



Australian maize industry developing relationships with Asia

By Keith Pickmere

A Maize Industry visit to Japan and Korea has recently been completed with the assistance of the Queensland Department of Trade and Investment, G.R.D.C., Lachlan Commodities and the Maize Association of Australia.

The mission involved business meetings with key importers, buyers, millers, and end users with the following objectives:

- To develop relationships with the Maize milling and manufacturing industry in both countries.
- To provide insight into potential new customers, of the services and quality products the Australian maize industry can deliver.
- To gain a better understanding of the supply chain.
- To increase exports.

Nine participants including four growers (two from the Riverina and two from the Darling Downs), Pacific Seeds, Qld Govt, the Maize Association of Australia, and exporters (Lachlan Commodities) proved to be a well rounded representation of the Maize industry that were able to present the industry in a very positive perspective to all those who they met.

During the tour we participated in a total of 14 meetings, 2 networking functions, the inspection of unloading facilities and silo storage at two import terminals, three wet mills, three dry mills and viewed products in a Japanese supermarket.

Wet Milling

This highly technical and energy hungry process produces a wide range of Corn products including various corn starches for use in paper manufacture, brewing, pharmaceuticals, and sweeteners such as Maltose, Dextrose, and High Fructose Corn Syrup (HFCS) used largely in the soft drink industry for its ability to withstand high temperatures without separating out.

Corn oil is a by product of this process.

An interesting point was the water use of an average size plant in Japan was 11000 ML per year with little or no reuse. Water is discharged into the ocean after use.

When questioned why water was not re used the answer was that Japan had an abundance of water.

Dry Milling

This process involves the removal of the outer skin of the maize kernel and also the Germ (which is used to produce hominy meal).

The remaining kernel is then milled a number of times to produce different "grit" and flour products for the food industry from snack-food, corn flakes, to corn flour and hominy feed (stock feed, pet food and mushroom growing).

Economics and Import Issues

One Dry Miller in Japan holds a 45% market share and imports 170,000 tonnes of GM free maize annually for maize grits. Japan uses 100% GM free maize sourced mainly from the United States and Brazil for dry milled products. In the USA and Brazil however, 90% of all maize produced is GM and this is of great concern to Japanese millers.

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Konan Futo Grain Terminal



Mycotoxin Seminar September 1 Toowoomba

Australian maize, whilst having GM free status and a good record of high quality must however be competitive with its U.S. competitor (which is very dependent on currency rates). These were the recurring themes coming from the majority of processors we met both in Japan and South Korea.

Summary

We believe there is an opportunity for Australian farmers who are willing and able to produce GOOD QUALITY maize whilst achieving acceptable yields to benefit from increased export opportunities to these countries whose demand for maize based beverage and snack food additives is growing rapidly.

The single most important message we ALL received from meeting with the Japanese and Korean millers was Australia's GM free status.

- Millers and manufacturers are well aware that sourcing GM free product is becoming increasingly difficult in the America's.
- GM free product is being sourced from Hungary and Serbia. Quality however is poor from both these nations.
- French product is too expensive and therefore does not compete.
- Millers are pleased with the Australian product as long as we remain competitive with the U.S.
- There is an increasing demand for GM free product in both countries.

It is therefore paramount that we as a present and future maize exporting nation remain this way.

One of the major problems for Australian growers to be competitive with the USA is not only the lack of Government subsidies, but also the ever increasing cost of transport and lack of logistical capacity for maize, e.g. the availability of food quality containers for export and the bulk loading facilities willing to handle maize segregations.

Recognition

I would like to personally thank the GRDC for its generous sponsorship which allowed 5 participants to join the delegation and get a different perspective of their industry.

Also the huge effort and generosity shown by The Queensland Govt Trade and Investment for providing the tireless effort of Nick Edols and the interpreters who made everything understandable.

Lachlan Commodities for their generous sponsorship and connections in both countries without which the tour would not have been possible.

And finally a big thanks to Jennie Hehir for her tireless effort to pull the loose ends together.

I am convinced that we all returned from this tour much the wiser and only time (and good weather) will tell if we have been successful in ensuring that Australian Maize will be targeted by importing countries in North Asia as a preferred source of quality GM free product.

Keith Pickmere.
President M.A.A.



Seminar details

Where: Picnic Point - "Tabletop" function Room, Toowoomba - www.picnic-point.com.au

Address: 164 Tourist Rd, Toowoomba QLD 4350

When: Thursday September 1

Time: 10.00am - 2.30pm:

Coffee, tea and freshly baked biscuits available on arrival. Lunch will be provided.

Presenters:

Professor Wayne Bryden
Professor of Animal Science,
University of Queensland

Dr Graeme Wright
Peanut Breeding, Seed & Innovation,
Peanut Company of Australia

Seminar content

This seminar will cover:

- Introduction to mycotoxins
- Mycotoxins in Australia
- The impact of mycotoxins on human and animal health
- Testing for Mycotoxins
- Case study: Addressing Mycotoxins throughout the Peanut supply chain
- Mycotoxin Question and Answer session

Accommodation

Contact Toowoomba Tourism on - 1800 688 949

Book your seat now

Contact Craig Moore of Graittec Scientific on (07) 4638 7677 or email craig@graittec.com.au

Cost

\$295 (incl GST) per person

AIFST members = 10% discount

SMFCA members = 10% discount

3 or more people from same company
= \$249 (incl GST) per head

*Maize Association
of Australia
Annual General Meeting
Date: Tuesday 20th
September 2011
Time: Commencing 9.30am
Location: Floor 4
Primary Industries Building
80 Ann Street - Brisbane*

Australian maize industry developing relationships with Asia



Palace visit just before travelling to the airport to return to Australia



Traditional Korean gayageum playing at dinner hosted by Dongil Grain



Rob Johnston at Hankook Goksan



Dinner hosted by Dongil Grain Korea



Dinner hosted by Mitsubishi



Seto Futo Port Facility

Corn for cotton decision a success

A decision to swap cotton country for corn based on long-term forecasts proved successful for Phillip Clapham, at Brookstead, on the central Darling Downs in Queensland.

Mr Clapham grows corn under irrigation each season and last year swapped cotton paddocks that were more at risk of disease, over to corn.

He said the La Nina forecast was for a wet and cool season which suited corn.

"Instead of going overboard with cotton, I went to corn."

The bulk of the corn area was planted to Pioneer® hybrid 32P55, although the plant did include some Pioneer® hybrid 31G66 and Pac 424.

Initially the intention was to irrigate the corn; however wet weather through November and December and some flooding, meant watering wasn't required.

"Last year was the best corn crop I've ever grown - and there wasn't any irrigation water," Mr Clapham said. The farm average from the corn was approximately 11.5 tonnes per hectare and included some crops that were damaged by hail.

"Where we didn't have hail damage the yields exceeded 12 tonnes per hectare," Mr Clapham said.

A strip of 32P55 corn was tested with a weigh-bin and produced a very high yield of 13.7 tonnes per hectare.

Mr Clapham said the yields were very good, with the corn crop also able to make the most of some flood events which hit the property in late November and December.

Floodwater came through some paddocks at just below the height of the corn cob, at a stage where the crop was filling the grain.

"The timing of the flood events suited the corn," Mr Clapham said.

He said at the same time the sorghum was flowering and the cotton was going into a growth stage and did not see the sun for six weeks.

When the rain finally finished disease pressure was quite high with all crops although the corn did produce grain of good quality under the circumstances.

Some of the 32P55 grain was sold to processing markets.

The success of the corn was also aided by the planting date, with the bulk of the crop sown in early September and quite advanced when the wet weather was received.

An irrigation planting rate of 65,000 seeds per hectare was used into one metre row spacings and much of the nitrogen was applied at 200 kilograms per hectare to the paddock prior to the crop being sown.

Mr Clapham said they lost some of the nutrients to flood water and wet weather and so made the decision to fly on an additional 100 to 150 kilograms of nitrogen late in the season.



Phillip Clapham of Brookstead, on the central Darling Downs, in Queensland produced high yields from corn last season.

He said this approach worked really well and the yield difference was quite noticeable in areas where the aerial nitrogen was not applied.

Most of the corn country had contained cotton the previous year and will be rotated back into cotton late in 2011.

The good rainfall and early corn harvest meant the majority of the corn paddocks had a full profile of moisture going into winter.

Corn an excellent rotation option

Corn provided a successful rotational option for Rowan Bennett on an Auscott property, north-west of Narrabri, in northern New South Wales.

Mr Bennett said they were looking for an option to provide a high return per megalitre of water and a break crop that would benefit cotton the following year.

They planted 56 hectares of Pioneer® hybrid 32P55 on September 5 last year at a rate of 68,000 seeds per hectare and it established at approximately 58,000 plants per hectare.

The advantages of corn as the rotational option on the property included its ability to be planted very early in the summer crop season and receive the majority of its water requirements prior to the cotton.

Mr Bennett said corn also added organic matter to the soil and there was evidence that the yields of the following cotton crop could be increased by up to a bale per hectare by using corn in the rotation.

He said, while cotton was the priority crop for the company, the success of corn last season meant it will be planted to a further 200 hectares this year. The 32P55 produced an average yield of 12.84 tonnes per hectare and made the top grade in a processing end use market without any cracked or ruptured kernels.

"It had nice big kernels," Mr Bennett said. "Some of the best I've ever seen."

He said it was harvested on February 3 and 4 this year and the yield was probably up to 13.3 tonnes per hectare, although issues with the header meant some was left on the ground.

The corn grain had very little screenings and was sold for \$185 per tonne which provided a net return of \$2081 per hectare.

Mr Bennett said the return was not too far behind cotton and he believed by increasing the population establishment and by improving management and harvesting, it could be as profitable as cotton if commodity prices remained stable.

Last season nitrogen at 200 kilograms per hectare and phosphorous at 44 kilograms per hectare were applied pre-plant and 100 kilograms per hectare of nitrogen was water run into the crop through until a week before tasselling.

The corn was grown under a lateral spray and received just 1.5 megalitres per hectare of water during the cooler growing season.

In a drier year approximately 4 to 4.5 megalitres per hectare of water would be required to grow the crop. Next season, Mr Bennett plans to bring the corn planting date forward into August in an attempt to beat the heat at pollination.

He will also increase the plant population to establish at least 65,000 plants per hectare.



Auscott Narrabri agronomist, Rowan Bennett, and assistant agronomist, Bill Back, had good results with Pioneer® hybrid 32P55 corn last season.

Corn will be used in conjunction with cotton in adjacent lateral irrigations so the water for the first crop will be used prior to the needs of the second crop.

Mr Bennett said a yield of 13 tonnes per hectare or more and good commodity prices will ensure corn is a profitable break crop into the future.

Understanding the maize growing environments in Australia

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

The success of a breeding program depends on clear understanding of the target environments and stress factors affecting productivity and reliability of crop productivity.

Traditionally, plant breeders use multi-location trials to assess performance of test genotypes relative to commercial standards. Results are often used to understand relationships between sites/seasons and to characterize production environments.

This approach, however, has practical limitation since it is impossible to consider all potential production environments. In some cases, the trial sites may not be representative of the diverse production environments. This therefore results in poor characterization of the environments and difficulty in understanding the type and frequency of stress types in the target environments.

More comprehensive approaches to characterizing environment using crop simulation models have been developed in recent years. This has been successfully applied in various crops such as wheat and sorghum. This system integrates climatic, soil and crop management factors to understand the environments. It helps identify the type and frequency of drought stress limiting crop productivity. Using checks, it is possible to identify the best management and genotype combinations that are more appropriate for a specific environment.

Crop simulation modeling in action

As part of the Sustainable Intensification of Maize-Legume cropping systems for food security in Eastern and Southern Africa (SIMLESA), an Australian Centre for International Agricultural Research (ACIAR) funded project is leading the way in new maize research.

The environment characterization project studies maize growing environments (site and soil combinations) from Queensland and northern New South Wales (NSW), which are characterised from 110 years of climatic data. The project aims to understand the maize growing environments, and identify the best genotype by management combination for target environments. This project is started in 2010 and ends in 2013.

As part of SIMLESA project, this work is being carried out by Drs Solomon Fekybelu (DEEDI Hermitage Research Station, Warwick) and Yash Chauhan (DEEDI Kingaroy Research Station). The project leader is Dr Daniel Rodriguez from QAAFI (University of Queensland's Alliance for Agriculture and Food Innovation).

Simulations were carried out using the Agricultural Production Systems Simulator (APSIM) modelling frame work. Environments were clustered on the basis of their yield potentials. Stress types and frequency were determined through cluster analysis of the ratios obtained from water supplied by the environments to water required by maize around flowering (water supply/demand ratios).

In Figure 1, most of the maize growing environments from much of the interior of Queensland, and northern NSW were grouped together in cluster 4. About 47% of the maize growing environments (sites/soil combinations) belong to this cluster.

Cluster 5 represents nearly 25% of the environments characterized, and represents sites and soils from southern Queensland and some areas from northern NSW.

A relatively smaller number of environments were represented in clusters 1 and 2. The sites and soils represented in clusters 1 and 2 are all from relatively high rainfall areas of north Queensland (Figure 1).

The simulated yield for each cluster of environments is shown in Figure 2.

At 90% probability, yield will be greater than or equal to simulated yield in nine out of 10 years. At Atherton tableland (cluster 1) for example, yield is expected to be more than 7 t/ha in nine out of 10 years. In cluster 4, however, yield will be less than 1 t/ha in nine out of 10 years. At 10% probability level, yield will be greater than or equal to simulated yield in one out of 10 years. For example in Atherton tableland (cluster 1), yield may exceed 10 t/ha only in one out of ten years. In cluster 4, a more than 6 t/ha yield may be expected once in every 10 years.

Site-location clusters based on yield probability

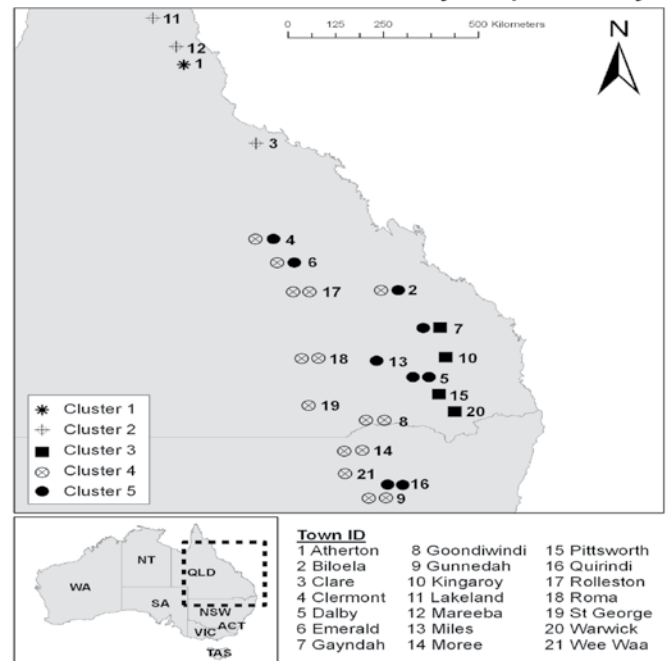


Figure 1. Geographical distribution environment clusters in northern Australia based on simulated grain yield. Some locations are represented by two clusters due to the presence of two soil types. Other locations are part of the same cluster (represented by two similar symbols), regardless of two soil types.

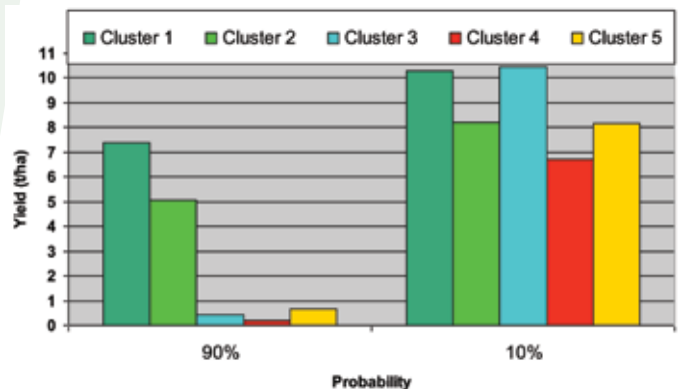


Figure 2. Simulated grain yield of maize in five clusters at 90 and 10% probabilities. Probability level indicates the percentage of years that yield will be greater than or equal to the simulated yield.

Stress types and their frequency were determined from separate analysis of the water supply demand ratios during the critical growth period, i.e. around flowering. Figure 3 shows the possible stress types that are likely to occur in maize growing environments across Queensland and northern NSW.

Mid-season stress or mild flowering (E1) stress starts to develop when the ratio of water supply to crop demand for water at flowering declined nearly to 0.5 but only for a short duration. Under ideal conditions when there is no stress (E4), the environment water supply capacity can satisfy the maize plant demand for water, and the ratio becomes nearly one.

When the water demand ratio starts to decline below one after flowering, stress type (E2 - mild terminal stress) develops. Depending on the severity, the terminal stress can be described as (E3) moderate terminal stress or (E5), severe terminal stress. In E5 stress type, the ratio drops rapidly below 0.5 during flowering and continues to decline, causing reduced seed set and poor development of kernels. E5 may therefore include both flowering and terminal stresses.

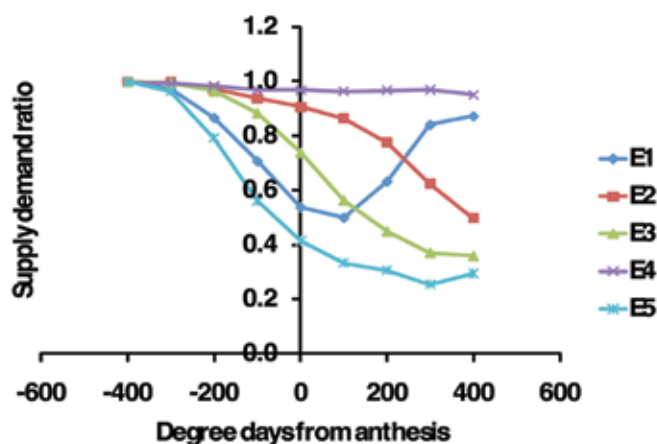


Figure 3. Five potential stress patterns detected in the maize growing: E1 mid-stress, E2 mild terminal stress, E3 moderate terminal stress, E4 no stress and E5 flowering and severe terminal stress.

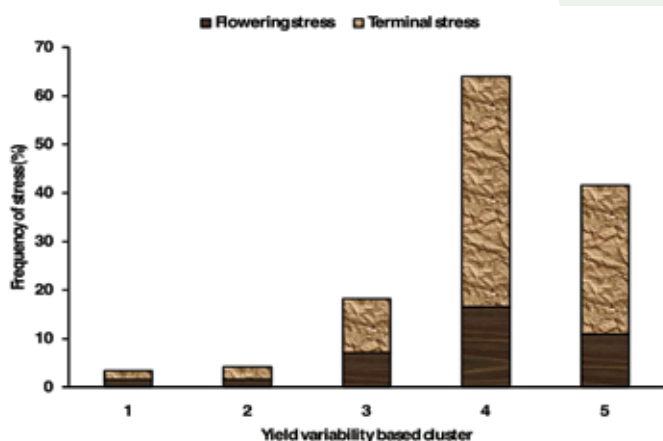


Figure 4. Graph showing yield variability based on the frequency of flowering and terminal stress.

The frequency of stress (flowering or post flowering stresses) in clusters 1 and 2 was low (Figure 4). Consequently, in these clusters, in most of years (90%), grain yield will be equal to or higher than the simulated yield levels for these environments. In other words, the frequency of stress is very low whereas the frequency of no stress (E4) conditions is higher.

In clusters 4 and 5 where the yield level was low (Figure 2), the frequency of flowering and terminal stresses was very high (Figure 4). This leads to higher probability of yield failure - yield in these environments is expected to be less than 1 t/ha in nine out of 10 years.

Since the frequency of terminal stress is very high in most areas of QLD and northern NSW, improving performance in such environments will require identification of traits that enhances tolerance to terminal stress. Understanding management conditions such as planting time, planting density and configuration can also help identify the best genotypes by management combinations for the target environments.

Further work

This is a preliminary characterisation work, so it needs validation of environment classifications on the basis of experimental data. Further analyses may also be needed to refine the definition of stress types. However, this work may serve as a reference for site selection to establish yield trials in the future. The identified sites are likely to be representative of the northern Australian maize growing environments.

For more information

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

Maize germplasm and productivity improvement

Demand for maize - for stockfeed and other applications - is increasing in Australia.

Maize is often considered an unreliable crop for Australian rainfed production systems due to a lack of well-adapted hybrids. Yields may vary from 1-10 t/ha depending on the season. In the wet tropics yields range from 5-9 t/ha.

To promote a competitive Australian maize industry, the Department of Employment, Economic Development and Innovation (DEEDI) runs a maize pre-breeding program.

Causes of variable yield

Drought and heat stress, particularly during flowering and grain fill, are the main causes of variable yield.

Diseases, including Puccinia polysora rust and Exserohilum turcicum leaf blight, can cause up to 50% yield reduction and significant grain quality deterioration due to uneven kernel size and shrivelled kernels.

Maize pre-breeding program

This program aims to develop a germplasm adapted to Australian growing conditions that fulfills the grain quality requirements of the maize industry.

The program works closely with the major seed companies in Australia to avoid redundancy. It fosters links between private and public research and development efforts.

The project is supported by Grain Research Development Corporation (GRDC) and the Australian Centre for International Agricultural Research (ACIAR) as part of the Sustainable Intensification of Maize-Legume cropping systems for food security in Eastern and Southern Africa (SIMLESA) project.

Breeding objectives

- durable resistance to tropical and subtropical diseases such as tropical rust, turcicum leaf blight and ear and stem rots
- wider adaptation and drought/heat stress tolerance
- improved plant architecture for better performance under higher plant density in the wet tropics
- improved nitrogen use efficiency
- characterise maize growing environments in Queensland and northern New South Wales using a crop simulation model
- identify physiological traits that improve performance stability in target environments
- develop the most suitable genotype by environment by management (GxExM) combinations that improve reliability of maize production in Australia.

Key activities include:

- population improvement and inbred lines development
- gene pool enrichment through introduction of exotic germplasm
- molecular profiling to assess genetic diversity and identify parents for key traits
- evaluation of stress tolerance under induced/field stress conditions at critical growth stages
- stability and adaptation evaluation via multi-environment trials (METs) characterise major stress types and patterns in maize growing environments.

Dr Solomon Fekybelu, senior maize breeder at Hermitage Research Station, is using DEEDI expertise in breeding technologies, genetic markers, bioinformatics, crop modelling, diversity analysis and crop physiology to develop these higher yielding maize lines suited to central and southern Queensland conditions.



Stuart and Phil Penberthy of Inverell, in northern New South Wales, have used Lightning herbicide on Pac 675 IT-corn successfully over the past two seasons. Photo courtesy Pacific Seeds

Corn herbicide producing results at Inverell

A herbicide which controls a broad range of weeds in corn has been an effective option over the past two seasons on the Penberthy properties, at Inverell, in northern New South Wales.

Stuart Penberthy said he had been using IT corn specifically so he could spray the herbicide Lightning® across it as a post-emergent.

"The first year we were chasing black oats in the corn," he said. "We had a germination of black oats after we sowed the corn and it did a very good job on it."

He said the herbicide had also been used successfully on pigeon grass. Stuart's brother, Phil Penberthy, also applied Lightning® to control other problem weeds including Johnson grass.

Lightning® herbicide is a broad spectrum option for both broadleaf and grass weeds and can be applied to corn hybrids which are Imidazolinone Tolerant.

There are a range of IT hybrids available from Pacific Seeds, Pioneer Seeds and HSR Seeds which compare favourably to conventional hybrids in terms of yield and performance.

Mr Penberthy said they had grown the Pac 675IT corn for the past two years and last season it produced an average yield of 6 tonnes per hectare under very wet conditions.

He said he will use IT corn again this season and Lightning® will be applied to target barnyard grass, which has become an issue in the area set aside for the corn crop.

The use of Lightning® herbicide has made weed control a lot easier in the corn paddocks.

"Before we had to really work on the weeds, the Atrazine was always letting a few get through," he said.

"Lightning has allowed me to cut the rates of Dual (herbicide) back and take out a Starane and Atrazine spray out as well," he said.

Dual, at a rate of 1 litre per hectare, and Atrazine, at a rate of 1.5 kilograms per hectare, were applied as a pre-emergent and Lightning® used after the crop was established.

Before IT corn was grown on the property, heavier rates of both Dual Gold and Atrazine were used in an attempt to achieve good weed control.

Dual was applied at a rate of 1.5 litres per hectare in split applications and Atrazine was applied at 2.5 kilograms per hectare.

Lightning® herbicide can be applied as a post-emergent from when the corn crop is between the two and six leaf stage. The earlier applications control a wider range of weeds and reduce weed competition earlier leading to higher yield potential.

Mr Penberthy said last season he applied the herbicide within the labelled application window and achieved very good weed control.

He said there was no doubt he was getting better weed control with the use of Lightning herbicide and that translated into higher yields.

The past two seasons had also been quite different, with the first year having a dry spell through much of it and the second year was extremely wet.

Lightning® herbicide performed well under both extreme weather conditions and on different soil types.

Soils on the property range from alluvial black flats through to stony red ridges.

Looking for a corn contract this year? Here is a quick contact list of various end-users offering contracts.

Name	Contact	Phone	
Defiance Maize Products (Warwick)	Rodney Walker	07 4661 1233	0428 721 532
National Starch	Craig Blackett	07 4630 1181	0439 392 324
Lachlan Commodities, CW NSW	Tony Cogswell	02 6851 20 77	0418 220 510
Quirindi Grains & Produce	John Webster	02 6746 1911	0428 497 564
Gunnedah Maize Mill	Stephen Dangerfield	02 6742 7144	
PB Grains	Ben Hardy	07 4690 6400	0488 582 105
Agracom P/L	Joe Hallman	02 6746 4444	

Or your local grain trader or merchants association.



Lightning®

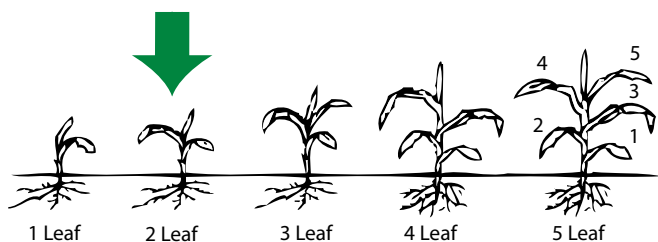
Herbicide for Clearfield® Maize

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.

Australian maize industry developing relationships with Asia (cont from p. 4)



Meeting with Shin Dong Bang CP Korea



Supermarket Visit Japan



Example of contamination found in maize by Dongil Grain Korea

Dryland corn brings best returns on Downs

Dryland corn provided growers on Queensland's Darling Downs with the best returns in the 2010/2011 season.

In a review presented at the recent Grains Research and Development Corporation (GRDC) Grains Research Update at Goondiwindi, Pacific Seeds Summer Grains Agronomist Trevor Philp said dryland corn proved to be the season's "winning" crop.

"Growers in a number of growing areas across the Darling Downs netted over \$1000 per hectare from their 2010/2011 dryland corn crops," Mr Philp said.

"In a large scale replicated trial conducted by Pacific Seeds at the Loughnan family's Bowenville property west of Toowoomba, dryland corn returned more than \$2000 per hectare."

"Soil water is full after those crops and there was potential for double cropping this season," Mr Philp said.

Prospects for the 2011/2012 corn crop are also looking bright in most growing areas due to a wet summer.

Mr Philp said the season reiterated the host of agronomic benefits that made corn an ideal rotational crop, such as:

- Reliable returns
- A wide planting window
- Suitability to most planting configurations
- Limited pest and disease pressure
- No spray out needed
- Limited lodging and good weathering



Pacific Seeds Rotational Trial at "Jackson", Bowenville



Dry land Corn & Sorghum performance Yield & GM/Ha Cambooya 2006-2011

Rotation		Sorghum	GM/Ha \$	Corn	GM/Ha \$
EX-Sorgh	2010-11	4.26	539.54	7.15	1525.6
EX-Sorgh	2008-09	5.34	786.86	4.98	909.32
EX-Sorgh	2007-08	3.90	457.1	3.67	537.28
LF Wheat	2006-07	5.39	798.31	4.67	821.28
Average		4.72	645.453	5.12	948.37

Price: Average price 2000-2005. Source: CS report 2005

New corn one to watch

Dryland corn has been a big part of Wade and Sally Bidstrup's cropping program for years, with the crop providing rotational benefits that extend from one season into the next.

Their philosophy is that although corn can be a little more expensive to plant, the minimal attention needed after that initial outlay pays off financially.

In 2010, after deciding to capitalise on attractive gritting contracts on offer during late winter and firm feed corn prices, the Bidstrups planted both kinds of corn.

PAC 624 was chosen for the feed corn component as the season looked favourable and the variety had impressed the previous season.

In what was to end up being a very wet summer, the PAC 624 returned an average yield of 6.67t/ha.

For the gritting component PAC 727 and Pioneer 32P55 were planted.

Mr Bidstrup said both varieties had very similar yields of approximately 4.5t/ha and, although PAC 727's drydown was slower the grain quality was good. A Pacific Seeds Field Test Trial was again hosted by the Bidstrups in 2010.

PAC 624 won the trial with a yield of 7.27t/ha, with second place taken out by new variety 607IT, which yielded 7.1t/ha and made a favourable impression.

"We want some of it for next season," Mr Bidstrup said.

"To have it yield the same as PAC 624 but have the IT gene for weed control options makes it look pretty good to us."



Wade Bidstrup is looking forward to growing new variety PAC 607IT after being impressed with its trial performance.



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HSR Seeds Increases Commitment to Summer Seed Research

While many commercial seed companies and public seed breeding programs cut back on their investment in summer crops, HSR Seeds is doing the opposite.

HSR Seeds has recently announced they have appointed Mr. Paul Newell as their new Summer Crop breeder. Paul comes to HSR Seeds with over 15 years of experience in successfully developing the Pacific Seeds maize breeding program.

"Paul will be responsible for the development of new grain and forage sorghum, maize, sunflower and popcorn varieties, chiefly for the Australian and New Zealand markets" announced Research and Development Manager, Damien Courtier.

"Paul brings to HSR Seeds considerable experience which will be focussed on developing varieties that are specifically designed to perform in the unique Australian and New Zealand markets. This program will be a great addition to our already successful sweet corn breeding program".

"We identified recently that industry wide investment in summer hybrid development has been declining and unless we took up the challenge and invest now for the future, our customers will not be competitive in the changing world markets" said Managing Director of HSR Seeds, Rodney Coe.

"HSR Seeds is an Australian company and we have Australia and New Zealand as our focus. Recent changes in the summer hybrid industry particularly relating to breeding capacity within Australia, are a concern for all growers. We are addressing this by increasing our investment in breeding as we continue to strengthen our product portfolio."

Paul Newell
Summer Crop Breeder
HSR Seeds



Join the Maize Association of Australia

Growers and interested parties are being urged to join the Maize Association of Australia which is the peak body for the industry. Contributions to membership will greatly assist the Association produce The Cob magazine and continue marketing and research options into the future.

Membership of the Association declined during the drought years and it is hoped the better seasons will encourage greater participation in the Association. There are many positive prospects for maize production in Australia going forward and members of the Association are working closely with current and emerging export countries to further the success of the crop.

Without the support of industry participants going forward, the Association will not have the resources to fulfil its potential. Please consider joining - details of membership are contained on page 15 of this publication.



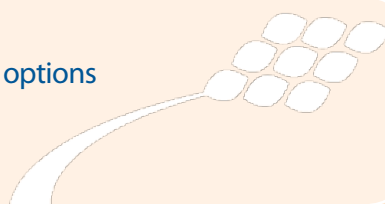
Phone: (07) 4169 0011
www.hsrseeds.com.au

Robert Bown of Jackson Flat, near Tabulam, on the NSW North Coast, grew Olympiad.
He says "I am very happy with the variety. It looks good. It has worked out quite well, there is a lot of double cobbing. The cobs are nice, filling well."



112CRM

- IT grain variety for more cropping options
- Good drought tolerance
- Dryland or irrigated potential



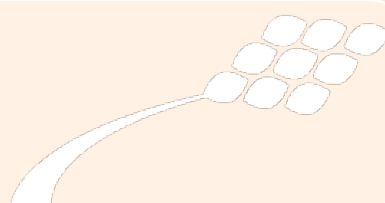
118 CRM

- Gritting contracts now available with Defiance Mills.
- Widely adapted
- Consistent high yields relative to current commercial gritters.



118 CRM

- Dent corn/ softer starch
- Grain or silage variety
- Good disease package



112CRM

- Dent corn/ softer starch
- Grain or silage
- Proven high yielder (over 20t/Ha) under irrigation
- Good stress tolerance for dryland opportunity



102 CRM

- Dent corn/ softer starch
- Grain or silage
- Proven to yield in N. NSW and Sth QLD in very early and late plant



Forage Sorghum

Grain Sorghum

Maize

Popcorn

Sunflower

Sweetcorn

World News

Africa

Better Maize Seeds Coming for Africa

Drought resistant maize seeds will be ready for use in 2016 in Uganda and other African countries. Confined field trials on the seeds are taking place at the National Crops Resource Research Institute to help farmers continue with production during drought.

The research is funded under the Water Efficient Maize for Africa (WEMA) Project and is designed to ward against more extreme conditions in the future.

Joseph Kikafunda, a researcher at the institute warned that the country would experience drought more often due to changes in global climatic conditions.

"We have to mobilise people to adopt modern farming methods, otherwise, the country is at risk of famine," Kikafunda said.

He advised farmers to use modern farming methods to get higher yields for sale and consumption.

Experts say a drought-tolerant seeds can tolerate erratic weather patterns and yield greater crops.

The initiative has been welcomed by many countries in Africa as a strategy to boost food security among households.

World

Boost for global corn research

THE Consultative Group on International Agricultural Research (CGIAR) - the world's largest international agriculture research coalition - announced a \$US170 million global alliance and program to expand and accelerate research into maize.

"This program aims to double the productivity of maize farms, while also making those farms more resilient to climate change and reducing the amount of land used for growing the crop," said Carlos Perez del Castillo, CGIAR Consortium board chair.

'As a result, farmers' incomes are expected to rise and their livelihood opportunities to increase, contributing to rural poverty reduction in developing countries.'

Under the research program, 40 million smallholder farm family members are expected to see direct benefits by 2020 and 175 million by 2030.

The program is expected to provide enough maize to meet the annual food demands of an additional 135 million consumers by 2020 and 600 million by 2030.

The program will be implemented by the International Maize and Wheat Improvement Centre (CIMMYT), and the International Institute of Tropic Agriculture (IITA).

USA

Most corn still goes into animals' feed

Although more is written and said about using corn for ethanol, the livestock industry in the US continues to purchase more corn than any other sector year after year.

According to reports released by the USDA this month and data supplied by PRX, US and international livestock continues to be the number one use for American corn, totalling approximately 7.7 billion bushels per year.

An estimated 1.5 billion bushels of corn, or 80% of projected US corn exports, is used for feed overseas in the past year.

Additionally, US livestock consume 6.2 billion bushels (5.0 billion whole corn, 1.2 billion as ethanol co-products).

"While media attention has focused more on ethanol production recently, the livestock industry continues to purchase more corn than any other sector year after year," said National Corn Growers Association President Bart Schott.

"Livestock and poultry continue to be a valuable market for corn farmers and one which we continue to provide with an ample supply of corn and corn co-products."

China

Watershed moment in China's food security

China appears to have reached a watershed in its food security strategy, which has long set a target of 95 percent self-sufficiency in four key grains - rice, wheat, corn and soybeans.

If recent trends continue, the world's most populous nation and second-largest economy will become a leading importer of staple foods for its 1.3 billion citizens, as it has in industrial raw materials and energy, including oil and more recently natural gas and coal.

In a tight market, this will push prices higher in Asia and elsewhere, as China - the biggest producer of rice and wheat, and the second grower of corn after the United States - becomes more dependent on imports to meet rising domestic demand.

Last year, China imported some 95 million metric tons of these grains, about 17 percent of domestic production.

The bulk of imports were soybeans from North and South America, mainly to feed pigs, cows and other livestock as increasingly affluent Chinese consume ever more protein-rich meat, milk and dairy products.

In 2011, China has added to its feedstock demand. Imports of corn are projected to reach record levels. China will probably buy 5 million tons this year, mainly from the U.S. Such a volume would dwarf China's corn imports in 2010 and mark the second consecutive year it has been a net corn importer, after 15 years of net exports.



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 2010-2011

Keith Pickmere	President	Riverina	02 6962 4938	kpickmere@bigpond.com
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
Bernie Walsh	Maize Grower	Riverina	02 6955 7110	walshfarms@bigpond.com.au
Craig Blackett	Industry	National Starch Pty Ltd QLD	07 4630 1181	craig.blackett@nstarch.com
Rob McCarron	Industry	Pacific Seeds, Gunnedah NSW	02 6742 2724	rob.mccarron@pacseeds.com.au
Paul Newell	Research & Advisory	HSR Seeds, Qld	0400 816 270	paul.newell@hsrseeds.com.au
Kieran O'Keeffe	Research & Advisory	NSW Dept of Primary Industries	02 6960 1319	kieran.okeeffe@industry.nsw.gov.au
Damien Courtier	Research & Advisory	Snowy River Seeds, Vic	03 5154 1878	damien.courtier@hsrseeds.com.au
Steve Wilson	Research & Advisory	Pioneer Hi-Bred Australia, Qld	07 4630 1155	stephen.wilson@pioneer.com
Craig Choice	Industry	Pioneer Hi-Bred Australia Pty Ltd Toowoomba QLD	07 4637 2966	Craig.Choice@pioneer.com
Glenn Lok	Maize Grower	AgReserves Australia Ltd	02 6960 5200	glok@agreserves.com
Jennie Hehir	CEO	MAA Finley NSW	03 5883 4445	jenniehehir@bigpond.com

Maize Association of Australia Incorporated

ABN 1650 790 2551

Membership Application 2011 for membership based on the calendar year ending December 2011. Please accept my/our application for membership of the Maize Association of Australia (tick relevant box)

- ☐ Corporate members \$1500.00 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 342, Finley NSW 2713

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

Credit card and direct debit also available:

Credit Card (Enter your details and send in)

☐ Mastercard ☐ Visa ☐ Bankcard

Card number

Expiry date Amount \$.....

Name on card.....

Signature.....

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

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