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Organic CRC bid fails to get Federal government backing

The bid to establish the Cooperative Research Centre for Australian Organic Food and Farming Technologies has unfortunately failed to attract funding through the Australian Government's Cooperative Research Centres (CRC) Programme. The Organic CRC was one of 24 CRC's nominated to participate in the CRC programs' final interview round.

Nominated CEO of the proposed Organic CRC Helen Scott-Orr believes Australia has lost a great opportunity to really give the organic industry a boost and capture future benefits but is sure that the industry will still go forward, although not nearly so firmly as it might have with a CRC providing a sound research and education underpinning.

Following are some of the comments made by the CRC Committee Assessment Panel in a brief report on the Organic CRC bid:

"The bid is strongly aligned with the National Research Priority goals - transforming existing industries and sustainable use of Australia's biodiversity."

"Market access may increasingly be based on approved production processes, and the bid could protect and increase access to particular markets."

"The development of more sustainable organic farming systems has considerable potential for spill over benefits to conventional agriculture a potential which disappointingly was not strongly developed in the bid."

The bid was "very well regarded" by the Panel for its potential to achieve the identified outcomes through the paths to adoption (commercialisation/ utilisation) outlined in the bid.

The Panel noted that the bid "brought together key elements of the supply chain, with the exception of food exporters". However, they commented that "some science providers, notably CSIRO and Food Standards Australia were absent from the bid".

The Panel agreed that "many of the proposed outcomes (identified in the bid) are needed to further develop the organics industry – e.g. coordination, supply chain linkages, supply increases – and accreditation". However they felt that "it was not demonstrated that a research based CRC would be the only way or even the best way to achieve these outcomes. The scale of the outcomes was not well developed or demonstrated, particularly in respect of Australia's industrial, economic and commercial growth".

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The Cooperative Research Centres (CRC) Programme has made available grants of \$407 million for research and innovation to 16 recipients covering the areas of manufacturing, information and communications technology, mining and energy, agriculture and rural-based manufacturing, the environment and medical science. Of these only 5 were new CRC's whilst two were supplementary applications. Successful agriculture oriented CRC's in this round included:

- \$26.5 million for the Cotton Catchment Communities CRC, Agriculture and Rural Based Manufacturing Sector (Developing from an existing CRC). Based in NSW
- \$27.5 million for the CRC for an Internationally Competitive Pork Industry, Agriculture and Rural Based Manufacturing Sector (New). Based in SA
- \$30 million for the CRC for Beef Genetic Technologies, Agriculture and Rural Based Manufacturing Sector (Developing from an existing CRC). Based in NSW
- \$4.93 million for the CRC for Molecular Plant Breeding, Agriculture and Rural Based Manufacturing Sector (Supplementary). Based in Victoria.
- \$20.5 million for the CRC for National Plant Biosecurity, Agriculture and Rural Based Manufacturing Sector (New). Based in the ACT.
- \$26.6 million for the CRC for Sustainable Forest Landscapes, Agriculture and Rural Based Manufacturing Sector (Developing from an existing CRC). Based in Tasmania.
- \$40.25 million for the e-Water CRC, Environment Sector (Developing from an existing CRC). Based in the ACT.

Storing Organic Grain

This article has been adapted NSW DPI Agfact P3.5.1. 'On-farm storage of organic grain', by R. Neeson, NSW DPI and Jonathan Banks, ex CSIRO, Canberra.

Introduction

Many producers of organic grain make use of on-farm facilities for the storage of grain. Successful storage requires protecting grain from insect or animal pests, preventing contamination by moulds or physical contaminants, and maintaining the viability and its nutritional and manufacturing properties.

Organic farming can be defined (in simplistic terms) as a system of farming that produces agricultural products without the need for artificial pesticides or fertilisers. Organic standards preclude the use of many of the chemicals traditionally used to preserve the quality and storage life of grain.

Organic certification and grain storage

If the farm and produce are to be certified 'organic' a farmer's methods of production and storage must comply with standards for organic farming. These standards constitute an organic quality assurance (QA) system. The farm is inspected by an organic certification organisation on a yearly and random basis to ensure that standards are being met. The certifier's standards cover all the requirements of the National Standard for Organic and Biodynamic Produce (1992, 1998, 2002).

Production, storage, transport, handling and packing facilities must conform to organic standards in order to maintain the organic integrity of the product.

Causes of grain quality losses

Some storage problems result from conditions before or at harvest. Some are caused by conditions during storage. Grain with quality loss prior to storage is more difficult to store well than sound, clean grain.

Grain quality losses after harvest can include moulding and mould toxin contamination, loss of viability and processing quality and gross loss of product. Grain quality loss after harvest results primarily from high storage temperature and moisture content.

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Organic grain storage strategies

Retaining grain quality during storage involves satisfactorily monitoring the condition of the grain, maintaining hygiene levels, knowing when and what pest control methods to use, and controlling temperature and moisture levels in the grain.

Under Australian storage conditions, storing only dry grain and keeping it dry readily controls moulds. The principal pests of dry grain are insects, the main ones being beetles, moths and booklice (*Psocids*). These may be controlled by reducing the temperature in grain storage to 20°C or less, but a disinfection stage is typically required to meet trading standards.

A number of organic-compatible practices are useful in maintaining the quality of stored grain. These include: harvesting strategies, ensuring good hygiene before and during storage, monitoring pest incidence, storage design and layout, controlled atmosphere storage, heating and cooling treatments, and inert atmosphere vacuum packaging.

Harvesting strategies

Harvesting at the correct time can avoid yield losses and minimise post-harvest storage problems. Grain testing before harvest allows quality control of the product grade, leading to a better understanding of the on-farm storage requirements. If drying and conditioning facilities are not available, grain should be harvested at or below normal receival limits for moisture. Oilseeds should be aerated using well-controlled aeration if they will be stored more than one month.

Ensuring good hygiene before and during storage

Good hygiene within grain handling and storage premises is a primary goal to ensure the quality of the product is not compromised through contamination by insects, rodents or any other noxious or objectionable matter as described in the 'Grains, Plants and Plant Products Orders' (*Export Control Act, 1982*). These Orders are complimentary to The National Standard for Organic and Biodynamic Produce. Infestation in cereal grains is usually obvious within 2-3 months.

Good hygiene in grain storage facilities can be achieved by ensuring:

- easy cleaning and inspection of storages;
- regular equipment maintenance;
- removal of grain residues in sheds, around silos, in headers, augers, field bins, trucks, animal troughs and in silos after emptying;
- *rotation of stocks* to ensure that they do not become sources of infestation and *destruction of old stocks* that are likely to be heavily infested;
- proper training of staff in safety and hygiene;
- the establishment of a system for recording and checking hygiene procedures (such as a HACCP based management system), and development of action strategies should contamination occur.

High-pressure air is often the most suitable method for cleaning equipment, but high-pressure water and vacuum cleaning is also suitable under certain conditions. Plan the cleaning sequence so that cleaned areas cannot be re-contaminated and use suitable personal protection with high-pressure air.

Reducing harbour around storage areas, such as rubbish and long grass, will minimise mice problems. A clear area exposes mice to their natural predators.

The potential for insect infestation can be greatly reduced by keeping the grain temperature as low as possible from harvest, and by storing grain as soon as possible in a sealed, white-painted silo.

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Never add freshly harvested grain to silos retaining the previous years' grain unless it has been effectively treated by controlled atmosphere disinfestation. Otherwise, thoroughly clean out silos and preferably leave them empty for a time before storing new season's grain.

Monitoring pest incidence

For most storage pest species the use of insect traps in storages and surroundings can detect the presence of insects at lower population levels than is usually possible by visual inspection, providing an early warning that control measures are required.

Various types of insect traps are available including: pitfall traps, which trap insects as they fall into a container; crevice traps which provide a physical environment into which insects crawl and remain; or bait traps containing food or bait attractive to the insect. Simple and effective insect traps can be made from items found in most homes.

Storage design

Poor storage design and on-farm layout of storages may affect the quality of stored grain. A planned layout of storages will allow segregation and short-term holding of grain for blending of product to meet quality and grade specifications.

The only organic-compatible disinfestation process that is currently available is the use of sealed storages. Sealed storages allow controlled atmosphere (CA) such as carbon dioxide or nitrogen to be applied for insect elimination. A sealed silo prevents re-entry of insects, providing it stays sealed. Seals should be checked regularly and replaced every two years. Silos can be checked for leaks by using a farm compressor. The silo superstructure as well as pressure relief valves should be regularly checked.

An effective method for the mid- to long-term storage of grain is the use of underground storages and bunkers. Bunkers can be sealed with tarpaulins and filled with carbon dioxide to kill insects.

Painting silos white to reflect sunlight and much of the heat, or in hot and humid grain-growing regions or with larger storages (> 100 t capacity), cooling grain by aeration, can reduce quality losses due to high temperatures.

Use of mineral dusts

Mineral dusts based on diatomaceous earth products are acceptable as grain treatments against storage insects under organic standards. Diatomaceous earth comprises the remnants of tiny fossilised diatoms, which occur as mine deposits in various parts of the world. Diatomaceous earth is registered as a food additive in many countries. These products work by adhering to and absorbing the waxy coatings on insects causing death by dehydration, rather than by chemical action.

Two products which are non-toxic to mammals' Dryacide® and Permaguard®, are currently registered for application to grain at rates of 1g/kg (0.1%). Either product can be applied by a pickle applicator to



Riverina Organic Farmers Organisation members inspect a grain silo with CO₂ disinfestation capability.

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whole grain to give protection from insect attack for 1-2 years provided the grain remains dry. Bulk handlers and grain traders do not accept grain treated with Dryacide or Permaguard because it slows grain movement through augers.

Dryacide and Permaguard can be used effectively to disinfest empty storages. Either product can be applied as a dust using a hand bellow or power duster. Application to large areas is achieved by using a power duster and operators should wear disposable dust masks. Dryacide may be applied as a slurry, which is more useful in sheds, where the deposit dries to a light coating without being obviously caked.

Controlled atmosphere disinfestation

Some organic growers have used carbon dioxide for many years to assist with storage of bulk grain. These have commonly been larger 50 tonne silo lots such as those found in small farm bins. A well-sealed bin, preferably painted white externally, is required, and the bin should be checked for gas-tightness, ensuring the pressure halving time exceeds three minutes.

The concentration of carbon dioxide must remain above 35% for 14 days at all points in the grain bulk to ensure all stages of the insect life cycle are killed. The amount of carbon dioxide needed to achieve this is about 1 kg per tonne of grain if the bin is full. More gas is needed if the bin is partially filled with grain. The carbon dioxide is introduced to the base of the silo from gas cylinders.

Employers and their staff should comply with Australian Standard AS 2865 'Safe working in a confined space' when using controlled atmosphere disinfestation.

Grain management by temperature

Grain aeration (aeration cooling) is the practice of moving air through stored grain to reduce the rate of deterioration and prevent storage losses. Aeration minimises moisture migration and keeps grain temperatures low to minimise deterioration by preventing insect development as well as reducing microbial growth, which can spoil grain, cause off-odours and increase grain temperature.

Heat disinfestation offers a rapid chemical-free process for the disinfestation of grain. While other techniques represent cheaper alternatives, heat disinfestation may become a useful strategy as technological advances are made, but is not yet available commercially.

Vacuum packaging

Some organic farmers' process and package grain for direct sale, adding value to the raw product. This market requires grain to be stored in retail outlets, often for a significant time, and still retain freshness and quality and the exclusion of pests.

Inert atmosphere or vacuum packaging offers an alternative packaging for small retail quantities of grain. With this method of packaging the product must be dry. Coffee is often packaged using this system.

The packaging process involves filling a laminate/ polythene package with a carbon dioxide / nitrogen mixture to kill insect pests, and then sealing the package. The packaging must have very low oxygen permeability ('barrier' film) to retain the insecticidal atmosphere and be well sealed to prevent insects laying eggs through the smallest of breaks. Another approach is to pack the product in barrier film and include a sachet of Ageless[®], which removes the oxygen from the air in the pack to leave a nitrogen atmosphere.

For more information contact Robyn Neeson, Organic Farming Liaison Officer, NSW DPI.
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Mid North Coast Conducts Industry Audit

Recently formed organic producer networks are continuing to advance strategies to boost organic farming business success on the NSW Mid North Coast.

Mid North Coast organic producers and processors are now taking part in a comprehensive audit of the industry. "It is crucial that we have reputable facts and figures on the status of this region's industry to support our development activities" says Lyndell Stone of the Mid North Coast Regional Development Board. For example, a sound understanding of the contribution that organic farming makes to the region's economy will help us in our discussion with government and other groups.

All organic producers and processors on the Mid North Coast are strongly encouraged to participate in this survey. Regional organic industry members will receive the survey in December and are asked to return the completed survey by the 24 January 2005. The survey is anonymous and only aggregated data will be reported.

The region's organic industry development Steering Committee is meeting in February and will use the results of this survey to encourage and direct industry development opportunities.

If you have not received your survey, please contact Lyndell Stone on (02) 65835647 or fip@betterbusiness.nsw.gov.au to obtain a copy. Every piece of information helps the industry put together a strong development case.

Upper Clarence organic beef project underway

A public information session will be held shortly to explain and gather interest for a newly funded project to demonstrate the development of an Environmental Management System (EMS) that incorporates Property Vegetation Management Planning & the planned conversion from conventional to 'organic' beef production. The Northern Rivers project was conceived by Upper Clarence Combined Landcare, and is funded through the National Landcare Program's *Natural Resource Innovation Grants*.

Six beef cattle grazing enterprises will be selected to undertake the conversion.

An EMS is a methodical approach to continuous improvement in planning, implementation & review of an enterprise's efforts to manage environmental impacts, and as such will provide the framework for the organic planning and conversion process.

Adoption of EMS has been slow in the beef industry primarily as there are no clear marketing advantages at the retail level, with consumers unaware of EMS. Concurrently there is a large & growing consumer awareness domestically & internationally of organic certification & associated environmental management principles & product safety. By combining these two mechanisms, this project will add value & robustness to that achieved by producers pursuing only one option.

At the commencement of the project participants will utilise the NSW Farmers Workbook entitled "Farmers Assessing their Resource Management" to undertake a baseline property assessment.

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Local technical experts (Catchment Authority, State agencies, Rural Lands Protection Boards, industry) will provide training & on ground assistance in a range of areas: Soils management, Vegetation planning, EMS development, Organic Standards & conversion, Meeting beef market specifications, Animal nutrition health & husbandry, Pasture Management & Fodder Conservation - Prograze, Agronomy & Weed control.

Where required, Property Vegetation Management Plans will be prepared with the assistance of the Catchment Management Authority. These will provide the basis for sustainable management of vegetation, and where applicable expansion of remnant & High Conservation Value remnants. Plans will address threats such as weeds, fire & uncontrolled grazing; management for threatened & vulnerable flora & fauna species; & where appropriate timber production.

At the end of the year participants will have a property EMS & Vegetation Management Plan. They will have planned & commenced conversion to organic production. They will have received assistance in accessing the Federal Government EMS Incentives Program, & a range of other investment programs such as Envirofund, Environmental Trust, TSN etc.

The 3 year organic conversion period is recognized as possibly having increased production costs & potentially lower yields with an absence of market premiums or other economic benefits until full conversion. Throughout the process participant enterprise inputs & returns will be collated & the net economic impacts during the first year of the three year organic conversion process will be identified.

The public information session will be held on Tuesday 1st February 2005 at Casino RSM from 9am – 11am.

For further information contact Terry Moody or Susan Pollard – phone (02) 6665 3133

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Dutch government goes organic

The Dutch ministry of agriculture is planning to spend nearly •61 million on promoting organic farming in the next three years. As a symbolic gesture to show its commitment to growing the organic sector, the ministry of agriculture has promised to offer only organic food in its canteens from 2007 onwards. At present, 50% of canteen food is organic! Source: <http://www.localfood.org.uk/localfoodnews.htm> (Rebecca Lines-Kelly NSW DPI, NRM Update 17 January, 2005)

Organic rotation shows sustainability potential

A recent US Agricultural Research Service (ARS) study has shown that a three-year rotation of organic corn, soybeans, wheat and a legume cover crop is at least as sustainable in terms of nitrogen loss and corn yield as no-till farming or chisel tillage. The organic crop rotation, which used poultry litter, soybeans and a hairy vetch legume cover crop as nitrogen sources, had losses and yields similar to fields where either of the other two methods had been used.

This study is part of a farming systems project begun by the ARS in 1996 to compare the sustainability of organic and conventional farming. Minimising losses of nitrogen and other nutrients is a key element of both environmental and economic sustainability. ARS is the U.S. Department of Agriculture's chief scientific research agency. Read more at: <http://www.ars.usda.gov/is/pr/2004/041126.htm>.

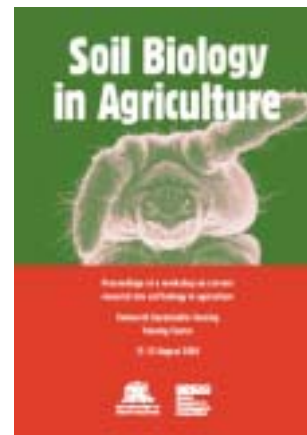
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Soil Biology in Agriculture Workshop Proceedings now available on-line

This publication contains the proceedings of a workshop on current research into soil biology in agriculture, which was held at the Tamworth Sustainable Farming Training Centre on 11–12 August 2004. The workshop was organised by NSW Department of Primary Industries, with the generous assistance of GRDC.

The presentations made at the workshop are organised in the document under the following main headings:

- Overview of soil biology and effects on health and productivity of agricultural soils.
- The impact of management practices on soil biology.
- Development, use and efficacy of soil biological products in agriculture.



Ten poster papers are also included in the proceedings. For a copy of the proceedings go to: <http://www.agric.nsw.gov.au/reader/soil-biology/soil-biology-proceedings-sp.htm>

ABC's Organic Gardener Magazine

Published quarterly by the Australian Broadcasting Commission, the *Organic Gardener* promotes the fundamental message of organics i.e. providing a sustainable, socially and environmentally responsible system of agriculture.

The *Organic Gardener* has been revitalised to deliver a contemporary new look and broader content embracing not only organic gardening but also wholistic living. It covers topics such as organic food, environmentally friendly home products and cutting edge developments in Eco-Living and Eco-Travel. Articles are written by some of Australia's leading organic gardeners.

The summer 2004 edition of *Organic Gardener* includes articles on Community Supported Agriculture (CSA), water-wise gardening and keeping ducks as pets. Find out more about the publication at: <http://shop.abc.net.au/browse/product.asp?productid=601256>

The Organics Directory goes on-line

Since 1997 The Organics Directory Poster has been distributed to people and businesses connected with or interested in all aspects of the organic industry; producers, growers, wholesalers, retailers and manufacturers, the public, wholistic practitioners and medical colleges, retail outlets, field days, media as well as government and industry bodies. In 2004–2005 130,000 copies of the Directory were circulated.

Developed by Catriona Macmillan, Heaven and Earth Systems P/L, the Directory is now being taken on-line in the form of a FREE Organics Community site, allowing users to go online and add information. The service will also help consumers find organic products or services.

The on-line service is still in its early days and potential users are being asked to have a look and provide feed back to ensure that a really useful site is developed.

The new Organics Directory site can be found at: <http://www.theorganicsdirectory.com.au>

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HDRA Organic Weed Management Website

The HDRA (UK) Organic Weed Management Website aims to be a primary resource on weed management for organic farms, reporting on the latest weed research and techniques and acting as a focal point for farmers and researchers to share their experiences. The Organic Weed Management project 'Participatory Investigation of the Management of Weeds in Organic Production Systems' is taking a participatory approach to research and problem solving. The Organic Weed Management project is collaboration between many partners, but organic farmers are among the most important, and they continue to work on its development alongside the researchers.

Check out the website at: <http://www.hdra.org.uk/organicweeds/>

National Conservation Incentives Forum 5-8 July

The National Conservation Incentives Forum will be held at La Trobe University, 5-8 July. The most popular topics derived from expressions of interest sent in last year are design and delivery of incentive programs, ongoing stewardship and management, and working together - regional bodies, local governments and conservation organisations. Additional topic suggestions included rate rebates and other options for local government, rangelands/pastoral and indigenous lands issues and incentives, and fostering sustainable behaviour and community approaches. Case studies are intended to be included throughout the program. For further information contact: Helen Searle at helen.searle@deh.gov.au or 6274 2707. (*Rebecca Lines-Kelly NSW DPI, NRM Update 17 January, 2005*)

EMS conference 17-20 October

The 4th National Management Systems (EMS) in Agriculture Conference at LaTrobe University, Beechworth, 17-20 October. The theme for this year's conference is diversity and innovation. The conference is designed for people developing and implementing EMS and EMS-related activities or seeking to explore how it can be used. Find out more at www.cdesign.com.au/ems2005.

Do you have any Organic News?

Do you have any research results, field day reports or other information that may be of relevance to organic agriculture? If so, let us hear about it!

Send your contributions to:

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Note: Electronic format is preferred. Text - Times
New Roman 11 point.



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