, decided to dedicate more land to the corn last season.

Little did he know that the summer of 2012–2013 would be one of the harshest on record.

"It was the toughest corn growing season. It was really dry, extremely hot, windy, and we had heat stress," Mr Bramley said.

Rain for the month of October was 28mm, at sowing time in November none was recorded, December saw 6mm fall and January experienced just 4.5mm.

Luckily the 22 hectare paddock at Sawers Farms, Boort, was on a flood flat and received regular irrigation.

"We planted on November 10, watered it up with flood irrigation and flooded it every nine days, which worked well for us."

Mr Bramley managed a yield of 14.9t/ha when the crop was harvested mid-April with a John Deere header with a 12 row corn front.

"For a late planted crop in one of the driest seasons we've had in a long time, we were very impressed with the yield."

Mr Bramley said PAC 301 was primarily chosen for its short season suitability and for its consistent high grain yield which ended up in the stock feed market.



Snow Bramley of Boort, Victoria in Pac 301 corn last season.

The farm also plants PAC 625 for the longer season.

He said due to the late start, they upped the sowing rate to 92,000 seeds/ha from 85,000 seeds/ha.

"We then spread one tonne per hectare of gypsum. Our base fertiliser was 200kg/ha of MAP, then we drilled in 170kg/ha of MAP with zinc as a starter fertiliser and added 200kg/ha of urea."

During growing season, a further 300kg/ha of urea was added through irrigation.

Primextra at 3.2L/ha and Dual Gold at 1L/ha controlled the weeds, while Lorsban insecticide was used at 1L/ha to combat wireworm.

The farm used a John Deere MaxEmerge seeder at 76cm row spacings to get the seed into the ground and the corn emerged on November 24.

Mr Bramley said PAC 301 was one of the

better varieties he has seen come out of the Sawers Farms program, and they intend to plant more this year.

"For a quick maturity, PAC 301 has excellent yield and appeared to handle the heat better than some of the other varieties we grew last season."

For further information contact your local territory manager or visit: pacificseeds.com.au



Lightning®

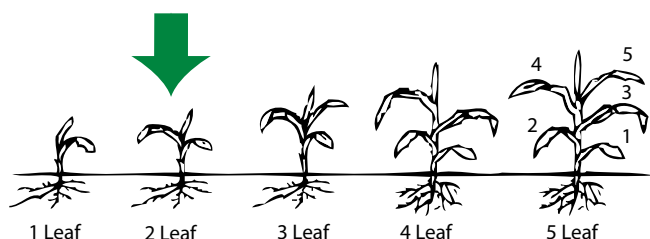
Herbicide for Clearfield® Maize

Clean, high yielding maize... Easy.

Timing – the key to success

To maximise the value in the Clearfield® maize system in terms of weed control and yield potential, apply Lightning® herbicide when maize is at the **two leaf stage**. Don't wait for all the weeds to emerge! Lightning controls a wider spectrum of weeds **BEFORE** they germinate compared to applications made after they have germinated. Applications should not be made later than the crop 6 leaf stage.

Arrow showing best application timing for Lightning Herbicide.



Key Weeds Controlled

Controls broadleaf and grass weeds including:

- > boggabri weed
- > turnip weed
- > anoda weed**
- > barnyard grass**
- > caustic creeper**
- > crowsfoot grass**
- > Johnson grass (seedling only)**
- > ground cherry
- > wild gooseberry
- > nutgrass**

** Surviving plants will generally be retarded and will not compete with the crop.

Key Product Benefits

- Early post emergent weed control means higher yield potential.
- Broad spectrum, one pass knockdown and season long residual control of broadleaf weeds and hard to kill grasses including Johnson grass (seedlings) and nutgrass.
- Stable in soil and does not leach out, therefore reducing risk of entering waterways.

Lightning Herbicide

- ⚡ is a Group B Herbicide.
- ⚡ is WG formulation (water dispersible granule), making it safe to use and highly concentrated, requiring low rates per hectare.
- ⚡ 1 kg Packsize treats 8-10 Hectares.

Application Checklist

- Rate 100-125g/ha
- Read the product label
- Apply at maize 2 leaf stage

Apply in a minimum of 100 L water /ha. MEDIUM to COARSE droplets. Check paddock history and re-crop plan.

Clearfield and Lightning are registered trademarks of BASF.

Managing for nitrogen deficiency in Central Queensland

By Robbie Mitchell and Tom Dixon

Central Queensland farmer Colin Dunne has been growing maize as part of his mixed farming business for 15 of the 30 years he has been farming. In this time he has not needed to apply nitrogen fertiliser, which is a standard practice for most Australian grain growers.

"I've trialled fertilisers several times, but always found that we had enough natural nitrogen in our soils for it to not be profitable," said Colin.

But things are changing in and around the small town of Duaringa, 100 kilometres west of Rockhampton, Queensland, where Mr Dunne farms. This natural store of nitrogen is slowly being eroded to the point where farmers will need to apply nitrogen fertilisers to make cropping profitable.

"This year will be the first in 30 years I've had to apply nitrogen and I'm expecting it to not be the last," he said.

A growing problem

Maurie Conway, a research technician with the Department of Agriculture, Fisheries and Forestry, Queensland, has worked in the Central Queensland region looking at the effects of soil nitrogen for more than 20 years. He explained that nitrogen deficiency is a growing problem throughout Central Queensland, caused by a number of factors.

One factor is that cropping is relatively new to the area. "Because large scale cropping of brigalow soils did not commence until the 70s-80s, growers have been able to rely solely on the natural nitrogen in the soil," said Maurie.

"However, every crop we harvest is slowly eating away at this natural bank of nitrogen. This has a lot to do with crop choice and how intensely we farm these days.

"Higher yielding crops need more nutrients, and the number one nutrient they require is nitrogen," he said.

Another more recent factor that contributed to large losses of soil nitrogen were the floods in the region since 2009.

"Over the past five years, the region has experienced above average rainfall particularly during summer, resulting in three floods," said Maurie.

"As a result of these floods we've experienced large losses of nitrogen through denitrification."

At some sites, more than 80kg nitrogen per hectare (as nitrate) was lost from soil profiles during prolonged water logging.

Summer floods denitrifying the soils

In Duaringa where the Mackenzie and the Dawson Rivers meet to form the Fitzroy River,

Colin Dunne's low-lying land, and summer crop, was under several meters of water for weeks.

"We tend to get big floods like that once every ten years and have learnt to deal with them," said Colin.

"The immediate impact of the flood is always disastrous but we're now finding the legacy is just as significant as the impact."

Colin was not put off by the floods though, and he is planning to plant 500 hectares of maize in the coming season.

"It's all part of farming. What we've learnt is to remain flexible and focus on the opportunities at hand," he said.

Central Queensland's favourable climate gives Colin the opportunity to plant and grow crops any month of the year.

"I normally grow corn (maize) during summer but I'm lucky enough to have the option to grow it during spring," he said. "I'm more likely to grow corn over sorghum in these alternate months as come harvest time, corn is more durable in late season rain."

Mung-bean rotations boost maize crops

Colin also uses mung beans in rotation with maize to add nitrogen back into the soil.

"I've had success over the years with mung beans because you can harvest them before the wet and then plant corn straight into them," he explained. "The added bonus, which I'm more interested in now than in previous years, is they don't need much nitrogen to grow."

Maurie Conway said that legumes have become a key part of soil nitrogen management within Australian farming systems. Legumes form a mutually beneficial association with soil bacteria called rhizobia — these rhizobia fix atmospheric nitrogen and convert it into ammonium, putting nitrogen back into the soil.

"More legume crops in the system, particularly a nitrogen deficient system, are good because they don't need nitrogen inputs, and can leave nitrogen for the subsequent crop," he said.

"This isn't to say legumes will solve all your problems, but they will go a long way in helping to manage the problem in a cost effective and profitable way."

Mr Conway adds that it's also important that growers use nitrogen fertiliser and learn how best to apply it.

"For example, infrequent and sometimes ineffective in-season rainfall events combine with the clays of the Northern Region and limit opportunity to top-dress nitrogen," he said.

"A smart fertilising-program, combined with rotating legumes through your system, will improve your yield, maximise your water use and save you money on input costs."



Colin has been farming for 30 years, 15 of those he has planted maize. He says this is year is the first time he has ever had to apply nitrogen fertiliser to any crop. Image copyright: Colin Dunne, 2011



Colin grows mungbeans and chickpeas to manage for nitrogen deficiency. Legumes don't need a lot of nitrogen to grow and in some case leave nitrogen for the next crop to use. Image copyright: Econnect Communication, 2011



For three of the past five years, Colin's summer crops have been flooded. These floods have accelerated the loss of nitrogen in his soils. Image copyright: Econnect Communication, 2011



capello



CAPELLO CORN FRONTS : A GENERATION AHEAD

Capello Corn Fronts can be fitted to any Harvester and are available in a full range of models, either fixed or folding. They offer a high harvesting speed and a limited loss of cobs and grains in any operating condition.

HIGHER PRODUCTIVITY

The casing and the hoods are made of a polymer which allows coarse material input and flow easier, leaves and stalks glide and do not stick even in bad weather.

MINIMUM LOSS OF COBS AND GRAINS

The new fitting absorbs the cob impact. Cobs do not bounce, and the loss of material and husking are drastically reduced.

ROBUST BUT ALSO LIGHT

The weight of the polyethylene casing is one third that of the metal version and provides for a decidedly higher elasticity and strength in case of shock.

NO SUPERFLUOUS WEIGHT ACCUMULATED

In the version equipped with stalk cutter the engineering resin prevents the shredded product from sticking to the bottom of the casing, and prevents it from piling up.

DIFFERENT WORKING ANGLES

An exclusive adjusting system allows the setting of the hoods in as many as 6 different positions.

MAXIMUM DURATION, MINIMUM MAINTENANCE

No corrosion or discolouration problem. A light casing with easy access make regular maintenance operations easier.



SMALL AND SAFE ON THE ROAD

Folding models convert from a working width of 6.5m down to only 3.20m in just two minutes: the new Corn Fronts are large and fast even when they are not in motion. In fact they fold quickly and require little space.

Excellent visibility and perfect driving stability thanks to an evenly distributed weight make displacements and manoeuvres easy, fast and safe.

INNOVATIVE BY DESIGN



Neil's Parts
Australia

1800 463 457

Freecall - Even from Mobile Phones

www.neils.com.au

Outsmarting weeds – beyond herbicides in cropping

By Alison Binney and Tom Dixon

At a glance:

- *Herbicide-resistant weeds represent the single largest threat to Australian and global food security and cost the Australian grains industry more than \$200 million each year, according to the GRDC*
- *Six weed species are now confirmed to have glyphosate-resistant populations across Australian cropping systems*
- *There is 'no silver bullet' for weed control. An integrated approach is required—combining mechanical, chemical and cultural (i.e. farm-management) changes*

Herbicide resistance is being spurred on in Australia because growers still have effective herbicide options available to combat weeds.

But this won't be for long, according to Grain Orana Alliance (GOA) chief executive officer Maurie Street.

"With many northern farming systems evolving to continuous crop systems with nearly 100 per cent reliance on herbicides, resistance at any level is likely to hit hard," he says.

"We need to start looking at new techniques for weed control—we shouldn't be expecting or relying on new herbicides to fix the problem."

Weed resistance is wide spread across southern and western parts of Australia. It is now moving to northern cropping areas. Researchers say that growers need to proactively 'look beyond herbicides' to reduce the spread of resistant weeds.

Candidate weeds in maize

Jim Pratley, Research Professor of Agriculture at Charles Sturt University in Wagga Wagga, says he is unaware of any resistant weeds in maize in Australia, 'but there are candidate weeds to be cautious about'.

"Echinochloa species (Junglerice and barnyard grass), liverseed grass and fleabane he says, have been found resistant to glyphosate. Sow thistle has been found resistant to Group B herbicides. And Johnson grass, he says, has been found resistant to the Group A herbicides in countries outside Australia.

"Where maize is grown in winter cropping zones—mainly under irrigation—there are numerous winter weeds with resistance, but these probably do not affect maize which

grows in summer," Jim says.

"Overseas much of the maize is GM (genetically modified—Roundup Ready) and so there is a buildup of glyphosate tolerant weeds. We don't have GM varieties in Australia so that threat is minor at this time.

"I think we haven't seen resistant weeds in maize as maize tends to be rotated with other crops and so other herbicide groups are used on the other crops," he says.

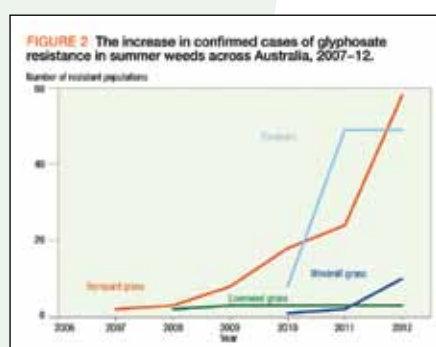
But he also says that if the herbicide chemistry fails, Australian farmers face a major challenge.

Advice is to 'mix it up'

Glenn Shepherd from Dubbo-based IMAG Consulting says that the commonly promoted approach to herbicide resistance, through herbicide rotations, does not actually prevent resistance.

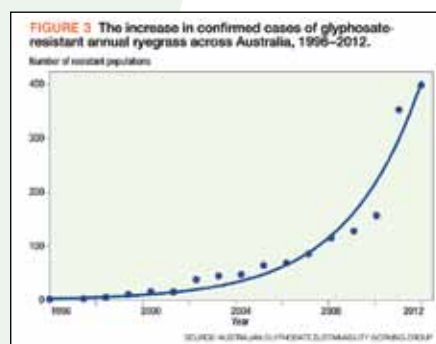
"It just slows down the rate of development of resistant weeds," he says.

Glenn says farmers entering the industry now would be the first in about 30 years with no access to chemicals to control some of the problem weeds on their farms.



Confirmed cases: The increase in confirmed cases of glyphosate resistance in summer weeds across Australia, 2007–2012

Photo: GRDC Ground Cover Herbicide Resistance Supplement; March–April 2013 edition.



Dangerous trend: The increase in confirmed cases of glyphosate-resistant annual ryegrass across Australia, 1996–2012

Photo: GRDC Ground Cover Herbicide Resistance Supplement; March–April 2013 edition.

"We need to develop novel solutions to weed problems to complement and extend the life of current practices and the effectiveness of herbicides," Glenn says.

Weeds eventually become resistant to any form of control, be it mechanical, chemical or other, according to assistant professor Greg Kruger, a cropping systems specialist at the University of Nebraska.



Newest problem: Featertop Rhodes grass has become an increasing problem over the past three years in the northern grains region, particularly the Darling Downs.

Photo: Tom Dixon, Econnect Communication

Professor Kruger was a keynote speaker at a GRDC northern region research update in April.

"Resistance comes in multiple forms," he says.

"For example, if you use only mechanical weed control and slash weeds down, you end up selecting for weeds which either don't grow as tall or germinate much later.

"If a grower sprays out weeds, there are problems with herbicide resistance evolving. Growers across the US and certain areas of Australia are seeing a massive increase in herbicide-resistant weeds," he says.

"By combining strategies and using a mix of mechanical and chemical weed control methods, you delay the evolution of resistant weeds."

Cultural controls such as varying row spacing, sowing date and varying plant population to encourage crop competition are also important.

The key to successful weed management, Dr Kruger says, is using a combination of chemical, mechanical and cultural strategies – herbicide application, crop rotation and mechanical weed removal.

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 the maize industry should be aware of, 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 2012-2013

Liz Mann	CEO - MAA	PO Box 2293 Shepparton Vic 3632	0427 857 578	lizmann.ag@gmail.com
Harley Bligh	President	Grower Darling Downs	07 4693 0160	harleysb@bigpond.com
Bernie Walsh	Vice President	Grower Riverina	02 6955 7110	walshfarms@bigpond.com.au
Tony Cogswell	Industry	Lachlan Commodities, CW NSW	02 6851 2077	tony@lachlancommodities.com
David Lobwein	Farmer-maize grower	Dalby, SE Queensland	07 4668 0263	davidlobwein@bigpond.com
Rob Johnston	Industry	Pacific Seeds, Toowoomba QLD	07 4690 2618	rob.johnston@pacseeds.com.au
Damien Courtier	Research & Advisory	Snowy River Seeds, VIC	03 5154 1878	damien.courtier@hrsseeds.com.au
Steve Wilson	Research & Advisory	Pioneer Hi-Bred Australia, QLD	07 4630 1155	stephen.wilson@pioneer.com
Ben Hardy	Grain Merchant	Philp Brodie Grain, Toowoomba	07 4690 6400	bhardy@pbgrain.com.au
Tony Sawers	Grower			tsawers@sawersfarms.com
Rob Crothers	Dupont Pioneer Australian	Grain Corn Product Manager	07 4637 3600	rob.crothers@pioneer.com
Ken Haxen	Pac Seeds	Product development Specialist	0428 756 372	ken.haxen@pacseeds.com.au

Maize Association of Australia Incorporated

ABN 1650 790 2551

Membership Application 2013 for membership based on the calendar year ending December 2013. 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** \$110.00 per year

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

Name.....

Company/Organisation.....

Address.....

Town/City.....State.....Postcode.....

Telephone.....Fax.....

Email.....

Please cut out this form and return it with your cheque to:

**Maize Association of Australia,
PO Box 2293, Shepparton Vic, 3632**

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

Direct Credit

Please enter your name and invoice number when paying by direct credit

Account name: Maize Association of Australia
BSB: 032 750
Bank: Westpac
Account: 25 7709
Branch: Banna Ave, Griffith

*Thank you for supporting the MAA -
YOUR industry association
www.maizeaustralia.com.au*



MORE OPTIONS

**Maximise yield for every hectare and megalitre
with corn seed from DuPont Pioneer.**

Whether you need more silage for your dairy herd or a high yielding, high return grain crop, corn is the ideal option.

Simple to grow and backed by world-leading seed genetics and agronomic support from Pioneer.

Plant with confidence.

www.pioneer.com

