

Organic news

Autumn Edition 2011



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Organic macadamias gain momentum

One of the world's largest macadamia nut processors, the Australian Macadamia Processing Company (MPC) recently announced the launch of an organic line, reflecting the sharp increase in demand for this Australian product. The new organic line is creating a lot of interest among small to medium sized growers of macadamias in

northern NSW. That interest is not just driven by the 30% premium (based on 2010 prices) for organic nut in shell. A growing critical mass of farmers is looking towards more sustainable farming practices and organics is seen as a way of increasing their sustainability, both financially and environmentally.

According to Marketing Manager at the Australian Macadamia Society, Lynne Ziehlke, there is huge potential for organic macadamias in export markets.

"Australia has a reputation as a reliable supplier of premium nut in the major markets in Europe and North Asia, and that's where there's a lot of interest in organic products. Our ability to meet that demand is constrained by supply at the moment, as there is a three year conversion phase to ensure the standards are met. Our Australian standards are very high, compared to other countries. But those standards are important to maintain, and it's why our products are so highly sought after".



Organic macadamia producer Cath Ford harvesting macadamias in a well grassed orchard with plenty of light.

MPC have backed the growth in organics, and are working with growers at farm level to help meet the challenges of converting to an organic production system. Kevin Quinlan, Supply Chain Manager with MPC says going organic is a way that some farms can become more profitable and sustainable.

“At present less than two and a half percent of the Australian macadamia crop is organic. We can see that steadily growing in the next few years.”

“We are helping growers, whether they be long term organic farmers or in conversion, to maximise their yields. A big part of that is to help minimise the risks for growers making the shift to organics.”

There is no shortage of challenges for organic macadamia growers. On the Alstonville Plateau near Lismore, the warm, humid conditions coupled with high rainfall of around 1800mm per annum create an environment favourable to pests and diseases, while intense rainfall events play havoc with the productive but fragile red volcanic soils.

Organic farmers have played a big role in improving the sustainability of soils on macadamia farms. Organic farmers had a significant involvement in projects such as the Good Soil Project and the Good Worm Project, initiatives of Tuckombil Landcare Inc. in partnership with NSW I&I (then NSW Agriculture) and the Natural Heritage Trust, helping to develop the Soil Health Card which has proven to be an important diagnostic tool for organic and conventional growers alike (see:

<http://www.dpi.nsw.gov.au/agriculture/resources/soils/testing/health-card>)

New practices funded by research under the industry R&D levy, have been embraced by the macadamia industry over the last ten years helping to make organic production feasible. The successful introduction of the Trichogrammatid wasp for the control of nut borer less than ten years ago has significantly reduced reliance on sprays. Much of the early work on this biocontrol was done on organic farms near Alstonville. However, there is still major areas of concern that include the pests, fruitspotting bug (FSB) and lace bug and the fungal disease husk spot.

Increased knowledge and research of macadamia varieties has given insight into the most suitable trees for macadamia farmers to plant. Thicker shelled varieties have been found to be less susceptible to FSB. Growers have learnt that varieties A16 and A38 are notorious for “stick tight” nut in husk which acts as a spore reservoir, making them problematic in an organic orchard. Tests by researchers from Queensland Dept of Employment, Economic Development & Innovation (DEEDI) and the University of Queensland are also

looking at the possibility of breeding resistance into new varieties. Evidence is also mounting that open tree structure is beneficial to discourage macadamia lacebugs, which prefer dark locations in old trees. For these reasons, some orchards are better suited to organic production than others.

I&I NSW is leading a new levy funded collaborative project with industry to tackle fruitspotting bug. It is estimated that fruitspotting bug costs the industry around \$9 million each year (farm gate value) in lost production. The project is using a truly integrated approach to manage the pests, including development of potential biocontrols, trap crops and pheromone technology to monitor for the pest. While these non-chemical options won't totally eradicate the pest, its hoped that levels can be reduced to a point where damage is negligible. This work is highly relevant to both conventional and organic producers.

According to Cath Ford, an organic macadamia farmer from Rosebank and Member of the NSW Organic Ministerial Advisory Council the use of mulches, composts and nitrogen fixing clovers as ground covers is not just limited to organic farms.

“Many conventional growers are realising the benefits of high organic matter in their soil. Rocketing chemical fertiliser prices in 2008 created an interest in organic alternatives and although driven by the price of organic fertilisers and their availability, many of those growers who made the switch are now benefiting with better tree health in their orchards.”

With this widespread use of mulches and composts for boosting soil organic matter, conventional and organic growers are seeing positive results over time with improved tree health and more resilience to pests and diseases. Mulching with woodchip from prunings and returning it to the orchard floor is becoming a more common practise. In fact, the increased demand for organic amendments has resulted in the supply of chicken manure to becoming more and more limited, with growers looking to different sources of this material such as council green waste. Where traditionally growers were focussed on chemical analysis of soil, they are now also becoming more engaged in the physical properties and biological aspects of soil health.

As Cath Ford says, macadamia farmers are rapidly becoming very skilled at recycling nutrients on the farm.

“These days, virtually all of the bi-products from harvesting macadamias are returned to the soil, and composted husk is a major source of nutrient on the farm. Its hard to believe that a few years ago, husk was often left to rot in a pile as many growers didn't realise its sustainable value.”

“Organic macadamia farmers do not tend to look at their trees in isolation. Its more about the biological health of the soil assisting the tree, the inter-rows giving nutrition to the trees when slashed and the health of the biodiversity around the orchard.”

I&I NSW has worked closely with organic and conventional macadamia farmers on important issues of farm management such as trap crops, pest management, efficient shade resistant and nutrient producing groundcovers, prevention of soil movement and increasing light exposure into the orchard. Whilst there are further issues to be addressed, the Australian organic macadamia grower is now much better placed to deliver a highly desirable product to the world.

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New spelt genotypes selected

A collaborative research project investigated the agronomic and quality attributes of spelt and its potential as a high value grain for organic production. The project's main objective was to select superior lines that are well adapted to organic production systems, and which have acceptable nutritional and processing quality.

The project, funded by the Rural Industry Research and Development Corporation's (RIRDC) Organic Produce Program, involved researchers from NSW Industry & Investment's (NSW I&I) Yanco Agricultural Institute and the EH Graham Centre for Agricultural Innovation (an I&I NSW and Charles Sturt University collaboration) Wagga Wagga, and Victoria Department of Primary Industries at Rutherglen.

From 2006-2009 over 100 spelt genotypes were screened for their yield, quality, disease resistance and response to limiting levels of phosphorus in trials at Wagga Wagga Agricultural Institute, Rutherglen and Cootamundra.

Initially, the spelt genotypes were seed increased at NSW Industry & Investment's (NSW I&I) Organic Research Site at Yanco. Field observations, in addition to DNA and disease screening, reduced selections to the top 20 lines which were then further evaluated in trials at certified organic sites located at Yanco Agricultural Institute and Victoria Department of Primary Industries' Rutherglen Research Centre and on David and Mary Booth's organic farm 'Buronga' at Cootamundra. A final selection of two genotypes was made in 2009 and

these were then seed increased on certified organic sites at Yanco and Cootamundra in 2010.

Key findings

The spelt genotypes exhibited a wide variation in agronomic and quality attributes. Spelt wheats were lower yielding, later maturing, generally produced more biomass and tillering, and had a lower grain harvest index and lower P efficiency for grain production, than common bread wheat cultivars.

Our research identified three genotypes as potential replacements for the industry standard spelt (known colloquially as 'Kamarah'). The new spelt genotypes (ST1040 and ST1041) exhibited superior yield and disease resistance characteristics when compared to 'Kamarah'. Yields equivalent to 35 % greater (an additional 0.6 tonnes per hectare) were achievable with the new genotypes under organic production.

The genotype ST1041 is typical of spelt in that it is not free-threshing, retaining its tightly bound hull at harvest. The genotype ST1040 is partly free-threshing. Figures 1 and 2 show the spelt genotypes.

Optimum performance of the spelt genotypes was achieved by sowing in May through to mid June, although earlier sowing may also prove successful.



Figure 1: Spelt genotype ST1040 grain



Figure 2: Spelt genotype ST1041 grain (hulled and de-hulled)

The spelt genotypes exhibited a wide variation in genetic and agronomic attributes. DNA (DArT) analysis indicated that some spelt genotypes are spelt / wheat hybrids. A range of disease (stripe and stem rust) & aluminium tolerances were also identified.

Results of the phosphorus uptake trials revealed that spelt genotypes were more efficient in converting internal P into biomass, but were less efficient in converting applied P or internal P into grain yield.

The spelt genotypes achieved (on average) 16.7% grain protein compared to 15.7% for wheat. Several spelt genotypes were found to have comparable or better flour extraction rates than wheat. Further assessments of end-use suitability (baking, pasta) are required for the new genotypes.

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Australian organic standard reaches new milestone

The first round of amendments to the Australian Standard for Organic and Biodynamic Products (AS6000) was recently finalised and the amended Standard published this month.

“Of these, the most significant and controversial will permit the use of synthetic amino acids as a feed supplement where sufficient amino acids from natural sources are unavailable,” said Craig Sahlin, chair of the standards committee FT-032 which developed the amendments.

“However, this permission is intended to enable monogastric livestock producers to transition away from the synthetics currently permitted under some private organic standards, and will automatically cease after three years.”

The amendments were developed by the committee to address priorities not resolved in time for initial publication in AS6000 in October 2009.

A companion publication containing certification procedures (MP100) was also published at the same time as AS6000.

“MP100 will also be amended to include detailed criteria for the recognition of imported organic products or ingredients that have been certified under international organic standards considered to be equivalent to AS6000,” Mr Sahlin said.

“Around 60 per cent of organic products sold in Australian retail shops are either fully imported or a composite of imported and domestic ingredients,

so these equivalency provisions are essential to enable full implementation of AS6000.”

The amended MP100 was published in November and it is anticipated that the amended AS6000 will be published this month.

Publication of the amended documents will complete the development of Australia’s first national domestic standard for organic and biodynamic products.

For ongoing maintenance of the standard, the 20-member FT-032 committee will be reconstituted to 13 or 14 members plus the Chair.

Nominations are now being sought for the reconstituted FT-032 committee that will have 13 members, including 5 members drawn from the organic industry and two members representing consumers, plus the Chair

Mr Sahlin said the committee would continue to have a balanced membership, representing key stakeholder interests, including at least five members drawn from the organic industry and two members representing consumers.

The new committee will meet in early 2011 to begin a two-year work program, partially funded by the Australian Government, including consideration of wine-making inputs, mushroom production, cosmetic ingredients and natural colours and flavours.

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OFA Environmental Research & Education Trust

In the past 15 years the Rural Industries Research and Development Corporation (RIRDC) has provided a small (approximately \$275,000 per year) but very valuable fund for organic research in Australia. However it has now been revealed that RIRDC will no longer be supporting a specific organic R&D program.

In response to the critical shortage of funding for research into organic systems in Australia the Organic Federation of Australia (OFA) has established the OFA Environmental Research and Education Trust. The Trust was set up to enable the organic industry, and all others interested in organic farming, to invest in scientific research and education relevant to organic and bio-dynamic management systems. Donations to the Trust are fully tax deductible.

The Trust's Board consists of a number of eminent scientists, business identities and organic industry representatives:

Professor Peter Cornish (chair)
The Hon. John Kerin AM
Dr Helen Scott-Orr
Mr Terry Hehir
Dr Paul Kristiansen

The official launch of the Trust was held in Sydney in August 2010. During the Launch, Professor Peter Cornish, the Chair of the Trust, outlined the role of the Trust in coordinating much needed investment in scientific research and education relevant to organic management systems. Professor Cornish's speech has been reproduced at the OFA's website:

<http://www.ofa.org.au/listmanager/display.php?List=2&N=55>

To learn more about the OFA Environmental Research and Education Trust go to:

<http://www.ofa.org.au/pages/Organic-Trust.html#item-2>

Organic vineyard update

Karen O'Malley has provided this update on progress with the I&I NSW organic vineyard at Bathurst Agricultural Research Station

It has been an interesting season in our organic grape trial this year. Like many growers we experienced a very wet and humid few months with the threat of downy mildew ever present. Fortunately for us, our aim this year was to encourage as much wood growth and training as possible, removing the berry clusters to drive the process.

Not having to worry about producing a quality crop meant we only resorted to spraying copper twice in the whole season - much less copper than would have been required had we been trying to produce a berry crop. Potassium bicarbonate was used twice initially from budburst and was quite effective, monitoring showed the leaves were clear from downy mildew infection right up until mid December when the weather really increased the pressure and we resorted to a copper spray when oil spots appeared on a few random vines.

The resilience of the vines up until then surprised us. All around there were reports of growers losing the battle with mildew and needing to spray fungicides almost weekly. However our vines were thriving with regular seaweed applications and minimal treatment. Perhaps the lack of infection could be attributed to a combination of good fungi

and bacteria providing ecological health on the leaves, frequent weed control and the fact the new vineyard is relatively isolated from other vineyard enterprises.

The reason we have tried to avoid using copper and sulphur as much as possible in the establishment the organic vineyard block is we want to encourage a healthy and robust ecological community both in the canopy and in the soil. Both compounds can knock the "good" bugs around and reduce the soil life activity. The abundance of natural predators was obvious this year- predatory mites, lacewings, spiders etc have naturally migrated and thrived in the block.

Sauvignon Blanc proved to be more resistance to disease pressure than the Tempranillo this year. Next year will be the first official crop for the block and we will be stepping up the monitoring program to try to keep the copper use to a minimum while protecting the berries.

A recent 5 yr study by GRAB (Avignon, France) and FEM-IASMA (San Michele all'Adige, Italy) found that that copper is still the best fungicide in an organic vineyard system. However, the use of new low copper rate formulations and the association of copper-free alternatives were able to control downy mildew with a concomitant reduced impact to the environment.



Bathurst organic vineyard technical assistant Tony Hellyer applies a soil stimulant to vines

Efficacy was good under low or medium disease pressure, but decreased when the pressure increased. The trials carried out confirmed that blossom stage is the most risky period for downy mildew infection and that a reduction of the number of treatments, with consequent reduction of the yearly total amount of copper, is possible by using your "copper quota" during this period. We will try to replicate these recommendations at Bathurst.

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News, publications, commentaries & events

News & commentaries

Organic industry a high flier

IBISWorld provides independent up to date research on over 500 industries, including statistics, analysis and forecasts. Their latest industry forecast puts Organic Products amongst the top 5 growth industries for 2011. Here is what they had to say:

IBISWorld industry report X0013

Demand for organic products in Australia has risen steadily over the last five years, as consumers increasingly factor in the health benefits and environmental impact of their food choices. Strong growth has also been supported by major retailers – such as Coles, Woolworths and McDonald's – promoting their organic lines; 5.3% of industry revenue comes from supermarkets, compared with 11.4% from farmers' markets, and 10.2% from specialist organic retailers.

IBISWorld predicts Australian organic farming will enjoy revenue growth of 14% (\$58.35 million) in 2011, with higher disposable incomes, coupled with rising awareness of environmental sustainability and the increased convenience of organic foods contributing to continued growth.

Australian farmers are benefiting from higher demand for organic produce (51.4% of which is made up of fruit and vegetables) since it attracts greater premiums. However, IBISWorld anticipates that as organic goods become more readily available, the price of certified produce should decline. Source: IBISWorld Pty Ltd. Special Report X0013, January 2011. <http://www.ibisworld.com.au>

I&I organic website gets a facelift

The Industry and Investment NSW organic farming website has recently undergone a make-over. In addition to a number of new organic farming publications there are now links to Case Studies which profile organic and bio-dynamic farming enterprises throughout Australia.

Information is provided on:

- [Organic certification and conversion](#)

- [Organic grain production](#)
- [Organic vegetable production](#)
- [Organic horticultural production](#)
- [Organic livestock production](#)
- [Organic fertilisers and pesticides](#)
- [Links](#)
- [Bookshop, and](#)
- [Research projects](#)

The website can be found at:

<http://www.dpi.nsw.gov.au/agriculture/farm/organic>



A number of organic farming case studies are highlighted on the I&I NSW organic farming website

Organic agriculture knowledge hub

Rural Industries Research and Development Corporation has established an organic agriculture website that provides access to RIRDC's organic research reports, Australian research and development corporations' content and other targeted sources of organic information on the web. The website can be found at:

<http://www.organicshub.com.au/OKH/Home.html>

CropMate - a weather companion for farmers

CropMate is a website to help you analyse climate and weather information for your location. It is designed to provide timely and accurate information to help you make informed planning and management decisions during the crop cycle.

CropMate is divided into 5 sections which follow the crop cycle. Each section uses climate and weather information and seasonal forecasts to help make decisions for your particular location. The



CropMate website can be found at:
<http://cropmate.agriculture.nsw.gov.au/>

Rabbitscan

Recent rainfall across eastern Australia is expected to cause populations of rabbits and many pest animals to increase and mapping where they occur is vital in coordinating on-ground control.



I&I NSW has launched **RabbitScan**, a new website for landholders, communities and pest controllers to record sightings of rabbits, map the damage they cause, and report where control has been implemented. Rabbitscan is an Australia-wide 'citizen science' project, inviting anyone to spot, collect and report visual or other evidence of rabbits and their impacts. Site visitors can create a rabbit management map for their local area.

See: <http://www.feralscan.org.au/rabbitscan/>

New organic publications from I&I NSW

Organic Spelt Production Primefact

Coinciding with the completion of the project "Optimising the quality and yield of spelt and other specialty grains under organic production" a new Primefact "Organic Spelt Production" is now available for producers.

The Primefact provides spelt growers with details on uses for spelt, crop management, weed and pest management, cultivar selection (including descriptions of new spelt genotypes), harvesting and storage, and processing and marketing.

The Primefact will soon be available to download on NSW I&I's organic farming website:

<http://www.dpi.nsw.gov.au/agriculture/farm/organic>

Events

The International Symposium on Managing Organic Matter & Using Compost in Horticulture: 4-7 April, 2011, University of Adelaide.

The International Symposium on Organic Matter Management & Compost Use in Horticulture will present, discuss and explore options of using compost and other organic soil amendments for managing & improving horticultural soils and production systems, including amenity horticulture, nurseries, and

protected cropping. Symposium website:
<http://compost-for-horticulture.com/>

Branding and Marketing Natural & Organic Products: tangible tools to improve profitability. 30-31 March, 2011, Citigate Central, Sydney

Branding and Marketing Natural & Organic Products: tangible tools to improve profitability is a two day conference aimed at exploring the changing consumer trends and market segments while providing tips, tools and methods for maximising profitability.

With a range of speakers from various parts of the industry, the conference will be an excellent opportunity for anyone in the organic industry to gather knowledge on the organic consumer and their engagement with the industry.

Conference website:
<http://www.maximiseorganicsales.com/>

Websites of interest

<http://www.rodaleinstitute.org/>
<http://www.core-organic.org/index.html>
<http://www.organic-systems.org/index.html>
<http://www.whatsonmyfood.org/index.jsp>

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