

# the Nutshell

MPC'S NEWSLETTER FOR MACADAMIA GROWERS



DECEMBER 2011

## Dear Growers,

It has been another hard year for the industry in which NIS prices were good but crop size and kernel recovery were both down.

So far 2012 is looking better with an average crop size on the trees - let's hope the quality and nut size are there.

### Final price \$3.30 at 33% premium kernel recovery

The good news is despite processing a smaller than average crop, our work on reducing costs, decreasing factory loss and increasing income has paid off.

On the 2nd of December we paid all growers to notional price and at the Christmas party the Chairman announced the company will pay a further \$0.30/kg NIS at 10% moisture for all 2011 conventional NIS deliveries.

This makes our final 2011 price for conventional NIS \$3.30/kg at 33% Premium Kernel Recovery or **\$3.55/kg** at the industry standard of 33% Premium KR, 2% Commercial KR and 1% Reject KR, and 65% Whole Kernel. Our final organic and organic-in-conversion NIS price is \$5.94/kg and \$5.14/kg NIS respectively, at 33% Premium KR, 2% Commercial KR, 1% Reject KR and 65% whole kernel. The higher final price for organic and organic-in-conversion NIS is due to the considerably higher kernel price received in the market.

For the fourth year running we have delivered on our promise of paying you fast and paying you well.

### More benefits to growers in 2012

MPC continues going from strength to strength and our 2012 plans will deliver more benefits to our growers.

For years MPC has concentrated on providing quality kernel to customers because we are convinced the key to our success is to deliver to the consumer a product with great taste and texture, every time. If we deliver on this promise, consumers will continue to demand macadamias and pay for quality.

With this in mind in 2012 MPC will help growers deliver their NIS quicker by removing penalties on reject kernel, paying for commercial grade at premium grade prices and offering a dehusking service.

The new scheme enables growers to pick up their nuts, dehusk them, and deliver them straight away. Growers who have on-harvester dehuskers can deliver straight from the harvester. Growers who dehusk in the shed can deliver straight after dehusking with no need to sort the NIS after dehusking.

If growers want to deliver nut in husk (NIH) that can also be arranged. If your NIS contains less than a nominated % of NIH (probably around 10%) you will not be charged a dehusking fee. If your NIS contains over the nominated % of NIH you will be charged a nominal dehusking fee. Note that the total tonnage delivered to MPC of NIH will be limited so you

will have to make arrangements with MPC for delivery of that material and space will be allocated on a first-in-first-served basis.

To facilitate these changes the factory is installing trash and rock removal, colour sorters and dehuskers to remove foreign material, dehusk the nuts and sort out the visibly defective nuts.

There will be an upper limit on the amount of trash, rock, and nuts which are visibly defective (e.g. black nuts). This limit will be in place to ensure the pre season clean up is still done properly and to encourage good on-farm practises. We will set these limits to cater for normal deliveries.

### Why have we done this?

We established Macadamia Marketing International (MMI) and took a 50% share in CNA because we know the industry has a bright future. To be part of that future we have to play our part in increasing farm income and decreasing on-farm costs. So our new delivery and payment arrangements, we believe, are part of the required changes.

Since the 90's the industry has approached quality by penalising growers for delivering reject kernel. Unfortunately by applying penalties the industry has caused growers to spend a lot of time sorting their nuts. Our research shows that placing wet nuts in silos whilst trying to get them dry enough to sort, can often

...more over

lead to the formation of further defects, which the grower can't see, such as brown centres (internal discolouration).

In addition silo space and sorting time are often at a premium and this can lead to a slow down in harvesting which causes further degradation and losses.

### **Quicker delivery increases farm profits**

Our trials show if growers are able to harvest frequently and then quickly deliver their nuts, kernel quality in the majority of cases either remains stable or increases over nuts that were stored and sorted. At the same time the labour input by growers decreases and the amount of nut delivered increases. Our new system gives this opportunity to our growers.



*The new Bundaberg factory progressing well with fit-out underway*

sorting losses and deliver more kernel, all of which increase the profitability of the farm.

There will be more detail on the 2012 price and payment scheme early in the new year.

***If growers do not have to spend time sorting NIS they can speed up their farm process, lower degradation, remove sorting losses and deliver more kernel, all of which increase the profitability of the farm.***

Shelf life and farm losses are important elements that are often hidden in the background. Kernel flavour changes as it degrades and goes rancid. This is the biggest problem we face when trying to provide consumers with a great taste and texture experience every time they eat our nuts.

Unfortunately every minute that nuts are exposed to the elements, either on the ground or in silos, their taste, texture and shelf life are affected.

The safest place for our product is in a foil pouch flushed with nitrogen, or failing that, dried and in cool store. Our product is perishable, it takes much longer for it to degrade than a tomato or apple but the same rules apply.

So delivering your NIS to us quickly allows us to control the storage and provides a big step forward in our quest to give the consumer a perfect nut.

On farm losses are considerable in our industry. There are various causes including insect damage, husk spot etc but there are also avoidable losses such as degradation due to low harvesting frequency, wet storage in silos, loss through breakage in dehuskers and loss off the sorting table.

If growers do not have to spend time sorting NIS they can speed up their farm process, lower degradation, remove

### **Bundaberg's only macadamia processing factory on track**

Everything is on track for a 2012 season start up at the new CNA factory in Bundaberg. The factory building is complete and machinery installation has commenced.

The delivery area, silos and dryers are approaching completion whilst work continues on moving the machinery from the Winfield site to the new factory.

We are planning a shareholder trip to Bundaberg next year the highlight of which will be a tour of the new factory. An announcement will be made about this trip shortly.

2011 has been a challenging year and I thank you all for your support of this great company. On behalf of the management and staff of MPC, I wish you and your families a merry Christmas and a happy new year. We look forward to working with you in 2012.

**Larry McHugh**  
**General Manager**

## Sales and Marketing Update

Although there's been a kernel shortage across the industry this year, the good news is the price of nuts around the world has risen and macadamia prices have increased too.

Good prices for macadamia kernel are likely to be sustained in 2012 and it appears at this stage there will be enough kernel to keep products running.

Unfortunately the 2011 crop was the smallest it's been for years. The Australian Industry produced under 8,000t of kernel in 2011, whereas in the past it has normally produced over 10,000t.

The strong Australian dollar has impacted on exports to the USA. The percentage of the Australian crop going to the USA in 2011 dropped whilst Asian destinations saw an increased share of the crop. We expect this trend to continue. Europe is still experiencing economic unrest and whilst this had a small effect in 2011, the affect of it on 2012 is yet to be seen.

Despite all of this, the overall prospect for macadamias remains extremely positive as more consumers around the world experience the taste and texture of macadamias, many for the first time.

## The strength of MMI



***With MMI on the case, growers can plan with confidence, knowing that they will benefit through increased demand for their macadamias and receive consistent high prices.***

### Macadamia Marketing International (MMI) hits its straps

One imperative for the Australian macadamia industry and MPC is to get price stability for our growers and customers to create better long-term confidence in macadamias.

The clients we sell to in Australia and around the globe want reassurance that they can get enough kernel for their products and they want to feel more confident about their commitment to developing more macadamia-based products.

So the establishment of Macadamia Marketing International (MMI) earlier this year has been a very good move for MPC and for our growers. You may recall MPC and Pacific Gold Macadamias, the marketing arm of Bundaberg's only processor Consolidated Nuts (Aust) Pty Ltd, earlier joined forces to create MMI.

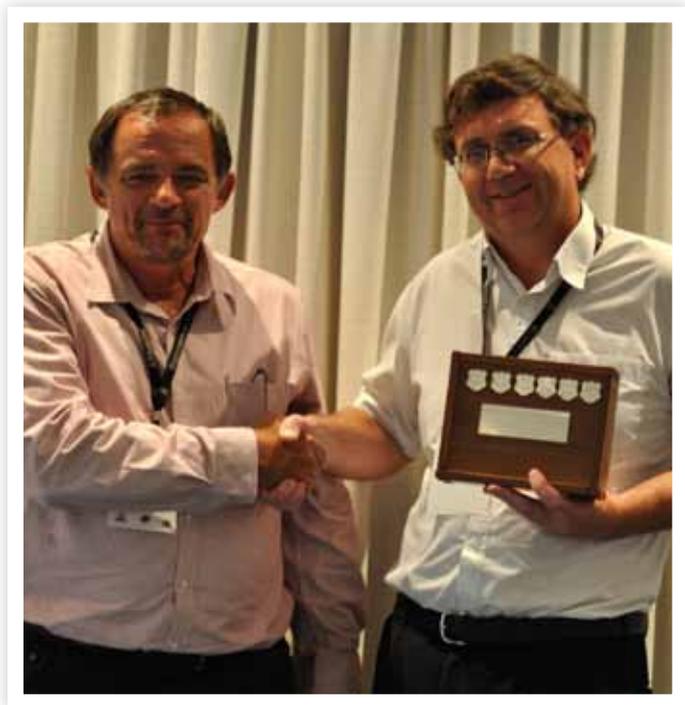
With the combined output of MPC, CNA and other global suppliers behind it, MMI is meeting the needs of global customers in ways that have never been realised before. MMI is opening up new markets for macadamias across Asia, Europe, the Middle East and in the US and we are in discussions with a range of clients regarding long-term contracts.

The exciting thing is that the overall size of the macadamia market globally is largely untapped and MMI is out there establishing the right market, working closely with retailers in Australia and internationally.

The result – our growers and customers will enjoy greater price stability and better opportunity for growth.

**MMI – Unleashing the full potential of macadamias.**

## Congratulations Larry McHugh! Winner of the macadamia industry's highest honour



Larry McHugh (right) accepts the Norm Greber award from retiring Australian Macadamia Society Chairman Kim Wilson.

MPC's General Manager, **Larry McHugh**, has received the most prestigious honour in the Australian macadamia industry by being awarded the **Norman R. Greber Memorial Trophy** for his outstanding contribution to the industry.

The award, received by Larry at the 2011 Macadamia Industry Conference on the Sunshine Coast in November, recognised his outstanding commitment and leadership of the national macadamia marketing committee, which is responsible for mapping the strategic future of Australian macadamias on the global market.

Larry has been a driving force behind the new Australian macadamia brand launched earlier this year, and the new licensing program. Both of these initiatives will position Australian macadamia nuts as the 'world's finest nut' and help consolidate Australia's No. 1 position in the world market.

"The macadamia industry has a very bright future and I see the work I do for the industry as my share of what is required to achieve our long term goals. Although I have received this award, there a lot of people who have been working with me, both at MPC and elsewhere, and I would really like to thank them for their help," said Larry.

## New work health and safety laws - important

From 1st January 2012 new work health and safety laws come into effect in NSW that will impact on many of our growers. The changes are about creating a national system.

For the first time the legislation covers self employed people and the term worker covers contractors who do work for you as a business. This means all growers need to be aware of their obligations under the Act.

Workcover NSW has information regarding the changes and your obligations under the Act on their website at [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au). Click on the **New Legislation 2012** tab on the left.

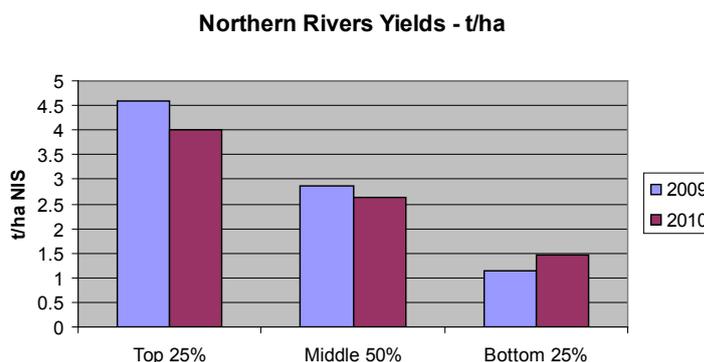
If there is enough interest from growers, an information session with Workcover for MPC shareholders can be arranged. Please contact Kevin Quinlan 02 6624 3900 to register your interest.

## Benchmarking – how do you compare?

Do you wonder how you compare to other farms in your area? Other farms with similar age trees? Then why not participate in the macadamia industry's benchmarking system run by the Macman team.

- Attached to this copy of *The Nutshell* are a couple of forms to participate, and once these are returned to the MacMan team, they prepare a report for you outlining where you lie in relation to other growers.

Here is a sample graph produced from the benchmarking data. Where does your farm fit?



## MacSmart – great new site for growers



Loads of helpful videos for growers can be found on the new industry website Macsmart, an online information source for growers.

There are some great videos on the site, with this first stage focusing upon canopy management. Check out what others are up to on their farm, as this site is a virtual field day!

This site is restricted to Australian Macadamia Growers and so you need to register to see the videos. Go to <http://www.macsmart.com.au/user/register> and follow the instructions.

## Around the farms

### What's crop set like? The question everyone's asking

**And the best answer – variable!** It looks like that the crop set in trees is better this season compared to last, but after such a great flowering it isn't as good as we all hoped.

There are definite differences between varieties and regions, let's hope for good weather for the rest of the season!

**Bundaberg:** the crop set in Bundaberg is good, with many young trees carrying a very heavy crop. Older trees have improved on the set from last year and are looking at an average to good crop yield.

**Northern Rivers:** most of the nutset is in the top section of trees, with many blank racemes (especially in the lower portion of trees) that have had small unfertilized nutlets drop off. Most nut set was from early opening flowers (August) when we had a period of 2 weeks of warm weather. The set is patchy across the regions and there are large varietal differences. Overall 344 has a better set than last season.

**Nambucca Region:** most of the nutset is in the top section of trees, with many blank racemes (especially in the lower portion of trees) that have had small unfertilized nutlets drop off. The overall crop set looks much better than last season.

## Food safety begins on the farm

*Compiled by Jennifer Wilkinson, Editor, Australian Nutgrower June 2009*

Microbiological and chemical contamination of food is not new. Events such as occurred with Brazil nuts and the serious health and negative market impacts of Salmonella contamination in peanut products in America, sound warning bells for nut industries all over the globe. Indeed, Salmonella and aflatoxin contamination have been responsible for serious losses to tree nut industries in recent years. More often than not, the cost of product recall is only the beginning of the crises – the inevitable decline in market demand can be more severe due to loss of consumer confidence.

### What is Salmonella?

*The following information on Salmonella was taken from USA Agribusiness Week at [www.agribusinessweek.com](http://www.agribusinessweek.com). This article was posted on the Agribusiness Week website on April 18th, 2009 under Special Report.*

Salmonella is a genus of rod-shaped gram-negative Enterobacteria that causes typhoid fever, paratyphoid fever, and the foodborne illness salmonellosis. Salmonella bacteria are widely distributed in our food chain and environment and can be found in raw meats, poultry, eggs, unpasteurized milk, and dairy products. People may also become exposed to Salmonella bacteria through contact with animals such as, pet chicks, dogs, cats, and reptiles. The principal manifestation of human salmonellosis is gastroenteritis.

Salmonellae are vegetative bacteria and have a relatively low temperature tolerance. The most resistant serotypes are unable to withstand temperatures of 70°C for more than a few minutes, provided wet heat is used. In dry conditions, salmonellae can survive for extended periods. The main reservoir of Salmonella is the intestinal tract of vertebrates, and members of the genus are widely spread in nature. Animals and humans may be carriers at some stage in their lives. There are many potential sources of contamination.

The most likely sources are the following:

- Raw material which is contaminated with microorganisms. If raw material handling and conveyors are located near finished product areas, there is a risk of direct contamination by splashing or spillage. It is

often difficult in existing processing plants to separate these areas, but nevertheless it is essential that cross contamination must be prevented;

- Aerosols from raw material blow lines. These contain large numbers of bacteria. Together with dust accumulations around the plant, air currents can spread contaminants;
- Personnel and equipment. These should be clearly separated between raw material and heat-treated product areas and barriers provided to prevent passage between the two. Equipment that provides the right conditions for Salmonella growth (water, temperature, nutrients) can be a source of recontamination of product;
- Birds, insects and vermin, and their fecal deposits. These may be the vector for transmission from raw material harvested in the field through heat treatments in the processing plant;
- Rework, spillages, and floor sweepings. These are all more likely to be contaminated and should be returned to the raw material area and not allowed to continue in the processing line;

The most effective management in reducing risk of contamination is by using a hygiene program and if possible, re-engineering to remove the problem.

## What are aflatoxins?

Aflatoxins occur naturally in foods such as nuts, figs and other dried fruits, spices and crude vegetable oils. They are produced by moulds in particular *Aspergillus flavus* and *A parasiticus*, which grow on plants before harvest or on foods during storage.

Aflatoxins have been shown to cause cancer in animals and humans. Unlike most fungi, *Aspergillus flavus* is favored by hot dry conditions. The optimum temperature for growth is 37°C, but the fungus readily grows between the temperatures of 25-42°C, and will grow at temperatures from 12-48°C. Such a high temperature optimum contributes to its pathogenicity on humans.

Aflatoxins often occur in crops in the field prior to harvest. Postharvest contamination can occur if crop drying is delayed, and during storage of the crop if water is allowed to exceed critical values for the mould growth. Insect or rodent infestations facilitate mould invasion of some stored commodities.

Maximum levels for aflatoxin are set by the Codex, the United Nations standards setting body. Codex was created in 1963 by FAO and WHO to develop food standards, under the Joint FAO/WHO Food Standards Programme. For more information on aflatoxin go to [www.aspergillusflavus.org](http://www.aspergillusflavus.org)

## How to reduce risk of microbiological and pesticide contamination of nut product

Reducing risk of contamination involves every step in the food chain and growers, processors and marketers alike

must be proactive in ensuring product safety. This means vigilance in sanitation from the orchard floor and harvest techniques to best practice drying and processing, cleanliness of machinery and storage conditions.

Product quality in orchards and processors that are audited under international accreditation systems is ensured. In addition, nut industries around the world have developed best practice guidelines for growers, manufactures and storage. As part of its commitment to safe handling of nut product, the Almond Board of California (ABC) Food Quality and Safety Program has established Good Agricultural Practices (GAPs) to minimise potential microbiological and chemical hazards during production and harvesting of almonds. Good Manufacturing Practices (GMPs) apply to the processing sector. These self-regulatory guides are based on risk reduction and while they are designed for the almond industry, they could equally apply to other types of nuts. The basic principles of GAPs listed in the ABC's Food Quality and Safety Program include:

- Prevention of microbial contamination of almonds is favoured over reliance on corrective actions once contamination has occurred. Once pathogens are on almonds, they are nearly impossible to remove without resorting to a lethal process.
- To minimise microbial food safety hazards in almonds, growers should use GAP's in those areas over which they have control, such as sources of water, orchard management, fertiliser practices, etc.
- Anything that can come in contact with almonds has the potential of contaminating it.
- Whenever water comes in contact with almonds, its source and quality dictate the potential for contamination. Irrigation water and water used to mix pesticides are two primary sources of contamination.
- All pesticides should only be used in strict accordance with manufacturer recommendations.
- Practices using manure and/or compost should be closely managed.
- Worker hygiene practices play a critical role in minimising potential contamination.
- Accountability is important to a food safety program. The ability to trace back product from the consumer to the farm is critical.

GAP's for growers detail the importance of knowing the history of the orchard site, and provide guidelines on soil, pesticide use, and pest control including a recommended rodent control program. To view the ABC documents go to [www.almondboard.com](http://www.almondboard.com) under their Food Quality and Safety Program. More on food safety in California can be found at [www.ucfoodsafety.ucdavis.edu](http://www.ucfoodsafety.ucdavis.edu) and [www.ucgaps.ucdavis.edu](http://www.ucgaps.ucdavis.edu)

## Code of practice for the prevention of aflatoxin contamination

A draft code of practice for the prevention and reduction of aflatoxin contamination in tree nuts prepared by the Food and Agriculture Organisation of the United Nations is intended to provide guidance for all persons involved in producing tree nuts for entry into international trade for human consumption. Points in this code of practice include:

### Harvest

- Harvesting of nuts should begin as soon as practicable after maturation to minimize problems involving fungal attack and insect infestation. Some varieties of nuts become contaminated with aflatoxins while still on the tree as a result of insect infestation and hull splitting. Therefore, the earlier the harvest, the less chance there is for contamination to occur because there is a greater chance that the outer hull will remain intact to protect the underlying shell from insects and fungal spores. The area under the trees should be cleared of any debris or decayed materials where *A. flavus* or *A. parasiticus* might reside.
- In regions where nuts are harvested by shaking the trees and/or allowing mature nuts to fall to the ground for collection by harvesting equipment or by hand, the orchard should not be used for grazing animals.
- The nuts, after collection, should be sorted to remove damaged nuts, foreign materials, and transported, as soon as possible to a processing facility for immediate processing in containers that are clean, dry and free of insects and visible fungal growth. High humidities, which are conducive to proliferation of mould and development of mycotoxins, should be avoided to the greatest extent practical. Conveyances for transporting nuts should be constructed of a material that will permit thorough cleaning and maintenance so as not to constitute a source of contamination for tree nuts. If the nuts cannot be transported immediately to a processing facility they should be temporarily stored in a way that will keep them dry and protected from rain, insects, rodents, birds and drainage of ground water.

### Post-harvest

- Nuts remaining on the trees after harvest should be removed during the winter months to reduce the overwintering of various insect populations.
- The orchard floor should be cleared of litter and debris from the harvesting operations in order to decrease the colonization of *Aspergillus* fungi.
- Containers, equipment and machinery that have been used for harvesting operations should be cleaned and stored in a clean location to minimize inadvertent contamination with fungi, chemicals, fertilizers or toxic substances.

- Harvesting and storage procedures implemented each crop year should be documented.

To view the 'FAO draft code of practice for the prevention of aflatoxin contamination' document go to [www.fao.org](http://www.fao.org)

## MPC Field Day Report

### Tweebreena – October



#### *Part of the MPC field day group at Tweebreena orchard discussing gully erosion management*

An informative "orchard walk" style field day was conducted at David and Ann Jones 'Tweebreena' property in October and was well attended by sixty five people.

Featured topics were:

- working safely near overhead power lines in orchards
- canopy management - tree removal at 'Tweebreena'
- nut in shell drying using a 'Bungay style drying system'
- erosion control
- demonstrations of an aerator and prototype mulcher

### Working safely near overhead power lines

Michael Dall from WorkCover addressed the danger to macadamia growers when working near power lines in their orchards.

There is a Code of Practice – **Work Near Overhead Power Lines** available to macadamia growers, setting out the permitted safe working distance which must be maintained from power lines.

The Code illustrates various voltages of power lines and the critical factors which apply. The code is available from the local office of WorkCover or on line at [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au)

## Canopy Management

Using tree removal the Jones family embarked on a canopy management plan to introduce light back into their mature trees and onto the orchard floor.

The orchard has two plantings with two different densities. The first in the early 80's was on a 10 x 5 metre spacing and has 246, 508, H2, 344 and 741 varieties. The second planting in the early 90's was planted at 8 x 5 metres with 344 and 660.

The close spacing of this second planting caused trees to compete for light, creating tall trees with hollow centres and little canopy growth near the base due to lack of light penetration.

These trees have expanded to cover the inter-row space which introduced problems of loss of ground cover, soil erosion, and an orchard floor that remains wet through harvest with a subsequent major reduction in yield.

Greg Jones said: "Work to remove every second tree in every second row (25% tree removal) in the 8 x 5 blocks began in 2010. Thinning of the remaining rows will take place at a later date. Little sunlight reached the orchard floor in the 8 x 5 blocks and production was very low. These areas did not dry-out during harvest and harvesting was very difficult in the wet conditions."

"Since the tree thinning" said Greg, "we now have a lot more sunlight in the trees and on the orchard floor, ground cover is returning in the form of weeds and some grass and the ground dries out much better. We have planted smother grass in these areas as there is now plenty of light to allow it to grow. The trees are producing new shoots and are opening up and filling in the space from where the trees were removed."

"After we finish the 8 x 5 metre blocks we will probably start on the 10 x 5 blocks. We will see how this work goes and then make our decision based on the results", said Greg Jones.

## Nut in Shell drying.



*David Jones (centre) describes his Bungay style macadamia drying system and how it has assisted in post harvest quality retention*

## Tweebreena a 40 tonne 'Bungay style' macadamia drying system

"We had to hold the nuts in the outside blowdown silos for far too long before we could resort during wet weather. As a result of the nuts stored and remaining wet, we had a reduction in quality from brown centres, discolouration and mould. This new system dries the nuts quickly and efficiently and we can get them to the factory

***The close spacing of this second planting caused trees to compete for light, creating tall trees with hollow centres and little canopy growth near the base due to lack of light penetration.***

The removed trees were stacked up and then taken away by Surfmill contracting for free as part of the co-generation power plant at Broadwater Sugar Mill.

This first stage of tree removal was a big job, with trees cut and tractors used to haul the felled trees out. To make the job easier and to retain the wood chip as a mulch on the farm, David Jones recently bought an 18 inch self powered chipper and a medium sized excavator with a grab to feed it. The remaining 8 x 5 blocks will have 25% of the trees removed by felling with chain saws. After felling it will be chipped, with the wood chip spread under the remaining trees.

for processing with the original quality retained. The bins hold about a week's harvest" said David.

Air recirculated through the four by ten tonne bins is sourced from just under the roof in the dehusking/ machinery shed. Dry air is pumped by fan in the base of each bin through the nut bed where it accumulates moisture from the nuts.

When the circulated air accumulates to a pre determined moisture level, an exhaust fan purges some moisture laden air from above the nut bed. During purging new dry air is introduced and the cycle re-commences. If the introduced air is not sufficiently dry to be effectively used, a bank of electrical elements in the intake duct is turned on by the system. Heat expands the air which can carry

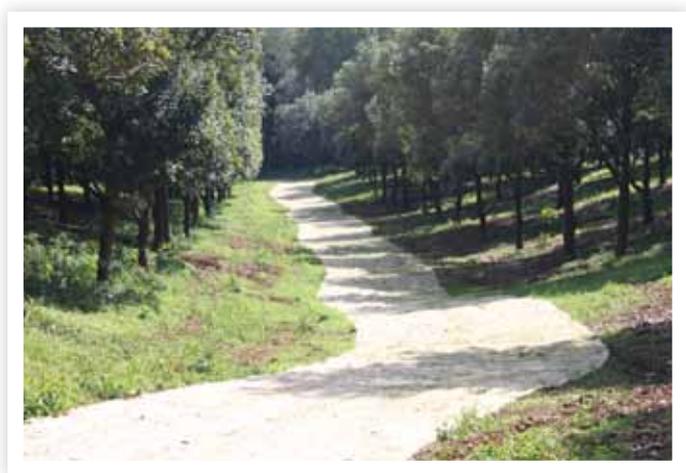
a higher level of moisture. The elements may be in use for as little as 60 seconds in this process. When the nuts reach a pre determined moisture level the computer controlled system closes down.

The original 'blow down' silos are now only used for pre delivery storage of dried nut in shell.

### Erosion Control.

Trees had been planted across a steep gully at the rear of the orchard prior to purchase by David. This gully traverses the tree rows for some 250 metres and carries a lot of water during a heavy rainfall event. Trees planted in the gully shaded the ground and as a result, grass died out.

With no protection, the gully eroded and the area became very difficult to manage and caused problems for harvesting.



*The gully restored following damage created by soil erosion*

With assistance from Gerry Ryan of the Catchment Management Authority (CMA), a plan to reconstruct the gully was formulated.

In 2009 trees were removed from the gully allowing sufficient light to reach the gully base so grass could regrow.

Large chunks of crushed rock were spread across the gully to revert the base shape from a 'V' to a dish shape. Rocks were then covered with soil.

The area was rolled and seeded with millet, which grew rapidly and held the soil in place. Straw bales were fixed in place across the gully at 24 metre intervals on tree lines to slow the flow rate of water during rainfall. Then on June 3rd 2010 the area was drenched by a rainfall event which delivered 200mm in a few hours. Much of the work held firm. There was however a trench formed down the centre of the gully and several holes formed that corresponded with the tree rows where the soil may have been less compacted.

To fix the damage the holes and small trench were filled with soil using a tracked 'Bobcat', re-rolling the area, laying a jute mat and sowing a grass mix to stabilise the soil.

The jute mat was used because it gives temporary protection to the soil surface until the grass establishes. If there is heavy rainfall while the gully is regressing, the runoff water will flow over the upper surface of the mat and not scour out the soil.

The jute mat covering is 4.0metres wide (two widths of 2.0m mat were used) and runs for the length of the gully. At the time of the field day the grass mix had started to germinate and there were grass shoots starting to protrude through.

Gerry Ryan from the CMA said "the mat has to be well pinned down to a smoothed soil surface to ensure that the grass seed germinates and grows through the mat, thus holding the mat in place. If the soil surface isn't smooth, the seed germinates and grows under the loose mat, not through it. This causes the mat to be lifted by the grass and may become less effective in stopping soil erosion". The jute mat should rot away in about six months, leaving the grass to hold the soil in place.

The block of trees that the gully runs through may now be harvested without the difficulty that has been experienced.

**Did you know that the Northern Rivers CMA has grants available for works such as repairing this gully? To find out more contact Gerry Ryan at the CMA on 02 6627 0170.**

### Under tree mulcher and aerator



*Under tree mulcher*



*Under tree mulcher showing deflecting veins*

Graham Powick from Agrifarm recently demonstrated two of the machines Agrifarm manufacture at their factory in Taree, NSW.

The mulcher machine is a prototype and it allows mulched material to be thrown side-ways. The rear of the machine is open and has deflecting veins to direct mulched material sideways which can be hydraulically adjusted left or right for multi directional placement of mown material.

### Soil Aerator

A recent demonstration was conducted of an Agrifarm AV series 'Agrivator'. This machine is designed to penetrate the soil and shatter compaction. The purpose is to produce a healthier soil environment by allowing air and water to enter the soil and break up soil that has been compacted by orchard traffic.



*The Agrifarm soil aerator demonstrated.*

*MPC would like to thank the Jones Family for hosting this field day and showing us the changes they have been making on the farm. We also thank them for sharing their experiences and knowledge with all of us*

## For Sale

### Ferrari Reversible Tractor

a/c cab, 80HP, Fair Condition

\$20,000 ono

**Call Bill Moorhouse 02 66295 0988**



### Silvan Airblast Sprayer

1000L tanker, Trailing model, Fair condition

\$3,000 ono

**Call Bill Moorhouse 02 66295 0988**



## Wanted to Buy

### Single scroll dehusker(s)

Price negotiable

**Call Cliff James 02 6687 8035**



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