

Organic news

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When compost ain't compost

Compost is an important input for organic and conventional agriculture. However a recent review of compost standards revealed inconsistencies between all compost standards and the government regulations which override these

standards. The review highlighted there was an urgent need to address these anomalies, particularly contaminant levels, to ensure a high standard product that will improve soil health and productivity.

Organic standards

Three Australian organic standards were reviewed for their compost requirements:

- Australian Standard for Organic and Biodynamic Products (AS 6000-2009)
- Australian Certified Organic (ACO) Australian Organic Standard 2006
- National Association for Sustainable Agriculture Australia (NASAA) Organic Standard 2008.

All organic standards concurred that organic certification standards restrict compost inputs to natural materials such as animal and plant wastes, and naturally mined minerals and trace elements. Both ACO and NASAA Standards prohibit the use of biosolids on food crops, but biosolids use was not referenced in AS 6000-2009. It is a requirement of all organic standards that they also comply with relevant government regulations.

The compost manufacturing process is, in some organic standards, quite prescriptive, for example, each Standard outlines requirements for biodynamic farming systems, which includes the compulsory addition of specific biodynamic preparations during the composting process. Other organic standards, including the Australian Standard for Organic and Biodynamic Products (AS 6000-2009), defer to production techniques as specified by The Australian Standard - Composts, soil conditioners and mulches, or, "AS 4454-2003".

Organic standards regulate some aspects of compost application. For example, if animal by-products are used as a feedstock material then its application to land or crops must not result in uptake by ruminant or herbivore livestock and a

specified cropping or lay period may be defined to precede the reintroduction of livestock. Generally, however, application limits are based on soil analysis and environmental requirements (e.g. application must not contaminate water courses). Organic standards must also comply with the relevant government regulations for waste application.

As shown in Table 1 the levels of contaminants that are acceptable in organic farming standards vary between standards. Compost is a primary source of nutrients in organic farming systems, and the higher levels permitted by some organic standards for elements such as zinc presumably aim to reflect this requirement. In some instances ambiguous terms such as 'none or a low level' (AS 6000-2009), and 'not containing synthetic chemicals' (ACO), are used in preference to precise limits.

Organic certification is a 3rd party accreditation process whereby aspects of production and processing are assessed (by independent auditors) on an annual basis for compliance to organic standards. The onus is on the operator of the certified organic operation to prove compliance.

Proof of compliance includes maintaining detailed records of inputs (which includes analytical tests for inputs that are not organically certified), and routine soil analysis. For compost application this means that the operator must provide evidence that each batch of compost (production process and composition) complies with the requirements of the standard.

The Australian Standard - Composts, soil conditioners and mulches – AS 4454-2003

The Standard which is generally accepted as the current benchmark standard for the compost manufacturing industry is The Australian Standard - Composts, soil conditioners and mulches, or, "AS 4454-2003 (AS4454)".

AS 4454 specifies physical, chemical, biological and labelling requirements for composts. In addition, all products and their application must comply with federal and state regulations. Appendix N of AS 4454 details best practice guidelines for composting systems.

AS 4454 outlines a number of physical and chemical requirements for compost. The Standard

Contaminant	AS 6000-2009 ¹	ACO ¹	NASAA ¹	AS 4454 – 2003 ^{1,2}
Heavy metals (mg/kg)				
Arsenic	None or low level	20	20	20
Cadmium	None or low level	3-5	10	3
Chromium	None or low level	250	1000 ³	100
Copper	Input level limited to 8 kg/ha with staged reduction	375	400	100
Lead	None or low level	150	250	150
Mercury	None or low level	4	2	1
Nickel	None or low level	125	100	60
Selenium	None or low level	Not referenced	Not referenced	5
Zinc	None or low level	700	1000	200
Pesticides (mg/kg)				
DDT / DDD / DDE	Implied as none: F1.2.1.(d) Inputs should not contain synthetic chemicals	Residues managed to eliminate on-farm risk.	Must not introduce contaminants to certified area	0.5
Other pesticides	Implied as none: F1.2.1.(d) Inputs should not contain synthetic chemicals	Residues managed to eliminate on-farm risk.	Must not introduce contaminants to certified area	0.02
Biosolids acceptability				
	Not referenced. Not on list of permitted inputs	Prohibited on food crops. Permitted (with conditions) on timber & fibre products. Sewage sludge is differentiated from biosolids & application is prohibited on certified organic land.	Prohibited on food & feed crops. Permitted (with conditions) on perennial fibre crops & agroforestry	Composted products derived from Biosolids accepted under AS 4454 provided they also adhere to applicable federal or state regulations.
Non-organic ingredients				
Glass, metal & rigid plastic >2mm % dry matter (w/w)	Does not meet acceptable input criteria	Does not meet acceptable input criteria	Does not meet acceptable input criteria	≤0.5
Plastic – light, flexible or film >5mm ; % dry matter (w/w)	Does not meet acceptable input criteria	Does not meet acceptable input criteria	Does not meet acceptable input criteria	≤0.05

¹Standards apply in addition to & are complementary to Commonwealth, State/Territory or Local Statutory regulatory requirements & Laws.

²AS4454 reference State or Federal regulations for Heavy Metal limits. Values used are for Grade A Contaminant Acceptance Thresholds (Table 3.1, pp 9). NSW EPA, "Use & Disposal of Biosolids Products", 1997.

³NASAA has indicated this number may be inaccurate and is currently under review (pers. com. Goldfinch, S., Feb. 2011)

Table 1: Maximum permissible contaminant level in compost / compost feedstock, soil conditioner

defers to national or state guidelines for chemical contaminants (including heavy metals), organic contaminants and pathogens. As shown in Table 1 AS 4454-2003 permits the use of organic materials including biosolids as feedstock ingredients; mixtures of organic waste which contain non-organic materials (e.g. plastic, glass and metal from household waste) are permitted, but restrictions are placed on the proportion and size of these contaminants.

AS 4454-2003 provides detailed monitoring procedures to support an effective process for the production of a consistent compost product. However the Standard does not extend to compost application requirements, where it defers to federal or state regulations.

Government regulations

Table 2 shows contaminant limits for Grade A products (organic waste, compost or biosolids) for unrestricted use as set by various State government regulations.

Application regulations apply to composts which contain biosolids. These vary between States with some deferring to other States. For example, in Queensland the “Draft EMP for the land application for biosolids products in Queensland” (EPA 2001) refers to the NSW guideline “Environmental Guidelines, Use and Disposal of Biosolids Products” (1997) but also includes site-specific Queensland implementation measures.

Assessment of soil quality is prescribed prior to biosolids application to ensure that the combined soil and applied biosolids application does not exceed the total maximum allowable levels of contaminants. Permitted total application rates for biosolids are specified in some regulations. For example, the NSW EPA Protection of the Environment Operations (Waste) Regulation 2005 - General Exemption, 2010, places organic output application limits of 50 tonnes per hectare (dry weight) to non-contact agricultural use and 10 tonnes per hectare (dry weight) to broad acre application.

Other regulations define limits for contaminants such as glass, metal and plastics contained in mixed organic waste. For example, the NSW EPA Protection of the Environment Operations (Waste) Regulation 2005 - General Exemption, 2010, permits a maximum contaminant particle size of 16mm with maximum application of rates for glass, metal and rigid plastics (>2mm) of 1.25 tonnes per hectare for non-contact and 0.25 tonnes for broad acre agricultural use. In addition to physical contaminants, organic wastes must meet health requirements prior to application with regulations defining acceptable pathogen levels.

Contaminant	NSW ¹	Victoria ²	Tasmania ³	South Australia ⁴	Western Australia ⁵
Heavy metals (mg/kg)					
Arsenic	20	20	20	20	20
Cadmium	1	3	3	3	3
Chromium	100	50 ⁶	100	50	100
Copper	100	60 ⁶	100	60	100
Lead	150	150	150	150	150
Mercury	1	1	1	1	1
Nickel	60	60	60	60	60
Selenium	5	5	5	5	3
Zinc	200	200	200	200	200
Pesticides (mg/kg)					
DDT / DDD / DDE	0.5	1.0	0.5	1.0	0.5
Aldrin	0.02	0.2	0.2	0.2	0.02
Dieldrin	0.02	0.2	0.2	0.2	0.02
Chlordane	0.02	0.2	0.2	0.2	0.02
Heptachlor	0.02	0.2	0.2	0.2	0.02
HCB	0.02	0.2	0.2	0.2	0.02
Lindane	0.02	0.2	0.2	0.2	0.02
PCB's	0.3	1.0	0.3	1.0	0.3

¹ EPA NSW (1997) *Environmental Guidelines: Use and Disposal of Biosolids Products*.
² EPA Vic. 1996 *Environmental guidelines for composting and other organic recycling facilities*. EPA Vic. Publication 508, 1996.
³ Tasmanian Department of Primary Industry, Water and Environment, 1999. *Tasmanian Biosolids Reuse Guidelines 1999*.
⁴ EPA SA, 2007. *Draft Guidelines for Composting Works in South Australia* May 2007
⁵ Department of Environmental Protection, the Department of Health and the Water & Rivers Commission, 2002. *Western Australian guidelines for direct land application of biosolids and biosolids products*. February 2002.
⁶ From ANZECC *Guidelines for the Assessment and Management of Contaminated Sites*, Jan 1992.

Table 2: Australian State regulations for limits of heavy metal and pesticide contaminants in organic waste, compost or biosolids for unrestricted use.

A range of other applications may also be regulated such as restrictions based on potential for environmental contamination and grazing restrictions on land where compost containing biosolids has been applied.

Conclusion

A comparison of Australian organic standards and AS4454 (Tables 1) and State regulations (Table 2) reveals anomalies between standards.



Above: Contaminants such as plastic and glass are permitted with conditions in some compost standards. These piles will be further processed to remove physical contaminants.

Farmers are being encouraged to use composts to improve soil health and to sequester carbon. However, inconsistencies in standards and regulations make it difficult for users to assess the quality of the product and ensure its suitability for on-farm use.

There is an urgent need to address anomalies between compost standards and Federal and State regulations, particularly contaminant levels, to ensure a high standard product that will improve soil health.

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Greenhouse production - the organic way

A recent workshop brought together greenhouse growers from across the far north coast, local NSW DPI horticultural advisors and NSW DPI greenhouse horticulture technical experts from the Gosford Primary Industries Institute which is a Centre of Excellence for greenhouse horticulture.

The workshop was held at Rivendell Organics, a certified organic vegetable production greenhouse to discuss ways to get the most value from biological and 'soft' pest and disease controls. The focus was on tools and techniques to reduce chemical use, including greenhouse hygiene, active monitoring for pests and diseases and attention to plant health.



Above: Hogan Gleeson owner of Rivendell Organics explains the intricacies of his organic greenhouse vegetable production system during NSW DPI's greenhouse workshop

Banking on predators

Aphids are the key insect pest in the Rivendell Organics greenhouse. Successful organic management of this pest has come to depend on maintaining a permanent population of aphidius parasitoid wasps. The adult female wasp lays its eggs into aphids, and when the wasp eggs hatch the larvae begin to eat the aphid from the inside.

In traditional IPM the levels of the parasitoid wasps decline as the population of the pest aphid declines, and if a new pest outbreak occurs the parasitoid wasps would normally be reintroduced into the greenhouse. However a system known as the Banker Plant System supports the parasitoid wasp to persist in the greenhouse at all times, even when aphid numbers in the crop are very low.

Two types of banker plants are maintained within the greenhouse at Rivendell Organics. Firstly, food sources for the parasitoid wasps are provided by hanging baskets which contain particular flowering plants which have the right shape of small flowers to provide nectar for the adult aphidius wasps to feed on. A second banker plant, barley, is grown in trays, and this crop supports a population of cereal aphid. The cereal aphid are not a pest of the greenhouse crop plants, however they are a suitable host for the aphidius wasps that are needed to parasitise the pest aphids which attack the greenhouse crops. So the cereal aphid support the wasps to complete their life cycle within the greenhouse, even when the pest aphid numbers on the greenhouse crop are low and the wasps would otherwise disappear.

Because there is a continuous presence of the aphidius wasps they are able to respond and be effective quickly as pest aphids enter the crop. There is also a substantial cost saving to the growing system in not having to purchase wasps for reintroduction with every aphid outbreak.

Cereal aphids are not usually present in the Northern Rivers region. The original individual aphids introduced into the barley banker plants were sourced by NSW DPI agronomists in Central West NSW, with their descendents now sustaining this IPM technique practised in the Nimbin greenhouse.



Above: Banker plants – hanging baskets and trays of barley - seen here in Rivendell's greenhouse

Jeremy Badgery-Parker, NSW DPI's Greenhouse industry development specialist introduced the concept of having action plans in place for key pests and diseases. Action plans can include a range of responses, from releasing beneficial insects, both soft and hard chemical controls, and utilising hot spot (a technique for reducing chemical use where only a small part of the crop gets treatment) and whole of crop controls. The aim is to effectively manage the risks from pests and diseases while reducing total chemical use through the life of the crop.

Action plans that are informed by regular monitoring of the crop for pests and diseases allow growers to match their responses to the level of threat posed by each pest or disease at a given time. This helps avoid excessive use of chemicals when pest or disease pressures are actually too low to create economic damage to the crop.

Organic grower Hogan Gleeson spoke about his experiences in converting the operation at Nimbin from a conventional hydroponic growing set up to its current certified organic system, and how he has managed insect pests. He emphasised the need to be systematic about reducing the pressures of insects entering the greenhouse and supporting beneficial insects to persist there. He believes maintaining optimum plant health and nutrition is the first priority in pest management, observing that the major pest outbreaks in the

Rivendell Organic greenhouse had always followed on from setbacks in plant health.

Growers went for a walk through the Nimbin greenhouse to see how the regular pest and disease monitoring was carried out, and how 'banker' plants were used to provide food and shelter for beneficial insects alongside the crops.

NSW DPI Research Scientist Leigh Pilkington explained the need to have the 'foundation practises' of Integrated Pest Management in place before starting to introduce beneficial insects into growing systems. These foundation practises are hygiene in and around the greenhouse, regular monitoring and record keeping for pests and diseases, keeping plants healthy, choosing crop varieties suitable for the conditions in your greenhouse and that are resistant to pests and diseases, and including softer chemicals and hot spot treatments in chemical control strategies.

The workshop was put together as part of NSW DPI's 'Improved Greenhouse Management' project for the far north coast, funded by Northern Rivers Foodlinks. Local organic food and coffee, including produce from Nimbin Organics and Sunflower Greens, fuelled the participants.

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BFA Organic School Gardens Program seeks certified farmers

The Biological Farmers of Australia (BFA) Organic School Gardens Program (OSGP) is an initiative developed to support schools to incorporate vegetable gardens and student learning outcomes into their school curriculum. OSGP is a unique learning and teaching resource. As far as BFA's research has found, there is no Australian school gardening program currently available that is a free comprehensive resource, nor one that is based on organic standards.

The program provides teachers with a full set of lessons and detailed technical notes for teaching students to grow their own organic food and provide an awareness of the benefits of organic food and farming for soil, plant, human and environmental health, contribute to sustainability education, and foster biodiversity improvement in the whole school environment.

In addition to free lesson resources, teacher's notes and curriculum material, the program provides schools with additional sub-program initiatives which offer; opportunities for school links to organic farms, access to funding, leadership networks with other schools, and community partnerships to access volunteers and business support.

One of the program initiatives is the Adopt-a-Farmer Program (AFP) which fosters a connection to farms, the land and the food we eat, and provides unique opportunities for students with farm excursions, on-farm activities and farmers' visits to schools.

The AFP was launched this year, and allows producers to become teachers and leaders for generating the interest of younger generations in organic production, contributing to children's' understanding of where our food comes from and generating potential for interest in organic farming as a career.

Organic School Gardens is seeking certified organic and biodynamic farmers to participate in the OSG's Adopt-a-Farmer Program. Assistance is available to farmers with a discounted rate for soil tests, and some out of pocket expenses around school excursions.

As part of promotion of the Adopt-a-Farmer Program, farmers will be featured in several key mainstream media channels to allow the stories of organic producers to be highlighted to the wider community and to non-organic producers. The highlights from farm excursions and school events will be shown through post-event media activity with film clips, photos and stories of these events



Above: Organic farmer Steve Skopilianos with students from Overnewton Anglican Community College Junior School.

available for download from the Organic School Gardens website.

Farmers can find out more about the program at the Organic School Gardens website www.organicschools.com.au. On the Adopt a Farmer Program page there is a fact sheet outlining the benefits to producers and answering any questions with regards to hosting groups of children on farms, including obligations of participating schools.

BFA gratefully acknowledges the support of SWEP Analytical Laboratories and Vitasoy Australia.

For more information contact: Organic School Gardens Program. Email: organicschools@bfa.com.au Web: www.organicschools.com.au.

Export organic products and the use of certified inputs

The Australian Quarantine and Inspection Service (AQIS) oversee the Export Control (Organic Produce Certification) Orders - these orders make it illegal to export organic produce without a government to government certificate.

AQIS has become concerned about the number of organic certified input products which do not meet the requirements of the export standard - the National Standard for Organic and Bio-Dynamic Produce.

Are the inputs / products used in an organic system eligible for use in the export certification process?

The Australian Quarantine and Inspection Service (AQIS) approve organic certification organisations to oversee the export certification process.

The certifying organisations are responsible for ensuring that organic and bio-dynamic products for export comply with the National Standard for Organic and Bio-Dynamic Produce (National Standard). The inputs / products used in an organic system for export must be compliant with the National Standard. This includes fertilisers, compost, treatments for insects and pests, disease control, sanitation, food additives and processing aids. Non-compliance with the National Standard at any stage of production makes the end product ineligible for export and can lead to loss of organic status under this standard.

Have you checked if what you use in your system is compliant with the National Standard?

There are a lot of products on the market claiming to be eligible for use in organic systems, but these claims are not always applicable to the National Standard. Operators of certified organic enterprises are encouraged to undertake research before purchasing and using inputs in their systems regardless of what a label states or a business recommends. Do not use a product just because it has been recommended by someone or the label makes claims that it is organic, the product may be certified under a different system to the National Standard. It will be the organic status of the enterprise that is affected should this advice be wrong.

How can I check?

Reference to the National Standard is always the best way of checking if a product is compliant for export (see: www.daff.gov.au/aqis/export/organic-bio-dynamic). If it or its ingredients are not listed in the National Standard then it is more than likely not compliant and should not be used.

When in doubt your certifying organisation should be consulted on product use, with a request that they provide written approval against the National Standard for its use. Many certifying organisations certify to private standards as well as certifying operators to the National Standard, hence the need to clarify that the product is eligible for use under the National Standard.

*For further information contact:
The AQIS Organic and Bio-Dynamic Program at:
npg.exports@daff.gov.au*

Good organic farmers don't get weed problems

Whilst visiting a friend recently (who also happens to be an organic farmer) she said something that really struck home – they were successful farmers

because they planned well ahead and were careful and precise with all of their farming operations. I immediately thought of how this statement encapsulates what is required to achieve successful weed management on organic farms.

There are three key stages to successful weed management:

- Plan and put strategies in place to prevent weed problems from occurring. This begins with good farm planning. Mapping topography and soil types to identify (and rectify) problem areas (e.g. poor drainage), then identify appropriate farm layout and crop and / or livestock rotations which build soil fertility, optimise production and minimise the risk of developing significant weed, insect pest and disease problems.
- Identify and understand the weed problem. This not only means understanding existing weed problems but also predicting *potential* weed problems. If a weed problem does exist then the first step of management involves identifying what the weed is; then developing an understanding of how it reproduces (e.g. seed, rhizome), what conditions favour the spread of the weed and finally, determining at what stage in its life-cycle is the weed most vulnerable with the aim of determining the best time and method to implement a control option.
- Utilising appropriate farm practices and implementing these in a timely and accurate manner is imperative to achieving good weed management. For example, harvest, bale, mulch, cultivate or graze weeds before they can set seed; precision sowing of crops to avoid gaps where weeds can grow and to facilitate post emergent weed control.



*Above: Precision sowing facilitates weed management. Photo shows inter-row weed cultivation in lupins.
Source: www.agric.wa.gov.au/PC_93476.html?s=1001*

Being an organic farmer is no excuse for having a weed problem. Planning, timeliness and precision in farm operations are essential to avoid the development of significant weed problems.

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News, publications, commentaries & events

News & commentaries

Symposium provides a broad sweep of climate and greenhouse gas research

(Extract from an article by NSW DPI's Rebecca Lines-Kelly. The full article can be read in the June 2011 edition of *Agriculture Today*:
www.dpi.nsw.gov.au/aboutus/news/agriculture-today)

A symposium in Armidale has offered some fascinating insights into the research work going on to help agriculture adapt to climate change and reduce its greenhouse gas emissions.

NSW Department of Primary Industries (DPI) and the University of New England (UNE) staged the symposium, through their joint venture partnership, the National Centre for Rural Greenhouse Gas Research.

If you'd like to know more about all 36 presentations at the symposium, they are available on the website of the National Centre for Rural Greenhouse Gas Research:
www.une.edu.au/piic/ncrggr.php

DTIRIS offers fully subsidized Gold Premier listing on the Australian Regional Food Guide

NSW Trade & Investment, Regional Infrastructure & Services, is offering eligible NSW food and non-alcoholic beverage producers a fully subsidised Gold Premier listing on the Australian Regional Food Guide. All organic producers on the site are marked with an organic logo. For further information and application form go to:
www.australianregionalfoodguide.com.au/images/stories/States/NSW/application_for_subsidy.doc

Nominations open for the 2011 Premier's NSW Export Awards

The Premier's NSW Export Awards are an annual program which aims to recognise excellence in the export of goods and services by NSW business.

The Office of Trade, Business and Industry is a major sponsor of the Awards, and sponsors the Exporter of the Year Award and the Regional Exporter of the Year Award. Award categories

include agribusiness, services, small to medium manufacturer, minerals and energy and emerging exporter. Entries close on 22 August, with winners being announced in Sydney in October. See:
www.eawards.com.au/export2011/nsw/intro.php

Organic no-till

The U.S. based Rodale Institute has developed a crimping roller that facilitates cover crop management without the use of cultivation or herbicides prior to sowing. Their website:
www.rodaleinstitute.org/no-till_revolution describes various experiments and experiences (good & bad) with the technique and also provides plans for manufacturing the roller.

Above: Rodale Institute's no-till roller (Photo:



www.rodaleinstitute.org/introducing_a_cover_crop_roller

Publications

NSW DPI organic farming publications

These popular organic farming publications from NSW DPI's Tocal College provide information for aspiring organic farmers:

- *Organic farming an Introduction*: covers composting, earthworms, converting to organics and certification.
www.dpi.nsw.gov.au/aboutus/resources/books/hop/organic-farming-intro-book
- *Organic farming – soils, crops, fruit and vegetables*: explains the principles of organic cropping plus contains an extensive range of case studies for enterprises such as soybeans, wheat, citrus, nuts, coffee, strawberries, tropical fruit, sheep, cattle, vegetables and many other examples.
www.dpi.nsw.gov.au/aboutus/resources/books/hop/organic-2-soilsetc
- *Organic farming – livestock*: The third book in the organic farming series shows how to produce livestock using organic farming methods, with particular emphasis on sheep

and wool:

www.dpi.nsw.gov.au/aboutus/resources/books/hop/organic-livestock

An extensive number of case studies are contained in the publications. A sample of these can be viewed at DPI's organic farming website:

www.dpi.nsw.gov.au/agriculture/farm/organic

Other Tocal College publications can be viewed at: www.tocal.nsw.edu.au/publications

Managing Cover Crops Profitably 3rd Edition

Despite being written for U.S. conditions, 'Managing Cover Crops Profitably' provides valuable insight into the management, benefits and problems associated with using a range of cover crops.

PDF (4.46MB) and on-line text versions are available to download at: www.sare.org/Learning-Center/Books/Managing-Cover-Crops-Profitably-3rd-Edition

Books to help bring back wildlife on farm

Eureka Prize winner and biodiversity scientist David Lindenmayer has written a number of practical guides on ways farmers can encourage wildlife back onto farms and improve on-farm biodiversity:

- *Wildlife on farms: How to conserve native animals.* See: www.publish.csiro.au/pid/3547.htm
- *Trees and biodiversity: A guide for farm forestry.* See: www.publish.csiro.au/pid/3992.htm
- *What makes a good farm for wildlife?* See: www.publish.csiro.au/pid/6450.htm

Events

Organic Expo expanding

The Organic Expo has expanded to two shows in 2011 to provide even more opportunities for organic businesses - Sydney International in August for trade and consumers and a second consumer show in Melbourne in October.

Organic Expo & Green Show International
5-7 August 2011
Sydney
Trade & Consumer Show
www.organicexpo.com.au

Organic Expo & Green Show
15-16 October 2011
Melbourne
Consumer Show
www.organicexpo.com.au

Websites of interest

www.dpi.nsw.gov.au/agriculture/farm/organic

www.hawkesburyharvest.com.au/

www.australianregionalfoodguide.com.au

www.organic-systems.org/index.html

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<http://www.dpi.nsw.gov.au/aboutus/resources/periodicals/newsletters/organic-news>

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