Volume 1
Issue 5
May 2004

Organic News.

www.agric.nsw.gov.au

ISSN 1449-325X

Key organic industry R&D bid passes first hurdle

Organisers of the bid to establish a Cooperative Research Centre (CRC) in Organic Food and Farming Technologies have received notification of success in the initial stage of the bid process. This followed a formal invitation to proceed to Stage 2 from the Federal Department for Education, Science and Training.

Recognising the industry's need for more R&D, the bid for Federal Government funding over a seven-year period, if successful, is expected to provide widespread benefits across the entire organic supply-chain and the food industry in general.

Five major research and education programs have been identified with a focus on fast-tracking the commercialisation of Australian production of organic foods; developing more uniform national standards for product quality; systems and input product certification; and strengthening Australia's export capability to capitalise on the greater offshore demand for organic foods.

Representing a cross-section of the organic industry and stakeholders, cooperative sponsors of the bid initiative include a major retail chain (Coles), national universities and educational institutions, state departments of primary industries, major food processors and input suppliers. Each of these has committed monetary funding and in-kind support to about $32 million.

Joining with other core and supporting participants, the National Association for Sustainable Agriculture Australia (NASAA) was the only organic industry certification body formally committed to participating in Stage 1 of the bid.

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NSW Agriculture

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However, Australian Certified Organic (ACO) has now also agreed, in principle, to participate in the full application for the CRC.

NASAA Chair, George Devrell said: 'whilst the bid of the previous year (also supported by NASAA) was not accepted, it came close enough to provide the impetus to develop the current bid with a greater backing from large corporations, industry representatives, and other private sector participants.' While positive that the bid will prove successful, Mr Devrell also acknowledges the need for more industry support. 'Whilst we remain positive about the future of the CRC bid, we acknowledge that there is still room for wider involvement and commitment from additional participants, particularly from industry.

'A green light to the development of the CRC would demonstrate the recognised value placed on the national organic industry through a commitment to R&D, placing Australia on a strong footing in taking its place in the spotlight at the 2005 IFOAM World Organic Congress in Adelaide.' Representatives from the participating organisations met in Sydney last week to further the bid process, with the submission of Stage 2 scheduled for the end of July.

More information on the CRC's application development and participation is available from the Bid Manager, Leanne Fitzpatrick, Birubi Innovation Pty Ltd, on (03) 9686 8866.

Literature review and inventory of alternatives to copper for disease control in the Australian organic industry

Copper has traditionally played a significant role in organic systems for combating some fungal diseases. More recently, however, organic standards have discouraged the use of copper for diseases. It has, therefore, became clear that alternative products and technologies are required to maintain productivity and profitability in the organic food industry.

Organic farmers often make use of 'alternative' products for pest and disease control. Their decision to use these products is frequently based on anecdotal (as opposed to scientific) evidence, as to their efficacy. These alternative products are usually unregistered or are sold without sound data. The key limitation of alternative products is that their efficacy of disease control, especially when compared to registered chemical fungicides, is often lower. Because of this, commercialisation and registration of these alternate products in conventional horticulture is often not undertaken. Manufacturers of these products may also view the organic market as not large or profitable enough to warrant the expense associated with bringing these products to registration.

A recently-completed project conducted by NSW Agriculture and commissioned by the Rural Industries Research and Development Corporation (RIRDC) has been investigating the availability and efficacy of organically-acceptable alternatives to copper disease control products; both internationally and within Australia. The soon to be published report provides:

- A comprehensive review of data and literature available on alternatives to copper for disease control.
- Some conclusions on the potential efficacy of these alternative products and for their possible use in the Australian organic industry, and
- Recommendations for increasing the availability of these products to organic farmers in Australia.

Part of the project involved a 'National Call for Expressions of Interest' to provide information on products available in Australia. Approximately 27 companies or individuals responded and were interviewed regarding the use of their products. From the interviews, it became clear that many products and technologies are not being pursued to commercial availability. Reasons for this included the strict registration requirements in Australia coupled with the limited market for these products.

The report ranks alternate disease control technologies according to the number of refereed publications and the confidence/significance of the data presented. Three categories for ranking technologies were chosen:

1. Technology highly-relevant.
2. Technology shows promise.
3. Not enough information currently available.

Technologies considered **highly-relevant** for disease control include:

- Selected biological control agents
- Compost
- Inoculated compost
- Surfactants and biosurfactants
- Anti-fungal compounds.

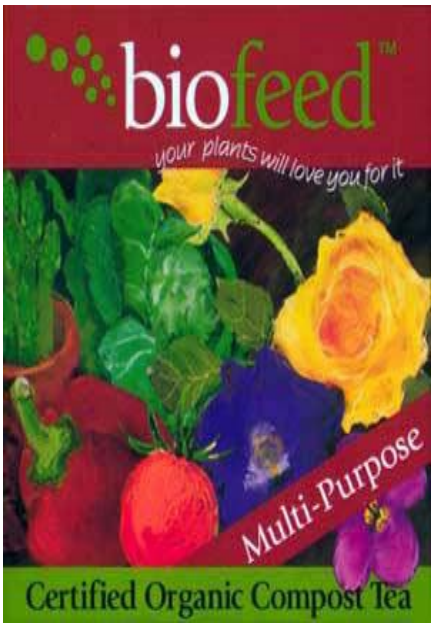
Technologies that **show promise** include:

- Compost tea
- pH modifiers and bicarbonates
- Foliar calcium and silicone
- Milk products and other organic amendments (molasses)
- Essential oils (tea tree)
- Polymer coatings.

Those technologies where **not enough information is currently available** include:

- Vermiculture products
- Plant extracts excluding essential oils (rhubarb)
- Seaweed extracts
- Colloidal silver
- Potassium permangenate
- Vinegar
- Household antiseptics.

Below: Compost and compost teas show promise as an alternative disease control option to copper. The efficacy of these products needs to be evaluated.[1]



In addition to the products that have been reviewed, other technologies, including induced and genetic resistance, cultural control, and integrated pest management (IPM), are seen as highly-relevant to reducing disease in organic horticulture.

Generally, very little scientific evaluation of alternative products is being undertaken in Australia, even though a range of products/technologies claim to reduce plant diseases.

[1] The product trade names in this publication are supplied on the understanding that no preference between equivalent products is intended and that the inclusion of a product does not imply endorsement by NSW Agriculture over any other equivalent product from another manufacturer.

This report strongly urges that better scientific evaluation of promising products is undertaken and also suggests that the organic industry itself should investigate methods for bringing these products to commercial availability. This would probably include the requirement for licensing the product through the Australian Pesticides and Veterinary Medicines Authority (APVMA) at the National Registration Authority (NRA).

Researchers for this project are: Melissa Van Zwieten[1], Gordon Stovold[2], Lukas Van Zwieten[1]*
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Integrated Weed Management Alternatives — Trials Investigating In-crop No-herbicide Weed Control Options

Over the coming two months, Organic News *will report the results of two programs that have been run over the last three years looking at alternatives to the chemical control of weeds during the cropping phase:*

- *Exploiting the preferential grazing habits of sheep to graze weeds from within a crop; and*
- *Exploring the value of commercial weeders for controlling weeds pre- and post-crop emergence.*

These trials have been conducted by Chris Penfold and MS Miyan from the University of Adelaide's Roseworthy Campus. This month's article is on the findings of the palatability study.

Exploiting preferential grazing habits of sheep to graze weeds from within a crop

The unpalatable nature of chickpeas to sheep has long been recognised by farmers. This fact has been used over the years to reduce weed competition and seed-set by grazing the crop with sheep at light stocking rates. There has, however, been a dearth of information regarding the palatability of other broadleaved crops to sheep; preventing the further exploitation of this 'virtue' management option for in-crop grazing.

Materials and Methods

In a replicated field trial, the palatability to sheep of 13 crop species was compared — canola (*Brassica napus*), safflower (*Carthamus tinctorius*), fenugreek (*Trigonella foenumgraecum*), lupins (*Lupinus angustifolius* cv. *gungurru*), chickpea (*Cicer arietinum* cv. *semsen*), faba bean (*Vicia faba,* cv. *fiord*), field pea (*Pisium sativum* cv. *alma*), lathyrus (*Lathyrus sativa* and *L. cicera*), mustard (*Brassica juncea*), coriander (*Coriandrum sativum*), narbon bean (*Vicia narbonensis*) and lentil (*Lens culinaris* cv. *aldinga*). Wheat (cv. Trident) was also grown to provide a common palatable crop species.

The trial was grazed by Merino wether hoggets at 12 DSE (dry sheep equivalents) per hectare on two separate occasions (nine weeks and 13 weeks, post-sowing) to determine whether crop palatability altered with its phenological development.

Results and Discussion

Table 1 shows the variation in palatability (assessed by measuring dry matter cuts and grain yield) between crop species which altered with time — those with a high palatability were judged less suitable to permit in-crop grazing by sheep to suppress weeds.

While these results must be regarded as preliminary, they do suggest that the least palatable species — narbon beans, faba beans and coriander — may be grazed by sheep to reduce weed competition with little damage to the growing crop. Chickpeas and mustard may also have potential in this regard. All other crops grown were shown to be as palatable as the weeds to the grazing sheep and were therefore unsuitable for weed control using this technique.

Table 1: The variation in palatability between crop species which altered with time of grazing.

	EARLY GRAZE	LATE GRAZE
HIGH PALATABILITY	FIELD PEA, LATHYRUS, FENUGREEK, LENTILS, CANOLA, SAFFLOWER, LUPIN, WHEAT	LATHYRUS, FIELD PEA, CANOLA
MODERATE PALATABILITY	CHICKPEA, MUSTARD	LUPINS, LENTILS, SAFFLOWER, MUSTARD
LOW PALATABILITY	CORIANDER, FABA BEAN, NARBON BEAN	CORIANDER, FABA BEAN, NARBON BEAN, WHEAT, CHICKPEA, FENUGREEK

Conclusion

As these results indicated which crops are palatable, further trials will be conducted with the unpalatable species to further assess the concept of in-crop grazing as a weed management tool. Fields of study will include the impact of trampling on disease and, ultimately, yield, environmental influence on palatability, preferred stocking rates, and the timing of sheep introduction to the crop.

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For more information, contact: Chris Penfold on (08) 8303 7735; fax: (08) 8303 7979,
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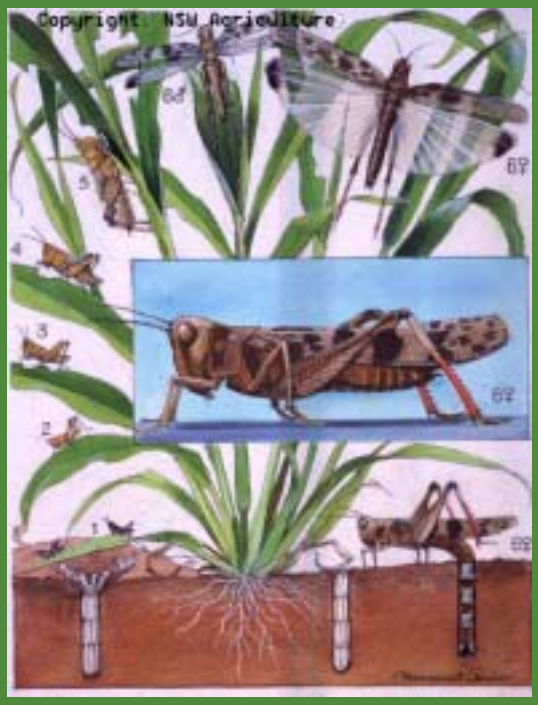
(Editors note: A similar trial is currently being conducted by the CRC for Australian Weed Management. One of the aims of this trial is to develop robust grazing systems for weed management in non-crop phases of the rotation with particular emphasis on exploiting differences in the palatability/acceptability of weeds and pasture legumes. For more information, contact Dr David Ferris on (08) 9690 2160, e-mail: dferris@agric.wa.gov.au)

Current Plague Locust Situation in NSW

The Australian Plague Locust (*Chortoicetes terminifera*) is a damaging, recurring insect pest of pastures and crops throughout south-eastern Australia. This species occurs throughout most of the central and western parts of New South Wales with the greatest activity usually from spring to autumn.
The current outbreak of Australian Plague Locusts has the potential to be the largest in NSW since 1979/80. High populations of adult Australian Plague Locusts are present in the North-West of the State, in areas including Coonamble, Coonabarabran, Warren, Walgett and Gunnedah. Significant populations of adult locusts are also distributed across other parts of New South Wales in areas including the Nyngan and Dubbo areas, and east to Moree and Narrabri.

Controlling locusts

Landholders have a responsibility under the *Rural Lands Protection Act 1998* to report the presence of plague locusts to their local Rural Lands Protection Board (RLPB) and to also control nymphs on their land. They should do this by using the insecticide designed for this purpose that is provided free from their RLPB. Stocks of this insecticide are funded from the Noxious Insect Levy which is paid by all RLPB ratepayers in NSW.



Left: Adult and nymphal stages of the Australian Plague locust(*Chortoicetes terminifera*). Image: ©NSW Agriculture, 1998.

It is vital that individual farmers and graziers cooperate by:

- Reporting all infestations to their local RLPB.
- Controlling bands on their land by treating them with the insecticide available from their RLPB.

Ground control of bands is carried out in closely-populated areas, while aerial control is generally used on swarms in areas where it is deemed necessary and environmentally-acceptable.

Ground control by landholders at the time the nymph forms of the locusts band together provides the most effective opportunity to control locusts.

Aerial control of bands and swarms generally occurs in remote areas. The APLC only undertakes aerial control against substantial targets of bands and swarms.

Organic locust control. There are three locust control agents currently available for use during a plague locust outbreak. These agents are generally available free of charge through RLPBs in affected areas, although there may be restrictions on their availability and use. Only one of these control agents, metarhizium (commercially known as Green Guard® SC[1]) is acceptable for use on organic farming systems. Green Guard® is a naturally-occurring fungus that is effective against locusts and grasshoppers. The metarhizium-isolate chosen for this insecticide occurs naturally in the Australian environment and, despite killing non-pest grasshoppers as well as plague locusts, will not spread from the area where it is applied. This is because Green Guard® is sensitive to UV light and drying and so does not persist in the environment. The use of metarhizium may, however, incur a small charge if required for use in other than environmentally-sensitive areas.

For more information on the current plague locust situation go to:
http://www.agric.nsw.gov.au/reader/pe-locust

[1] ALWAYS READ THE LABEL Users of agricultural (or veterinary) chemical products *must always* read the label and any Permit before using the product, and strictly comply with the directions on the label and the conditions of any Permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or not made in this publication.

News, Events and Publications

Soil Biology in Agriculture Workshop in August

NSW Agriculture and the GRDC's Soil Biology Initiative are organising a two-day workshop on soil biology in agriculture at Tamworth in August. The workshop will provide an update on current scientific research in soil biology in agriculture, including much of the work being conducted through the Soil Biology Initiative. The two days of presentations are designed to interest farmers, agricultural advisers, and researchers. Speakers will outline the soil food web, the impact of soil management practices on soil biota, and the development, use, and efficacy, of soil biological products.

The workshop will be held at Tamworth Agricultural Institute's new Sustainable Farming Training Centre, which opened earlier this year. Seating is limited to 150, so those interested in attending are advised to register promptly.

Cost for participants is $200, which covers catering over the two days and a copy of the proceedings. If you would like to attend this workshop, you can obtain a registration brochure from Rebecca Lines-Kelly on (02) 6626 1319 or by e-mail: rebecca.lines-kelly@agric.nsw.gov.au

Organic research station being developed
John Brown of the Queensland Department of Primary Industry (QDPI) is currently developing a tropical organic research station at Ayr, near Townsville. This station has the potential to improve organic systems for the climate of 60 per cent of Australia's land area. The QDPI is currently consulting with the organic industry on research priorities for the research station. John is asking for farmers, processors, and others, who have research needs to contact him at: John.Brown@dpi.qld.gov.au AFFS Horticulture, AYR Q 4807.

Fifteenth IFOAM Organic World Congress
The 15th International Federation of Organic Agriculture Movements (IFOAM) World Congress will be held in Adelaide from 19–23 September, 2005.
With the theme, 'Shaping Sustainable Systems', the Congress will benchmark to the world the important role that organic systems play in ensuring the long-term sustainability of agro-ecosystems. The conference will also explore issues, current research, and practical applications, of the organic industry with particular focus on sustainability and includes lectures, workshops, posters, and panel discussions, in addition to plenary sessions. Typically, several hundred papers are presented during this event.
The conference will also incorporate the International Scientific Conference on Organic Agriculture as well as the 8th International Organic Wine Conference.
For more information, go to: http://www.nasaa.com.au/ifoam/

ANU intensive course on eco-innovation and sustainable development
Eco-Design and Innovation
Five-day course: 7–11 July, ANU, Canberra.
This course presents new 'systems design' concepts and methods for restoring human and environmental health and productivity, while also improving the economy. It will offer updates to participants on the principles and strategies for analysing, designing, implementing, and monitoring sustainable systems of 'eco-development'. Suitable for any graduates, the course will also include notable guest speakers from this field.
For more details, contact: janis.birkeland@anu.edu.au or phone (02) 6125 2224.

Results available of US Organic Livestock Marketing Needs Report
The results of the Organic Livestock Marketing Needs Report, conducted as part of Jim Riddle's tenure as Endowed Chair in Agricultural Systems at the University of Minnesota, are now available.
The survey was conducted in response to the growth in organic livestock production and the need for research institutions to understand the requirements of the industry. The survey results showed that respondents were most interested in the following general research topics:

- economics and profitability of organic livestock production;
- approved organic methods of parasite management;
- the relationship between organic soil-building methods and livestock health and nutrition;
- analysis of the nutritional and health value of organic livestock products; and
- approved health care options for livestock.

Link directly to the report at: http://www.misa.umn.edu/Other/Livestock-Survey_web.pdf
or read a summary of the report at: http://www.misa.umn.edu/Other/Livestock-Summary1web.pdf

The Palatability and Potential Toxicity of Australian Weeds to Goats
Grazing with goats is a very effective weed control strategy, but owners should be aware of potential toxicity risks. This book provides suggestions on control strategies and outlines the health and production problems that may result from grazing weeds. These plant pests are listed by common and botanical names, their relative palatability is graded, and the poisonous compounds that they contain are named. The signs and symptoms produced in goats by each toxic weed is also described.

H Simmonds, P Holst, C Bourke. Colour illustrations 166 pages Publisher: RIRDC 2000