



## General Managers Report by Steve Lee

### Dear Growers,

It's been a busy start to 2014 for everyone with an extremely early harvest. For the first time in many years deliveries started in January. This was partly due to the out of season flowering and good sunlight hours during the growing season. By the end of February the first harvest round had been completed on many farms and our Receivals area was in full swing. Record early deliveries continued throughout March and into April as growers made the most of favorable harvest conditions.

### 2014 crop size

The 2014 Australian crop is estimated to be in the order of 40,000t with growers in all areas reporting reasonable sized crops. So far mother nature has been kind to us - no cyclones or floods. The dry growing season resulted in low disease pressure and allowed timely control of insect pests, with plenty of sunlight hours to help the nuts mature. After the wet harvests of the last few years, the dry start to the year has been a blessing, not just for harvesting, but improving kernel quality. The factory started cracking in mid March and processing rates are up as we make the most of a better quality crop.

### 30 year ceremony and history book launch

A big thank you to all those who attended our recent celebration. Unfortunately Barnaby Joyce had to withdraw at the 11<sup>th</sup>

hour but he was replaced by local MP, Kevin Hogan, who deputised at short notice. Those who attended enjoyed morning tea and catching up with other past and present shareholders and staff. Tours of the new drying room in its final stages of completion were also undertaken. As this edition goes to print we are filling the new room with nuts and the shell-fired boiler will be providing the heat for drying all of MPC's NIS. The project has been completed just in time as our existing silos were almost full. As mentioned in recent media reports, there is currently a push from the gas industry to increase LPG prices by 20%. This is a cost that MPC can now avoid (and in the future) for NIS drying, as we will be burning the waste shell from the factory.

Our history book "*The First 30 years: a history of the Macadamia Processing Company*" was released at the event. A special thanks to the author, Sara Crowe, to Kevin Quinlan who co-ordinated much of the MPC research and to Kerry Byrne for suggesting the idea. The book was an interesting process for many of us as we covered the story from the inception of the company through to its current position as a world leader.

In business we are continually focused on future strategy, budgeting and forecasting trying to predict the future but occasionally it's nice to look back and recognize the contributions of those who made MPC what it is today, the world's leading processor of macadamias. It's great to see that some of the early

pioneers of the company and the industry are still shareholders and growers today.

### MPC: the same focus 30 years on

One thing that rang home as I read the history book was the primary reason for MPC's creation: "growers weren't satisfied with being exploited by the processors of the day". Growers wanted to take greater control and responsibility for the prices that they received for their NIS. There were some tough times, NIS prices increased to record highs and then just as quickly markets collapsed, but MPC was there to support its suppliers at all times, both good and bad.

Many growers have asked if we are facing another market collapse? Are current prices sustainable? Is chasing a few cents per kg this year worth risking a market collapse at the risk of losing dollars in the future years?

The answer is we can never know for certain, but MPC / MMI can only try to ensure our strategies secure a viable future for our growers and the industry. To achieve this we need your support. Every grower and every consignment is a brick in the MPC wall. When you remove bricks the wall weakens, it mightn't fall but it does lose strength. If growers split loads MPC loses volume, our growers lose the benefit of our combined strength, it reduces our profitability and the amount of money we can return for your NIS. In the current market every tonne counts.

MPC shareholders have invested in MPC

## In this issue

General Managers Report	1	African Black Beetle	5
Marketing Report	2	Chemical User Training	5
2014 Harvest Update	2	30 Years of Success	5
Sigastus Weevil	3	For Sale	8
Chemical Availability	4		



shares as a strategy to guarantee a market for their NIS and maximise profits for their farm. In turn MPC is focused on industry sustainability and returning value to our growers. I wonder how many non MPC growers see their processor as part of their farms long term strategic plan? If times turn tough, will they still take their crop? Are their processors developing sustainable markets? Are they supporting industry quality and marketing initiatives?

Sure, some of our competitors offers might sound too good to be true, but there is a simple reality in our industry, processors need NIS to survive. If they don't get enough NIS they go broke. This drives them to buy NIS and do it at any price. Once they secure crop they then need to sell the kernel or NIS at prices that allow them to make a return—this is often at or above the limit of what markets can absorb...eventually the bubble bursts. Through the history of the macadamia industry we have seen this a number of times. I want to assure you that MPC/MMI are focused on developing long term and stable markets that are about providing consistent, strong returns to growers.

### NIS market: China

The demand for NIS from China has continued to gain momentum. We are receiving enquiries from buyers almost daily. The concern is that many of these enquiries are from traders who have little knowledge of macadamias. The risk is that this type of speculative trading may create a market 'bubble', which could burst if this market slows or contracts. There is a well written article on the recent problem encountered in the US Pecan industry 'Anatomy of a market Crash-An Overview of the 2012/2013 Pecan Market' by Daniel J Zedan. There's a link to the document on the growers section of our website. It's worth reading as it explains the factors that led to the Pecan Industry in the United States experiencing a major crash.

From our visits to China we know the market is real. Nut consumption data indicates China is increasing demand for all nut categories and they have the population to consume massive amounts of macadamias.

The current supply chains have traders between the Chinese processors, manufacturers and retailers. MMI is working hard to streamline this supply chain to help provide stability - focusing on developing relationships similar to those that we have developed in the kernel market.

## Marketing Report

### NIS & kernel export markets

Currently both the kernel and NIS markets are strong, running at unprecedented high prices and competing with each other for a share of available product.

Growers need to know most Chinese buyers are essentially traders. The same traders also procure and trade other nuts produced around the world; including pecans, pistachios, pine nuts, peanuts, walnuts, almonds etc. These traders have made it abundantly clear that if macadamias reach a threshold price they don't like then they will be substituted for cheaper, alternative nuts.

It's important to understand it has taken more than thirty years to develop kernel markets around the world. If these markets are not supported and expanded, the industry will be faced with an overwhelming surplus of Nut In Shell (NIS) which processors will not be in a position to take from growers. In a scenario where we don't have a kernel market in a position to absorb large quantity of additional kernel, the consequences for the industry will be disastrous with prices dropping to unprecedented and unsustainable levels. Growers should realise that they can invest in sustainable pricing by maintaining a balanced supply to both the NIS and kernel markets.

During a recent visit to Hong Kong and mainland China representatives of MMI were able to visit a number of NIS processing plants in operation. Some of these were small outfits operating in close proximity to one another. In terms of processing regimes, including equipment and layout, most of these were mirror images of each other. There was one overriding factor every buyer or processor of NIS commented on: quality, quality, quality.

There has long been the view that one can send poor quality macadamia NIS to China at prices equivalent to high quality macadamia NIS in other markets. Although this was possible as the China export NIS market was developing, this is becoming more difficult to do as buyers (aka traders) are becoming more knowledgeable in the product they are buying and are demanding a higher quality product for their money.

This is where a reputable brand is essential – buyers are starting to identify which companies are reputable in supplying quality products at market related prices, and which are supplying low quality at unreasonable prices.

Australia has a strong worldwide reputation for quality kernel. Collectively (as an industry) we need to ensure that quality is maintained and that we continue to supply enough kernel to the established, long term customers. This is to ensure these customers remain satisfied and loyal to our industry through the peaks and troughs.

Loyal kernel buyers in the industry are paying premium prices for macadamia kernel and they are currently able to maintain retail shelf space and continue to grow demand. In order to maintain this growth, a balance between reasonable kernel prices and the short term benefits of high pricing in the NIS export market is encouraged.

### Conclusion

The dream of stable and sustainable pricing for macadamia growers can only ever be achieved by maintaining a balanced supply to all the available markets of kernel and NIS. MMI is working hard to maintain this balance to ensure growers receive the best long term pricing.

## Agricultural Matters

### Harvest 2014

Harvest has come early to many orchards this season. MPC received its first delivery in January which consisted of a load of var. Nutty Glen from the Lismore area.

Flowering for this season was spread across three distinct occasions in the Northern Rivers which influenced production of the early crop. Harvest also started early in Bundaberg and slightly earlier around Macksville .

The growing season was also influenced by a drought that lasted from September to March and placed trees under stress in many areas. Some growers relying on irrigation in Bundaberg and Gympie used all stored water and had to buy in irrigation water to sustain their trees.

Quality delivered to MPC to date appears to be better than the previous few seasons despite dry conditions throughout the nut growing and oil accumulation phases.

Some MPC growers have used Ethephon successfully this season to abscise their crop. In one orchard the use of Ethephon resulted in very little crop remaining in trees two weeks after application. Ethephon was applied when fully mature nut had began to drop. Maturity was monitored via special tests performed by MPC. The application of Ethephon took

place in the last week of March while the night/day temperatures were still reasonably warm e.g. Lismore average 19.23 - 26.73°C. An extensive article is available on the MPC website on the use of Ethephon, including suggested rates by varieties.

## Sigastus Weevil

Sigastus Weevil was initially found infesting macadamia orchards on the Atherton Tablelands in Far North Queensland in 1994/5. Fay *et al* in their preliminary report *Sigastus Weevil – An Emerging Pest Of Macadamias in North Queensland* (QDPI) stated that nuts may be attacked until shell hardening stage, and that larvae consumed whole kernel with larval duration being shorter in larger nuts. They went on to say that crop loss in an unsprayed orchard may be up to 30%.

It was noted the weevils were susceptible to Methidathion (Supracide®/Suprathion®) and Carbaryl (Nufarm Flowable Carbaryl 500 Insecticide®) applied as a control measure for Fruit Spotting Bug/Nut Borer. It was also noted that Beta- Cyfluthrin (Bulldock®25 EC) was less effective than other chemicals and took longer to control weevils. It was recommended that fallen nuts be swept into a windrow and mulched to provide a mechanical control for the larvae/eggs in the nuts in the September to December period.

Sigastus Weevils have been detected in the Clunes/Eureka area for the past four years.

In the 2014 growing season they were found across the Northern Rivers in isolated pockets. The reason for this expansion in territory is unknown. Some growers suggest it may result from the major storm event in January 2013 - with wind moving them around and the out of season flowering resulting from this event, giving the weevils access to a breeding source all year round.

Growers in the Clunes/Eureka area whose orchards were affected by weevils have used a combination of insecticide applications (in conjunction with their Fruit Spotting Bug/Nut Borer control) and mulching of fallen nuts. There is variability in the success of the chemical control measures used and it is apparent timing and coverage is critical for success.

The winter of 2013 was very mild which produced multiple flowerings in the Northern NSW growing area. There were at least three distinct flower sets for the



Fig.1. *Sigastus weevil* on a macadamia nut showing scarified areas in the husk from weevil feeding (source NSW DPI).



Fig 2. *Sigastus* husk and nut stork damage from egg laying. (Fig 2 & 3: Source Macsmart .com)

2014 macadamia crop - which provided a constant supply of developing nutlets for the Sigastus Weevils to lay eggs in and feed on. Nutlets from about a 5 cent size were seen to have been attacked, with larvae inside.

The female weevil scarifies an area on the husk as shown in Fig 2. through which it inserts its ovipositor into the husk (above the unformed shell) or onto the surface of the developing kernel. After an egg is deposited, the female weevil chews into the nut stork and this usually causes the nut to fall from the tree about three days later. In some cases the nut doesn't fall. The egg hatches within the developing



Fig 3. *Sigastus* larvae in husk/shell.

nut and the larvae proceeds to consume the kernel before emerging up to six weeks later as a fully developed weevil. The weevil then flies off into the orchard to recommence the cycle.

Once shells of macadamia nuts harden the female weevil stops laying eggs into nuts as it is unable to penetrate the hard shell. They do however continue to feed on the husk of nuts. Although not fully understood, it is believed adult weevils live for many months.

The difficulty with managing the weevil is little is known about it's lifecycle.

We seem to have continual feeding and egg laying which causes multiple generations to be present at the same time. Added to this the eggs are laid in the husk and the developing weevil larvae are protected by the husk. This makes the timing of insecticide applications difficult.

With these difficulties in mind, MPC has been working with the NSW DPI Entomology team for alternative control options. This has involved a small pilot project with an affected MPC grower to ascertain if the Sigastus Weevil is susceptible to a naturally occurring fungus known to attack insects and to see if this can be used to give population control. All work in this pilot project is through the contribution of time and effort by the grower, MPC staff and NSW DPI.

This project is not funded by Horticulture Australia Limited (HAL) or the Australian Macadamia Society.

## Growers story on his orchard Sigastus Weevil experience

Mark Bulmer

Mark and his father Eric operate a family owned orchard in the Clunes area of NSW.

They have seen an increase in the population of Sigastus Weevils in their orchard during the past two seasons, with a significant increase running up to the 2013 season.

"It appears that A4 is particularly attractive to Sigastus Weevil in our orchard as it has had almost continual flowering and nut set cycles for the past two or three seasons. There are always nuts for the Sigastus Weevil to lay eggs into.

We were keen to get control of this insect pest as its numbers were increasing particularly in 2013 and we were concerned by the damage levels. We applied sprays of Carbaryl, Suprathion and Acephate to control Fruit Spotting bugs/Nut Borer last season hoping we would also control this weevil. We swept nuts into wind rows and mulched them on a regular basis hoping to achieve control by mechanical means.

Unfortunately all these approaches didn't work as we had hoped and we didn't appear to get any real control until shell hardening, when the pressure eased off", Mark said.

"When all the varieties we have set nuts in January 2014, during the drought, we noticed once again we had significant numbers of active Sigastus Weevils", Mark said.

Through consultation with MPC, Mark collected 100 Sigastus Weevils in March 2014 and these were provided to NSW DPI. These weevils were sprayed with a naturally occurring fungus that is known to attack insects and placed in cages in the field to see what happens. After seven days it was noticed they had died and the weevils had the fungus growing out of them. A number of these dead Sigastus Weevils were then placed in containers with fresh live ones, so a new batch of weevils could be infected. As these weevils showed symptoms of infection, they were then released into the orchard. The aim being that if they were infected, they would come into contact with other weevils and spread the fungus.

Craig Maddox from NSW DPI said: "the fungus requires moist, humid conditions to work. So we waited until we had the right weather conditions before we commenced this trial".

Mark Balmer said: "Half the collected specimens were returned to the orchard just after they were inoculated with a fungus. The first samples of weevils were watched for signs of them dying for seven days before I saw any effect. It started raining on day five and by day seven, seven had died. The increase in humidity appeared to trigger the growth of the fungus. It is easy to see the white fungus growing out of the insect's body. The remaining infected Sigastus Weevils were released, three cadavers were pinned to trees and four were retained for further inoculation of future collected specimens. Several days later a Sigastus Weevil was found dead and covered with white fungus several hundred metres from the release site.

"A second release of weevils occurred in early April during a showery period; however this lot started to die within four days of being inoculated".

Craig Maddox from NSW DPI said: "The catch, inoculate and release of the weevils is just a start to be sure the fungus used is effective in killing the weevils. If it continues to show promise, we will look at a larger scale field trial to see if it gives results". A blend of commercially available fungus with fungus of the same species used in the initial trial may be used in the orchard to test for control of Sigastus Weevils in the future.

Mark has also made many other observations of Sigastus Weevil. "The weevils have an interesting habit of hiding or rolling up and dropping off the trees when I approach the trees they are in. They also appear to be strong flyers," Mark said.

Mark has also undertaken some of his own research. "I did a trial in my refrigerator at home to try to simulate a cold winter night to see if the weevils would be adversely affected by the cold. The weevils were placed in the refrigerator at 1°C for 11 hours over night. I took them out in the morning and placed them out side in the open. They were all pretty sluggish to start with but by 10.00am when the temperature was about 22°C they were once again looking pretty lively. So from my observation it might take more than a cold winter to stop these things!" Mark said.

It is very early days but the results from the research into the use of pathogenic fungi looks promising. The fungus used in this research is potentially a risk to anyone who is Immuno compromised, so precaution must be taken with its use – and the appropriate PPE must be worn.

## Chemical availability

We have been advised that two insecticides registered for macadamia use will not be available for the 2014/15 season due to these not currently being manufactured. These are:

Gusathion® which is registered for Fruit spotting Bug and Nut Borer. Limited supply may be available, please contact your local rural supply company to find out more. Suprathion® which is registered for Fruit spotting Bug, Twig Girdler, Felted Coccid, Nut Borer, Banana Spotting Bug, Mealy Bug and various scale insects is not presently available in Australia. Suprathion was also the main product used for the control of Sigastus weevil. The lack of Suprathion being available was bought about by a manufacturing problem in China. The shortage may remain for up to twelve months. Very limited stocks may still be available in Australia. Again we advise it best to talk to your local rural supply company to find out more.

While these insecticides are still registered for use on macadamias, their withdrawal from supply means alternatives will need to be considered. It is always recommended that chemicals from different groups be used to ensure resistance does not occur. You should always look to only use two sprays of the same insecticide in a season to ensure you do not create secondary pest problems, such as mites and thrips.

Some available alternative options to the above chemicals are:

Carbaryl e.g. Nufarm Flowable Carbaryl 500 Insecticide® - Nut Borer, Twig Girdler Monolepta Beetle. Carbaryl is known to control Sigastus weevil also.

Beta-Cyfluthrin e.g. Bulldock®25 EC - Nut Borer & Fruit Spotting Bug.

Acephate e.g. Orthene® Xtra Insecticide – Macadamia Nut Borer, Fruit Spotting Bug, Leaf Miner, Flower Eating Caterpillar, Monolepta Beetle & Flower Thrips (Qld only).

Metoxyfenozide e.g. Prodigy® – Flower Eating Caterpillar & Nut Borer.

Diazanone 800 e.g. Diazol® 800 Insecticide - Felted Coccid & Leaf Miner. There is also a permit in place for the use of Diazanone for the control of Lacebug.

Trichlorfon e.g. Nufarm Lepidex®500 – Fruit Spotting Bug, Flower Eating Caterpillar & a permit for Lacebug.

## African black beetle

The 2013/14 macadamia growing season saw a number of new pests, and not all of these affected nutlets!

The dry time caused enormous stress to trees in many unirrigated orchards; it also provided a boon for some insects. One new pest was African Black Beetle larvae, a grub living in the soil feeding on grass roots. They appeared to savour the roots of Sweet Smother Grass more than other grass species in the orchards visited.

The first observed symptom is the grass looking moisture stressed, and in extreme cases, dying. The sweet smother grass in one badly effected orchard turned the colour of straw, having been detached. The lack of roots meant the grass was winding up around the finger wheels on the harvester during the pre season clean up.

The good news is that this pest is unlikely to be a problem very often – it is favoured by dry conditions and good rainfall will allow the grass roots to grow and the grubs to drown. In the turf industry where this pest is often a problem they use irrigation to flood the soil to kill the grubs.



Fig 4. Scarab Beetle Larvae

If anyone is experiencing the problem, control measures to manage scarab infestations include:

Commercially available pathogenic fungi, i.e. *Metarhizium* sp., *Beauveria* sp. and *Verticillium* sp. Requires warm moist soil conditions. Products include Nutritech Myco-Force.

Nematodes- Entomopathogenic nematodes are available for registered use only. These nematodes require warm moist soil to be effective. Products include Ecogrow EN.

There are no registered chemical controls for the Australian macadamia industry at

this time for Scarab beetle larvae.

It should be noted the damage sustained in effected orchards will require replanting of grass to prevent future soil erosion.

In heavily effected areas it is best to sow a fast germinating and growing grass – such as millet or rye grass. This will give immediate cover, and longer-term, a permanent cover-crop can be established.

Smother grass damaged by larvae feeding may benefit from a lite application of fertiliser to encourage regrowth. A general mixed fertiliser such as Crop King 88 or Superior fertilisers SF 30 should be sufficient in many situations.

The appearance of such large numbers of this beetle larvae is most likely a result of drought conditions and unlikely to be a regular event.

### New source of skips available for harvest transport in 2014

Hill "mac" Haulage are offering macadamia growers a skip service to transport nuts, particularly for those utilising the Summerland House with No Steps dehusking service. Prices are based on a 3-4 day turn around. Contact Vicki – 02 6628 6112 and Steve – 0427 242 052

Prices including GST:

0-30km
8m <sup>3</sup> - \$240.00
10m <sup>3</sup> - \$300.00
15m <sup>3</sup> - \$400.00
30-50km
8m <sup>3</sup> - \$260.00
10m <sup>3</sup> - \$330.00
15m <sup>3</sup> - \$440.00

Skip heights are:

8m <sup>3</sup> - approx. 900mm
10m <sup>3</sup> - 1100mm
15m <sup>3</sup> - 1300mm

### Cover your load

Growers are reminded when transporting Nut in Shell to the factory they are required to cover their loads. Not only is a requirement of the Roads and Traffic Authority, it is good practice to cover your nuts to stop any contaminants or rainfall entering, which could affect your quality results.

### MPC Farm Chemical Users Refresher Course 2014

A farm chemical users refresher course will be run by MPC again this year.

Date: Thursday 13 November.

Time: Start 8:30am sharp. Finish 12:30pm

Cost: \$125 payable to TAFE on the day.

Morning tea will be provided.

Places are limited so if you haven't already, please phone Jim Patch on 02 6625 6309 or 0427 243 900 to reserve your seat.

## MPC Celebrates 30 Years of Success

On the 23rd April 2014 MPC held a morning tea to celebrate 30 years of successful operation and to launch a book detailing the company's history.

In his address, MPC's Chairman Chris Ford acknowledged that the significant achievements of MPC have been due to the support of its grower shareholders and staff.

Chris said: "Since its creation in 1983 MPC's success has been underpinned by our grower shareholders who have proven, even during periods of great adversity, that they are innovators.

"Uniquely MPC has managed to retain many of its permanent staff, providing great stability for the company. Through the efforts of our grower shareholders, the board, management and staff, MPC has forged a world leadership position in macadamia processing and marketing. And there is much more to come."

Officiating at the launch Federal Member for Page Kevin Hogan said the region had every right to be proud of MPC and the native Australian nut.

"We proudly claim the title of being the home of the Macadamia," Mr Hogan said.

"In one of my first parliamentary speeches, I spoke about the importance of the industry to our region, not just in terms of our local economy and the number of people it employs, but also of the industry's strong track record of innovation and adoption underpinned by arguably the best macadamia research and development program in the world. MPC exemplifies that innovation and the prosperity it brings to Page."

*The First Thirty Years – a history of the Macadamia Processing Company, chronicles the company’s highs and lows, from its start as a small, fledgling factory in a rented shed in Goonellabah, Lismore, to becoming the world’s largest processor and supplier of quality macadamia products.*



*(L to R) State Member for Lismore Thomas George MP, Sara Crowe author of “the first 30 years: a history of the Macadamia Processing Company, MPC Chairman Chris Ford, Mayor of Lismore, Jenny Dowell, with the plaque that was unveiled commemorating the 30 years of successful business for MPC.*



*Guests enjoying the 30 year celebrations*



*No celebration would be complete with out a cake to mark the event!*



Everyone enjoying the MPC 30 year Celebration

## For Sale

Toro z master 52" with a 23hp kubota Diesel engine. A bit less than 1100hr, new drive belts, new blades, recently replaced battery. Used on a macadamia orchard. \$9500 negotiable.

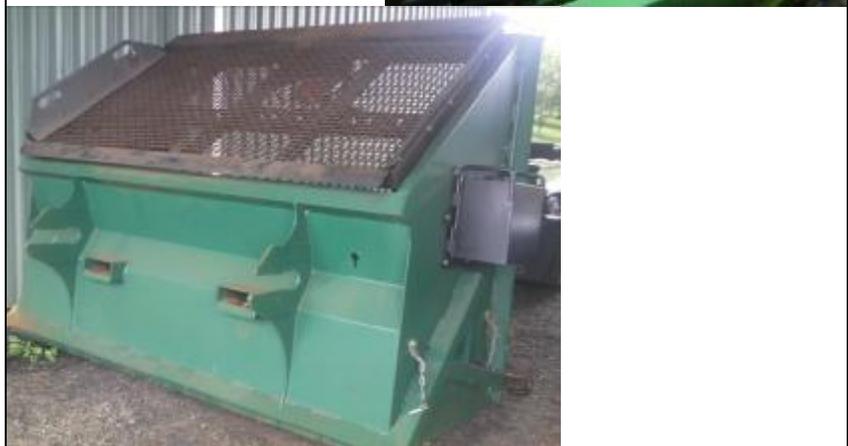
Contact Manvir Singh on 0412 144 594.



John Deere Gator. Low hours, new dash, tip tray, good tyres. Mechanically sound. Lady owner and driver. Dog not included. Offers over \$7,000.

Soil Screener. A compact portable vibratory screener designed for skidsteers, bucket tractors, and compact loaders. Two large battery packs. Hardly used. Hard to find. Use it or rent it out. Inspection invited.

Above items located in Tregagle. Contact Robert or Julie Burton on 0407 257 450.



## MPC Grower Rewards

BOC Gas & Gear, situated at 11 Snow Street in South Lismore, are proud to partner with MPC and are offering MPC growers access to the same discounted prices that are currently offered to MPC itself.

To receive the discounted pricing, a grower needs to contact either Jim Patch or Kevin Quinlan, who will place the order with BOC. Goods must be paid for at point of sale with either cash or EFTPOS. BOC have the ability to change the Tax Invoice so that it will have your name and address on it.

This account was originally set up to cover just Safety goods such as safety footwear, respiratory, gloves and your work wear requirements; however, BOC will now also offer excellent pricing for MPC growers on their welding and trade tool requirements.

Anyone wishing to find out more please contact Jim Patch or Kevin Quinlan on 02 6624 3900.

### Disclaimer

The contents of this publication are subject to copyright and may not be reproduced in any form without written permission from Macadamia Processing Co. Limited. The publication is intended to provide general information only, and while all care has been taken to ensure that the information contained in this publication is true and accurate, no responsibility or liability is accepted by Macadamia Processing Co. Limited or its staff for any claim which may arise from any person acting in reliance on the information set out in this publication.

**Editorial Policy** The editorial committee reserves the right to edit, withhold or reject all material.

