

Organic news

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Introducing the 2012 NSW Organic Pioneers Award finalists

A top field of applicants across a broad cross-section of the NSW organic industry applied to enter the inaugural NSW Organic Pioneers Award. From an organic chef, a bio-input manufacturer, to broadacre farmers and market-gardeners, all entrants exemplified the achievements of those in the organic industry that have shown innovation and who are actively practicing and promoting the principles and benefits of organic food and farming systems.



Judges for the Award were Professor Stuart Hill (Foundation Chair of Social Ecology at the University of Western Sydney and Founding Director and Co-Editor of the Journal of Organic Systems); Andre Leu (Chair of the Organic Federation of Australia, OFA, and President of International Federation of Organic Agricultural Movements, IFOAM); and David Mason (NSW DPI

Urban Agriculture Leader and Churchill Fellowship recipient).

All three judges described all entrants as exceptional and their decision, a difficult one: "Overall the applications for the inaugural NSW Organic Pioneers Awards, representing the organic industry categories from the 'soil to the plate' were of a very high standard. The top three finalists were exceptional making the task of selecting a winner very difficult for the three judges" they said.

The three finalists chosen to contend this year's Award are:

- **Rob Fenton**
- **Sam Statham**
- **Joyce Wilkie and Michael Plane**

Rob Fenton

Rob Fenton is head teacher at the National Environment Centre (NEC), a specialist campus of the Riverina Institute of TAFE, located at Albury NSW. Rob established and runs the certified organic farm at the NEC and the organic farming teaching program. The NEC farm is a 180 ha certified (with ACO) organic farm producing organic



Above: 2012 NSW Organic Pioneer finalist Rob Fenton

lamb, organic free range pork, organic free range chicken and eggs, organic olives, organic vegetable and herbs and honey. Rob is also a committee member of the local Landcare group, a director and vice chair of the Albury Conservation Company supporting protection of local endangered species, and treasurer of the Hume Murray Food bowl, a producers group running the local farmer's market.

The NEC organic farm was designed in the mid 1990's to provide high quality food for local people in the face of what its designers perceived were the three big uncertainties for food production at the time, climate change, peak oil and diminishing fertiliser reserves. At the same time to have a positive effect on the local environment and also model a viable business.

The NEC's Diploma of Organic Production was the first accredited on-line distance organic farming course in Australia. It is designed to assist farmers develop robust organic farm systems. The course incorporates a network of organic farming teacher / mentors across Australia where students and their farm are matched to a mentor who has experience in their specific part of the organic industry and the farms bioregion. In the last 5 years approx 250 people have completed the course. The course is now starting to take international students.

For smaller scale food producers the NEC runs an online Certificate IV in Permaculture. This is the only online nationally accredited Permaculture course in Australia. The NEC is also developing a number of new delivery options for organic farming training including, a Certificate IV online organic production traineeship, and a low English language Certificate III in Permaculture for isolated communities.

If Rob wins the Organic Pioneers Award he plans to travel to the USA where he would visit the Rodale Institute, meet with groups such as Greenhorns that are involved with Landlinks project which aim to engage young motivated and passionate people in organic farming. He would also like to meet with successful organic farmers in the USA.

Sam Statham

Sam Statham's family business 'Rosnay' is located at Canowindra. 'Rosnay' is a certified organic (with OFC) farm producing winegrapes (20ha of vineyard), olives (10ha) and figs (1ha). Value added products include wine, olives in brine, olive paste, figs in syrup, fig preserve, and fig syrup.

'Rosnay' is one of the farms which forms a part of Rivers Road Organic Farms a 140 hectare property established by Sam and his family. Subdivided into twelve farming and ten residential blocks, Rivers Road Organic Farms utilises the concept of cooperative production systems, operating under an organic covenant within a community title subdivision (subdivision of the farm to create blocks for new growers to live and work cooperatively but also with self reliance. (see: www.organicfarms.com.au/search/label/General).

Sam's philosophy typifies the organic ethos: 'Our belief system is based on the search for authenticity, in the sense that our way of life is as organic as possible, and we "walk the talk". We know there are ways and means to do things for short term benefit but which will always come back and bite us. Working organically becomes an all encompassing world view, extending beyond the paddock and into the value adding, marketing and selling of our products. Whilst I have no way of measuring it, I would say that in the world of seamless internet communication, that social responsibility and ethics have to be part of anyone's business code if you want to retain the respect of your customers and suppliers, colleagues and community".

Sam has been active in the organic industry for many years. After studying for a geography degree in France, working on biodynamic farms in New Zealand, and for the Department of Land and Water Conservation in Cowra he completed a TAFE certificate in Organic Farming, later working part time as an organic farm auditor for an organic certification organisation. Sam was a past chairman



Above: 2012 NSW Organic Pioneer finalist Sam Statham and partner Simone with daughters Georgie and Molly in 2008 (and since then, son Floyd)

of the Vignerons Committee of the Biological Farmers of Australia, and a founder and committee member of the Australia-New Zealand Organic Wine Show. He is regularly invited to speak at events and conferences including the Mind Body Spirit Festival in Darling Harbour, Floriade in Canberra as a guest of SlowFood ACT and the 2009 Australian Society of Viticulture and Oenology's conference in Mildura.

The establishment and development of Rosnay has seen the trial and implementation of many innovative techniques which have been subsequently adopted by other vineyards in the area, with 4 out of approximately 10 vineyards in the Cowra region now certified organic. Techniques including grazing sheep in the vineyard during winter and raising of the vine cordon to allow longer grazing windows, use of modified equipment for weed management, extensive use of mulches and on-farm composting and the development of mulch spreading equipment, trialling new crops such as buckwheat, unique disease suppression techniques such as use of micronized guano with high silica, milk, and predatory fungi to control winegrape diseases, and internet / wireless based drip irrigation systems.

Should Sam win the Award he would like to go to France to study organic viticulture, visiting destinations such as Chapoutier where biodynamic methods are applied with great success.

Joyce Wilkie and Michael Plane

Originally trained as scientists Joyce Wilkie and Michael Plane have combined their

- research skills;
- entrepreneurial talents;
- commitment to the growing of nutritious tasty food using organic techniques;
- and their love of farming and teaching;

to turn Allsun Farm into the thriving vegetable, fruit, egg and tool business that has inspired and helped gardeners and farmers to grow organically.

How to convert half an acre of land with only 50mms of topsoil, in an area of unpredictable rainfall, freezing winters and dry hot summers into a thriving market garden was the challenge at Allsun. Whilst the climate hasn't changed, clever growing systems, appropriate tools and a lot of hard work have created an excellent model for small-scale organic food businesses.

Allsun is a short food supply chain business, supplying local consumers, which ensures that maximum value for the produce is captured by Allsun. The Plane's have raised a family, maintained a modern lifestyle and stayed in business for three decades from their farm base.

To complement their market gardening activities on Allsun Michael set out to source equipment



Above: 2012 NSW Organic Pioneer finalists Joyce Wilkie and Michael Plane

appropriate to small scale horticulture. After discovering ancient Korean hoes, quality Swiss hand tools, and state of the art electric fencing, they then discovered there was a whole range of other equipment they needed, but just couldn't buy. So they made tools starting with the Gundaroo Tiller Broadfork. Michael and Joyce then seized another opportunity and secured another income stream for the business by establishing Gundaroo Tiller.

Passive solar building, solar power and water heating, water recycling and nutrient cycling define their lives. They strive to grow food in organically nourished soil, feed animals with locally grown feedstuff and sell tools that will last a lifetime or more. All the produce grown on the farm is sold locally either directly to families in weekly boxes or to restaurants who want to be involved in the farm - food - feast ethic. Restaurant biodegradable waste is brought home to the farm to feed worms, their animals and birds are cycled through the vegetable production areas and any biodegradable waste produced on farm or as Gundaroo Tiller packaging is recycled through compost heaps or as mulch.

Both Joyce and Michael have had active involvement in developing strong relationships with their local community.

Joyce was instrumental in starting the Collector Pumpkin Festival, she chaired the Gundaroo committee that worked with Open Gardens Australia to organize a very successful Open Village event. Joyce and Mike now host an annual Organic Fair with the Open Garden scheme promoting backyard self sufficiency and organic farming.

Their latest project growingthegrowers.com is a web-based initiative to help connect farming mentors with aspiring new growers through internship programs, land share and teaching gardens, and to help and link farmers, gardeners, and aspiring growers with each other and their customers (see www.growingthegrowers.com)

Joyce was a farm inspector for NASAA for over 3 years, and served on both the Canberra Organic

Growers and the NSW & ACT State Council of Organic Growers.

They have run short courses on organic farming and gardening and Joyce taught the Organic Farming Certificate III course at Canberra Institute of Technology between 1995 – 98. Currently they run Organic Market Gardening Courses through Milkwood Permaculture.

In 1986 Joyce and Michael published a vegetable planting calendar for the colder areas of Australia which included many of the new varieties that they were trialling on the farm. This calendar changed into a series of monthly planting cards that are part of an electronic book published in 2004.

Joyce has been a regular contributor to local ABC radio on the subject of growing vegetables and cooking them.

Should Joyce and Michael win the Award they plan to visit some places in the USA where people are already addressing the issue of urban food farming. A successful application would allow them to meet people instrumental in driving these new initiatives, look at land sharing possibilities and talk to some really amazing young people that are using the medium of online video to document gardening and farming skills so that knowledge can be easily shared.

Reward for the 2012 Organic Pioneer

Apart from the usual accolades, the 2012 Organic Pioneers Award winner will receive a travel bursary to the value of \$6,000 to investigate organic enterprises or research facilities of their choosing. The Award winner will be required to prepare a report outlining what they have learnt on their trip and how this will impact their business and the organic industry as a whole.

The NSW Organic Pioneers Award is coordinated by NSW Department of Primary Industries and is supported by key organic organisations including the Biological Farmers of Australia (BFA), the National Association for Sustainable Agriculture Australia (NASAA) and the Organic Federation of Australia; organic certifiers, Australian Certified Organic, NASAA Certified Organic and the Organic Food Chain; as well as the NSW regional food group, the Sapphire Coast Producers Association.

The Award for the 2012 NSW Organic Pioneer will be presented during a cocktail event to be held during Sydney's SUSTAIN Expo (formerly the Organic Expo and Green Show) at Moore Park on July 19.

For more information contact Robyn Neeson, (02) 6951 2735. E-mail: robyn.neeson@dpi.nsw.gov.au

Reducing tillage on organic farms

Annual croppers (organic and conventional) have traditionally used cultivation for seedbed preparation; weed control and moisture conservation (via mechanical fallowing).

More recently the use of conservation tillage has become widespread in conventional agricultural systems. However, minimum tillage cropping (particularly no-till systems) relies heavily on strategic herbicide management and application.

Minimum or no-till farming has been less readily adopted by organic farmers, largely because there are few herbicide options¹ available and cultivations are required to achieve satisfactory weed control. Opponents of organic farming often cite this repeated cultivation as a reason against its adoption.

Research in the US and Europe is investigating techniques to reduce tillage in organic farming systems. A brief review of this research follows.

Blade-rolling

In North America most of the research into conservation tillage in organic farming systems is directed at creating a vegetative mulch formed by killing cover crops which then suppress weeds in the subsequent cash crop phase. Weed suppression by the mat of rolled cover crop residue depends on cover crop, weed species and height, and the density (thickness) of the cover crop mat.

Below: Rodale Institute's no-till roller (Photo: www.rodaleinstitute.org/introducing_a_cover_crop_roller)



¹ Some bio-herbicides that are available include natural vinegar, corn gluten and pine extracts. These are permitted in certified organic farming in some regions of the globe but are not to date allowed in Europe (European Council (EC) Regulation No. 834/2007 on organic production).

Various techniques are advocated. Termed blade-rolling, this is achieved utilizing a roller-crimper (see picture). To see the roller-crimper in action go to: www.youtube.com/watch?v=-lcwB9h-MCA

The success of this technique relies on developing termination strategies so that cover crop species are killed consistently and early enough in the growing season, providing a sufficient window of opportunity for subsequent cash crops to be sown and harvested successfully. Rolling cover crops at advanced growth stages (before seed set) improves killing efficacy and allows for maximum accumulation of a weed suppressing mulch. Roller-crimpers work best with tall-growing cover crops. Small weeds are not killed by rolling.

Ashford and Reeves (2003) undertook some of the earliest research into blade rolling and reported that three cover crops, winter rye (*Secale cereale*), winter wheat (*Triticum aestivum* L.) and black oat (*Avena strigosa* Schreb.) could be killed effectively if rolling was delayed until at least the early milk growth stage of kernel development. Subsequent research by Mirsky et al (2009) for winter rye confirmed this observation.

Research by Carr et al. (2011) concluded that delay in terminating winter cover crops can result in late planting of the summer cash crop and consequential late maturation of annual crops. They suggest that success could lie in adopting flexible rotations, involving amongst other things, growing winter cash crops (as opposed to summer) and summer cover crops, use of shorter season varieties (cover crop and cash crop); and a greater integration of forage crops in rotation with cash grain crops.

In the northern Great Plains region of the U.S. field pea and faba bean were identified as being a superior choice for a green manure and cover crop compared with other annual legumes (Badaaruddin and Meyer, 1989; Walley et al 2007). These legume species produced more cover crop dry matter, fixed more N biologically, and depleted less stored soil water. Izard (2007) determined that termination of peas was most effective when crimp-rolled using the blade roller at the flat pod growth stage.

Problems identified with using terminated cover crops as weed suppressive mulch include excessive water use by cover crops, inability of cover crops to supply adequate amount of N for subsequent cash crops, the failure of cover crops to suppress perennial weeds and difficulties in sowing the cash crop due to residue interference with planter operations.

Creamer et al. (1995) compared termination of several cover crop species using a sickle bar mower, flail mower and roller attached to a blade plough. They concluded that while clogging could be problematic with vine like cover crops (e.g., hairy vetch, *Vicia villosa*), sickle bar mowing was as effective as the roller/blade plough in killing cover crops.

Much of the recently published research on blade rollers and cover crops in the context of organic no-till acknowledges that the inability to suppress weeds consistently is a major obstacle that must be overcome for rolled and killed cover crop residue to be considered a viable weed control tool.

A systems approach to reduced tillage

The advances in use of specific weed suppression methods such as blade rolling without consideration of the systemic ('holistic') nature of organic agriculture has encouraged some researchers to consider system design in addition to these control tactics. They see integrated systems based on ecological principles as the key to successful weed management in organic (and conventional) reduced tillage systems.

Anderson (2010) proposes a nine year rotation guided by principles of weed population ecology. Population based weed management involves cultural tactics that reduce weed seed survival in the soil seed-bank, suppress weed seedling emergence and minimise seed production of weeds that escape control.

Anderson's proposed rotation is comprised of perennial forages and annual crops that will disrupt weed population growth and reduce weed density. The rotation includes 3-year intervals of no-till, which improves both weed population management and soil health. A typical rotation included 3 years of lucerne, followed by a 2-year interval warm-season crop sequence (e.g. corn - soybean) followed by a 2-year interval of cool season crops (e.g. oat/ pea mix for forage - winter wheat) and then another 2-year interval warm-season crop sequence (e.g. soybean - corn). Further weed management options are suggested within the suggested sequences.

The no-till components of Anderson's rotation include the lucerne and the oat/pea-winter wheat-soybean sequence. Furthermore, Anderson suggests that a 7-year interval of no-till could occur if weeds in corn can be controlled without tillage (e.g. by flaming) during the ninth year, and before lucerne is cultivated in its third year.

Unlike North American researchers who have focused on the complete elimination of tillage, European researchers have concentrated on reduced tillage through the reduction of tillage depth or the application of non-inversion practices. Combinations of these two approaches have been implemented by the use of the two-layer plough or the layer cultivator (chisel plough), and largely follows the organic principle of 'shallow cultivation and deep loosening'. Generally when compared to conventional plough systems, reduced tillage systems based on these principles clearly were superior with respect to soil biology and fertility (Mader and Berner, 2011).

Koepke (2003) acknowledges the role that cultivation plays in nutrient management within organic systems. He sees the reduced net



Above: The Actisol two-layer plough. Note the deep tillage tines at the front and the shallow roller cultivator at the rear. Source: www.vignevin-sudouest.com/actions-itv/recherche-itv/images/Actisol3.jpg

mineralisation often occurring under conservation tillage systems as problematic to organic farmers who must deal with a lower nutrient supply (due to limited use of P and K fertilisers, and the prohibited use of mineral N fertilisers). In organic systems therefore nutrient uptake by plants has to be enhanced via optimised soil structure due to appropriate tillage procedures unlocking nutrients from the soil bulk. Koepke states 'a combination of "shallow soil inversion" and "deep soil loosening" performed with so called two-layer ploughs seems

to be a good compromise for controlling weeds, enhancing mineralisation and nitrification, root growth and nutrient uptake, while reduce fuel consumption and physical disruption by deep inversion'.

Mader and Berner recognise the lack of knowledge on the effect of reduced tillage and no-tillage systems under organic farming and the soil carbon stock across the whole soil profile. In response to this lack of information a European Network of researchers has been formed. Recently the new European project "Reduced tillage and green manures for sustainable cropping systems" (TILMAN-ORG) has started. Over three years, eleven European countries will collaborate in this project under the leadership of the Swiss Research Institute of Organic Agriculture (FiBL). See: www.tilman-org.net/tilmanorg-newsitem.html?&tx_ttnews%5Btt_news%5D=612&cHash=70d4797fa801dedeb2ae50181bc983e0

The aim of the TILMAN-ORG project is to develop reduced tillage and green manure systems that will work in organic farming. The research of the TILMAN-ORG project focuses on strategies for efficient weed management, assessment of greenhouse gas emissions and improvement of nutrient management. A video explaining the project can be viewed at: www.tilman-org.net/tilman-org-about.html#c7173

Conservation tillage and carbon sequestration

Strategic use of tillage within (conventional) conservation farming systems has become a hot topic in the context of carbon sequestration and carbon pricing.

Mixed farming systems use a pasture phase to build soil organic matter, which contains carbon, nitrogen, phosphorus, sulphur and other nutrients. During the cropping phase organic matter breaks down, releasing carbon dioxide to the air and nutrients to the soil that become available for plants. Ploughing in particular is known to decrease the organic matter content of soils. Stubble retention and no-till practices were intended to minimise that loss or to even increase soil organic matter. However, long term trials at Wagga Wagga and Harden showed that conservation farming practices did little to increase soil carbon levels (NSW DPI, 2012).

Recent work by CSIRO researcher Clive Kirkby and colleagues has shown there may be a way to overcome the low rate of carbon sequestration under cropping.

Mr Kirkby showed that soil organic matter not only contained carbon, nitrogen, phosphorus and sulphur, but it contained those elements in surprisingly tight ratios. These ratios seem to be controlled by the soil's micro-organisms. When stubble is retained with lots of carbon but little nutrients (nitrogen, phosphorus and sulphur) there will be carbon loss to the atmosphere. This potentially could be reduced if nutrients are added in a defined ratio to balance the carbon in the stubble, resulting in much more of the carbon as soil organic matter.

Dr. Mark Conyers (NSW DPI, Wagga Wagga) is now leading collaborative trials for the next five years in southern NSW which will extend Clive Kirkby's research on the strategic use of tillage within conservation systems. The trials will investigate if adding supplementary nitrogen, phosphorus and sulphur to the soil before cultivation, is able to minimise the loss of existing carbon and increase capture of added stubble carbon (NSW DPI, 2012).

Conclusion

There is little doubt that the issue of reduced tillage in organic farming is a complex one; the impact on nutrient management and weed management being the most critical elements requiring further research.

For more information contact Robyn Neeson, (02) 6951 2735. Email: robyn.neeson@dpi.nsw.gov.au

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Kaolin clay – a new control for fruit fly?

Homegrown strategies may soon answer growers' needs to manage Queensland fruit fly (Qfly) and maintain access to domestic and export markets.

The withdrawal of chemicals including dimethoate used to control the pest has motivated NSW DPI to develop new approaches, including the use of organic products to repel Qfly.

NSW DPI research horticulturist Jenny Ekman said repellents, combined with ongoing orchard management and post-harvest measures, would contribute to a systems approach.

"We are trialling two products, kaolin clay and light spray oil at the Bathurst Primary Industries Centre," she said.

"Internationally-recognised research has shown that kaolin clay, an organically registered product which is commonly used to prevent sunburn in apple production, can also repel Qfly.



Above: At the Bathurst Primary Industries Centre research horticulturist Jenny Ekman inspects apples covered with kaolin clay in a trial to confirm repellents of Queensland fruit fly. (Photo: Bernadette York)

"Tiny clay particles stick to the insects, agitating and repelling them, which stops female fruit flies from laying eggs in treated fruit.

"We also think the clay covering may disguise crops from Qfly searching for suitable fruit to lay their eggs."

Qfly cause havoc in crops when females lay eggs in fruit – the eggs hatch into maggots which feed on and destroy the fruit.

Dr Ekman said light spray oil emulsions were registered as an insecticide for a variety of horticultural crops, including citrus, banana, pome and stone fruit.

"Mainly used for aphids and mites, we have evidence that spray oils have effectively managed Qfly in tomato crops," she said.

"We already know that both treatments are soft on beneficial insects and would fit into an integrated pest management system."

Paraffin oil is registered for use in some organic systems but growers should check with their certifier to confirm its suitability for organic crops.

The treatments are being trialled on apple (pome) and peach (stonefruit) crops in Bathurst.

Dimethoate has been widely used in conventional farming before and after harvest to prevent infestation of many different fruits with Qfly.

There is therefore an urgent need to develop new methods to prevent, or at least reduce, infestation in the field by Qfly, Australia's worst horticultural pest.

For more information contact Dr Jenny Ekman, (02) 4348 1942. Email: jenny.ekman@dpi.nsw.gov.au

From the March 2012 edition of NSW DPI's *Agriculture Today*. Story by Bernadette York, Media Officer, Video, NSW DPI.

Pest control products and their use on organic farms

Organic standards require that organic farmers initially make use of practices rather than products to manage pests. Input products are considered a 'last resort' when dealing with pests and diseases. System design and pre-emptive management strategies are the tools preferred over the so-called 'sledgehammer' approach to managing pests. (See Organic News Spring edition 2011 article on 'Farmscaping':

www.dpi.nsw.gov.au/__data/assets/pdf_file/0019/412534/Organic-news-spring-2011.pdf)

In saying this, there are an ever increasing number of 'organic allowed' inputs being promoted as permitted for use on organic farms. Some products have been certified by certification organisations as acceptable for use whilst other products, whilst they still may be acceptable for use, have not been 'certified', and users must apply to their certifier to have the product verified as acceptable for use in their organic system.

In organic systems allowed pesticides are required to be natural products rather than synthetic chemicals and the formulation must not include inert ingredients that are synthetic chemicals. For example, pure pyrethrins are allowable inputs but pyrethrins in formulations with the common synergist piperonyl butoxide (PBO) are not. (Pyrethrins are an extract from the pyrethrum daisy, *Tanacetum cinerariifolium*, whereas PBO is a synthetic chemical). Other allowed inputs are registered pesticides, e.g. azadirachtin (neem) products.

There are a number of important points that organic producers should be aware of associated with the use of any pest control product.

Product registration

Organic farmers need to check that individual products are allowed inputs as defined by organic standards, are approved for use by their certifying organisations, and are also registered.

All pest control products regardless of being certified organic or not, must comply with the same regulations regarding their use.

Australia has a national registration system which requires that pest and disease control products be evaluated before they can be legally supplied, sold or used. The Australian Pesticides and Veterinary Medicines Authority (APVMA) is the agency responsible for managing this system.

Not all biological or natural products require registration. However, in cases where a biological or natural product makes claims that it can be used to control a particular condition or have beneficial effects, registration is required. To find out if a biological or natural product does require registration the registration section of the APVMA



Above: Pyrethrin, a chemical which controls a wide range of insect pests is extracted from the pyrethrum daisy, *Tanacetum cinerariifolium*.

should be contacted (See: www.apvma.gov.au/registration/index.php)

Products must be used in accordance with the directions for use written on the product label. Products can only be used on the crops and at the rates specified on the label unless special permission is received to do otherwise – known as an Off-label Permit. The acceptability of a product and its application requirements may differ between States.

Use of 'home made' products

Many 'allowed inputs' in organic farming systems are what is commonly referred to as commodity chemicals. Commodity chemicals are raw chemicals that have not been formulated into specific products, and include compounds such as lime sulphur and potassium permanganate. Many commodity chemicals are hazardous substances and human exposure has to be controlled under hazardous substances (OHS) legislation.

Under current federal and state legislation, use of these commodity chemicals as pesticides is illegal, as they are not registered products and have not been evaluated by the APVMA.

Nevertheless, it is possible for organic producers to obtain a minor use permit from the APVMA to legalise their use. If a product is used regularly by a number of producers it is also possible for a permit to be obtained by an industry association (such as an organic certifier) who can coordinate permit applications on behalf of many individual growers. Permit applications for commodity chemicals are more complex than for registered proprietary products. Help should be sought from a regulatory consultant or state department of primary industry/agriculture. For more information on

Permits see:

www.apvma.gov.au/permits/agricultural/index.php

At both the federal and state levels, it is recognised that the current system for regulating pesticides and veterinary medicines does not cater for the needs of organic farmers. Initiatives for change are underway. Changes being examined include exempting low risk organic inputs from regulation and introducing minimal, fast track registration for low risk organic inputs. However, regulatory change is always slow as it is hard to get agreement between different levels of government and between agencies at the same level of government.

Organic exports and using input products

If you are exporting organic produce not all input products that are permitted for use in Australia may be acceptable to the importing country. For example, the proprietary products Extinosad® and Flockmaster®, whilst acceptable for application as lice and blow fly treatments on livestock sold as organic in Australia are non-allowed inputs under the USDA's National Organic Program (NOP).

Exporters of organic produce should verify the acceptability of use of any input product with their organic certification organisation or with the importing countries regulatory authority.

Avoiding resistance to organic pest control products

Application of a pest control product – organic or otherwise - requires careful planning. Incorrect application techniques can lead to problems such as development of resistance.

When pesticides are the sole or predominant method of pest control, resistance is commonly managed by alternating pesticides with different modes of action (in different pesticide groups) to delay the onset of or mitigate existing pest resistance. Because reliance on chemicals is discouraged in organic systems pest resistance is less likely to develop but may still do so if the same pest control product is used repeatedly. It may just take longer for pest resistance to develop. Therefore it is just as important to avoid reliance on one pest control product and to consider rotating products with different modes of action in the pest control program.

Keeping records

An important aspect of pesticide application is keeping records. Record keeping is essential to comply with organic certification and legislation.

Records are required under:

Pesticides Act and Regulations -

- application records
- training records

OHS Act and Regulation -

- inventory of hazardous substances and Dangerous Goods
- risk assessments and Standard Operating Procedures (SOP) / Safe Work Method Statements (SWMS)
- PPE use and maintenance
- training records

Organic certification -

- all inputs
- all outputs (including sales)
- wastage
- produce withheld from sale

Key messages

Users of agricultural chemicals, including 'natural' pest control products should:

- Ensure the product is registered for the use it is intended. If not registered, it may be possible to apply for an off-label (or minor use) permit. Organic certifiers may apply for a permit on behalf of a group of producers;
- Ensure correct application techniques and product rates are used and that records of application are maintained.
- Rotating products with different modes of action will help to avoid the development of pest resistance.
- Organic producers must ensure the product is acceptable for use under organic standards. Acceptability of use may vary between certification organisations and countries.

For more information contact Robyn Neeson, (02) 6951 2735. Email: robyn.neeson@dpi.nsw.gov.au

News, publications, commentaries & events

News & commentaries

Queensland organic farmers helped by new mining guidelines

The Biological Farmers of Australia (BFA) is releasing guidelines for organic producers and mining companies endorsed by the Queensland Government.

Unlike conventional properties, organic certified producers are afforded some protection under a number of Acts.

Petroleum and gas activity on an organic or biodynamic property is described as an advanced activity under Acts including the *Mineral Resources Act 1989* and the *Greenhouse Gas Storage Act 2009*.

This means energy companies need an agreement with the landholder before they can go onto an organic or biodynamic property.

BFA's Greg Paynter says the *Dealing with resource development activities: Guidelines for organic producers and resource development companies* has been a long time in the making.

He says, "The Guidelines will help organic producers and mining companies understand their rights and responsibilities.

"Some of the greatest threats mining poses to organic and biodynamic properties are chemical contamination and altered public perception.

"The materials used to extract or explore wouldn't be compliant with the requirements of an organic standard."

Hydraulic fracturing, or fracking, for coal seam gas uses a host of chemicals; however this type of mining operation has operated on organic farms where the farmer and company have been able to negotiate suitable arrangements and not compromised the organic integrity of the property.

The Guidelines will soon be available on the BFA website.

Source: BFA Press Release, 19 June 2012. For more information contact kathy.cogo@bfa.com.au

Weeds of National significance

Twelve new weeds have been added to the list of Australia's weeds of national significance. They are: African boxthorn, asparagus weeds, bellyache bush, brooms, cat's claw creeper, fireweed, gamba grass, madeira vine, opuntoid cacti, sagittaria, silverleaf nightshade and water hyacinth.

See: www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds

Sanger & Cleavers merge to form the Arcadian Organic and Natural Meat Company

EXPORT meat marketer Sanger Australia is finishing the financial year with a growth spurt, merging with a rival exporter and establishing another business for its expanding organic trade.

Sydney-based Sanger, which sources beef, veal and lamb from meatworks Australia-wide for buyers in up to 70 countries and locally, has absorbed the operations of IBBCO Trading, also based in Sydney.

The 16-year-old IBBCO exports red meat, poultry and pork products to about 40 countries, principally in Asia, Africa and Eastern Europe, and is also a major player in the offal trade.

Just days after securing the IBBCO deal, Sanger signed off nine months of negotiations to team up with another meat business, Cleaver's, forming the Arcadian Organic and Natural Meat Company.

Cleaver's is already a prominent player in packaged organic red meat for domestic retailers, supplying house brand beef to Coles and Woolworths' Macro label in eastern Australia and more than 80 per cent of the nation's organic lamb.

It also supplies Franklins, IGA and other supermarkets with retail-ready packaged fresh meat lines and value-added products.

Sanger also sells to the domestic trade but about 70pc of its organic beef goes to nine export destinations, dominated by a big US customer base.

The organic trade has burgeoned since Sanger began testing its options overseas nine years ago selling just 66 head a week through its subsidiary The Organic Meat Company. It now moves about 400 carcasses weekly, and since 2009 has built its lamb business to about 500 a week.

When the new Arcadian 50-50 joint venture kicks off next month it will be Australia's biggest organic meat business, handling about organic 2000 lambs and 450 cattle a week.

Sanger's Alister Ferguson and Cleaver's Ken Taylor will serve as joint chief executives based at Sanger Australia's Sydney headquarters.

The Arcadian deal with Cleavers was also an ideal way to lift Sanger's lamb trade involvement to levels that complemented its beef strength.

Sanger's close ties with NSW processors Bindaree Beef and Monbeef and Victoria's RH Collinson are complemented by marketing relationships with many other plants, including the big Casino abattoir on the NSW North Coast.

Extract from: Sanger merge beefs up market share. Story by Andrew Marshall, The Land 21 June, 2012.

Full story:
<http://theland.farmonline.com.au/news/nationalrural/agribusiness-and-general/finance/sanger-merge-beefs-up-market-share/2595321.aspx>

Organic meat in short supply

The Australian organic meat industry says there is a shortage of organic meat for domestic and international markets.

Beef producer Simone Tully, from Goondiwindi on the Queensland-NSW border, says the global demand for organic meat is outstripping Australian supply.

She says the policies in Australia have held back producers.

"I think that we've been asleep at the wheel," she said.

"In terms of policy development, certainly the Organic Federation and organic industry, has been working from a very, very small base to meet the demand.

"And Australia in 2010 achieved \$1 billion in sales in the organic food category.

"This year we're doing a new report, the organic industry report, to be released in September."

The report will include more accurate data on how many organic producers there are in Australia, because for the first time farmers have been able to tick "organic" in the Australian Bureau of Statistics census.

Source: ABC Rural Wednesday, 11/04/2012
www.abc.net.au/rural/news/content/201204/s3475006.htm

USA: Organic market surpasses US\$ 31 billion in 2011

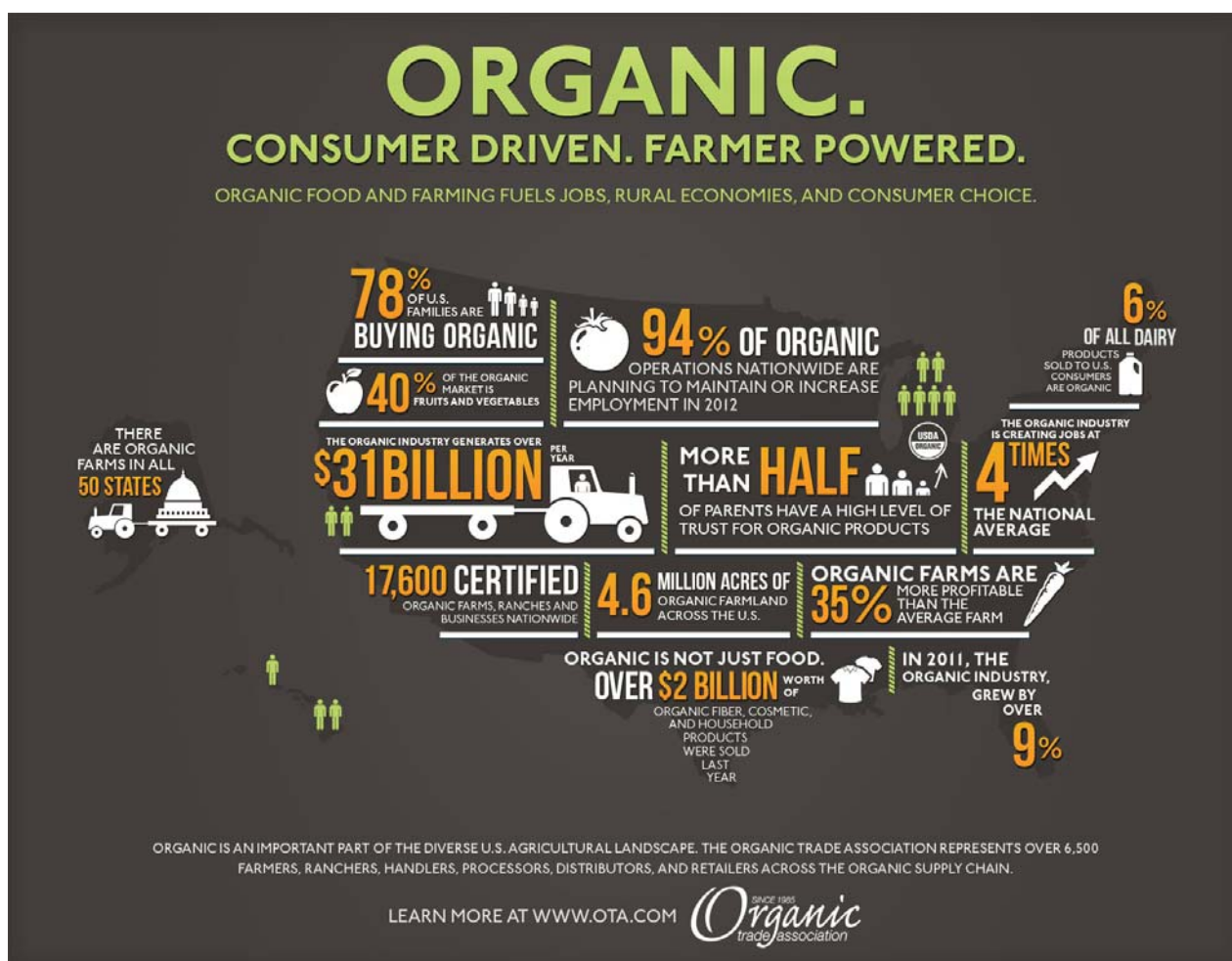
Driven by consumer choice, the organic industry in the USA grew by 9.5 % overall in 2011 to reach US\$ 31.5 billion in sales. Of this, the organic food and beverage sector was valued at US\$ 29.22 billion, while the organic non-food sector reached US\$ 2.2 billion, according to findings from the Organic Trade Association's 2012 Organic Industry Survey.

The overall organic product sales growth continued to outpace total sales of comparable conventionally

produced food and non-food items, which experienced 4.7 % growth. The organic food sector grew by US\$ 2.5 billion during 2011, with the fruit and vegetable category contributing close to 50 % over 2010 sales, but still remaining the smallest of the eight organic food categories. Organic food sales now represent 4.2 % of all food sales in the USA, up from 4 % in 2010. The easing of the recession, consumer price inflation due to input price increases, and consumers' increasing desire for convenience products were all factors that elevated growth for the year.

Meanwhile, organic non-food sales, which reached US\$ 2.2 billion in 2011, experienced a 11 % growth, while total comparable non-organic items grew only 5 %. Prospects for 2012 and 2013, as indicated through the 2012 survey results, indicate that organic food and non-food sales will continue to sustain growth levels of 9 % or higher. "With 94 % of organic operations nationwide planning to maintain or increase employment in 2012, the organic sector will continue to fuel jobs, rural economies and consumer choice," according to OTA's Executive Director Ms Christine Bushway.

Source: OTA Press Release April 2012.
www.organicnewsroom.com/2012/04/us_consumer_driven_organic_mark.html



Above: Statistics for organic agriculture in the US. Source: Organic Trade Association. www.ota.com

Organic food takes off in Hong Kong

Almost 25 years since the first organic farm took root in Hong Kong, the appeal of organic food is finally catching on.

But restaurateurs, chefs, suppliers and organic experts say scant supply is leaving consumers hungry for more, and what is available still costs too much.

One-third of the 7 million people in Hong Kong now buy organic food at least once a week, according to a survey released by the Hong Kong Organic Resource Centre the territory's first certification body.

Food safety concerns have pushed many consumers to look for safe alternatives. Scandals in mainland China involving poisoned infant formula and chemical-laced pork have made consumers sceptical of government assurances that the food supply is safe (see: www.npr.org/blogs/thetwo-way/2011/10/17/141424287/head-of-wal-mart-in-china-resigns-amid-controversy).

Whilst price is an obstacle for many Hong Kong consumers, figuring out just what's truly organic is also an obstacle. Many sellers claim that their produce is organic without certification to back them up. Consequently, consumers are highly suspicious of organic claims.

The existence of multiple labels confuses consumers, a government-commissioned study says. Foreign labels like that of the U.S. Department of Agriculture sit alongside local ones, and each represents a different standard. There is currently no Hong Kong standard for organic food. The government is studying whether its production and sale should be regulated, and if so, how.

Source:

www.npr.org/blogs/thesalt/2012/03/06/148041832/in-hong-kong-a-growing-taste-for-organic-food

And the latest.....China toughens organic rules

Fresh produce exporters to China may need to remove the word 'organic' from their labels as the country ramps up enforcement in the organic sector, the United States Department of Agriculture (USDA) said.

See: www.foodnavigator-asia.com/Policy/China-toughens-organic-rules

Webinars by eOrganic

Learn the latest in US organic farming practices and research by attending or watching an eOrganic Webinar. Whilst not all applicable to Australian farming conditions much of the information could be readily adapted.

The webinars are made available by eXtension which is a US based interactive learning environment delivering researched knowledge from land-grant universities across America.

For the latest Webinars see:

www.extension.org/pages/25242/webinars-by-eorganic

BFA secures funding to subsidise course on Organic Farming

Producers wanting to learn about organic farming can now do so for a fraction of the cost.

The Biological Farmers of Australia, BFA, has secured funding to subsidise the cost of an organic farming course for 55 students.

The Diploma in Agriculture (Organic Production) is available to anyone wanting to make a living from the land or is already doing so.

The curriculum takes 18 months to complete and is focused on developing plans to change or develop systems towards organic.

Two hundred students have graduated from the Diploma, which is offered through TAFE NSW Riverina Institute via correspondence. Students are linked with a mentor in their region to help them.

A \$400,000 grant from the National Workforce Development Fund means students only pay a third of course costs.

BFA director Holly Vyner says, "The Riverina Institute course is structured in a way that is highly supportive and practical. BFA is pleased to have secured this opportunity which will assist to grow the capacity of organic growers, and introduce the benefits of organic production to non-organic growers".

For more information about the Diploma in Agriculture (Organic Production) contact Rob Fenton on 0408 227 624 or Email: rob.fenton@det.nsw.edu.au

Events

SUSTAIN Expo, Moore Park Sydney July 20-22



The rebadged Organic Expo and Green Show is on again. Now known as Sustain Expo the event also has a new venue shifting to Sydney's Moore Park.

Oceania's premier natural & organic show now has the best of the Organic Expo with an exciting new lifestyle focus and a comprehensive coverage of all aspects of sustainability, appealing to today's eco-conscious consumer are being covered - Certified Organic, Fair Trade & Sustainable, Allergy Free, Green, Ethical & Wellness.

SUSTAIN is split into 2 shows: SUSTAIN TRADERS OCEANIA, the trade expo on Friday 20 July and SUSTAIN, the public show on Saturday 21 - Sunday 22 July.

What's new and exciting about SUSTAIN?

SUSTAIN is a complete lifestyle experience. Bringing all people interested in various aspects of sustainability together.

A cooking school, gardening, beauty, health & craft workshops and a wellbeing centre for yoga, meditation and fitness classes will give visitors the chance to learn, connect and have fun.

Seminars, forums and panel discussions will give the community a platform to share and debate what's important now and for the future.

The latest sustainable Technology, Careers & Everyday Life choices will be on show.

Plus the Business 2 Business Lounge will make sourcing those all important services easy.

SUSTAIN will be held at the Royal Hall of Industries, Moore Park, Sydney. This new location is readily accessible by public transport, but also offers cheaper and more parking spaces.

Find out more about this exciting show at the Sustain website: www.organicexpo.com.au/

Research, publications and reviews

Review compares organic and conventional farm yields

A recent review in Nature of relative yield performance of organic and conventional farming systems globally shows that organic yields are typically lower than conventional yields, but depend on system and site characteristics. They range from 5% lower organic yields in rain-fed legumes and perennials on weak-acidic to weak-alkaline soils, 13% lower yields when best organic practices are used, to 34% lower yields when the conventional and organic systems are most comparable. Under certain conditions - that is, with good management practices, particular crop types and growing conditions - organic systems can thus nearly match conventional yields.

The review acknowledged that there are many factors to consider in balancing the benefits of organic and conventional agriculture. Yields are only part of a range of economic, social and environmental factors that should be considered when gauging the benefits of different farming systems. There are no simple ways to determine a clear 'winner' for all possible farming situations. However, instead of continuing the ideologically charged 'organic versus conventional' debate; there should be a systematic evaluation of the costs and benefits of different management options.

The review concludes that in order to achieve sustainable food security there is probably a need

for many different techniques - including organic, conventional, and possible 'hybrid' systems - to produce more food at affordable prices, ensure livelihoods for farmers, and reduce the environmental costs of agriculture.

Source:

www.nature.com/nature/journal/vaop/ncurrent/full/nature11069.html

Cover crops and weed suppression in vineyards

Abstract: The mid-row area accounts for about 70% of the vineyard floor, and weed management is the principal reason for activities on this area. Many growers have now changed their thinking about 'volunteer' plants growing in the mid-row, from being weeds requiring control to plants providing low-cost soil cover. Cover cropping is also widely practiced, utilising a wide range of native or exotic species to provide particular benefits such as weed or nematode suppression, biological nitrogen, high or low water use, and beneficial insect habitat.

The capacity for cover crops to compete with weeds varies considerably between species. Cereals, especially barley, and to lesser degrees wheat, triticale, rye and oats, are strong competitors. Fodder turnip also displays strong early growth to compete with weeds. Dense stands of medics and sub-clovers generate large amounts of spring biomass, and will compete strongly, particularly in nitrogen deficient soil. Perennial ryegrass and medics/sub-clover are also a very compatible mix for weed control.

Once established, native species such as perennial prostrate saltbush (*Atriplex semibaccata*) and wallaby grass (*Austrodanthonia richardsonii*) are also very strong competitors.

Saltbush is very suitable for use as a mid-row



Above: Sorghum growing undervine during winter suppresses the growth of other plants. (Photo courtesy Joch Bosworth)

planting in the dry inland regions where it provides habitat for beneficial insects and suppresses the growth of caltrop (*Tribulus terrestris*). Wallaby grass is well suited to the 300-500mm rainfall zone and effectively suppressed the growth of caltrop and wireweed (*Polygonum* spp.).

Source: [Chris Penfold and Cassandra Collins (2012). Cover crops and weed suppression. GWRDC Fact Sheet June 2012: University of Adelaide]. *The Weeds News – Digest*, June 4 2012. <http://invasivespecies.org.au/traction/permalink/WeedsNews3396>

For full text see:
www.gwrdc.com.au/webdata/resources/factSheet/Cover_crops_and_weed_suppression.pdf

Comparing global warming potential, energy use and land use of organic, conventional and integrated winter wheat production

Abstract: To ensure a sustainable food supply for the growing population, the challenge is to find agricultural systems that can meet production requirements within environmental constraints and demands. This study compared the impacts of winter wheat production on energy use, land use and 100years Global Warming Potential (GWP100) under different arable farming systems and farming practices. Life cycle assessment was used to simulate the impacts of organic, conventional and integrated farming (IF) systems along the production chain from input production up to the farm gate. The IF system models were designed to combine the best practices from organic and conventional systems to reduce negative environmental impacts without significant yield reductions. An integrated system that used food waste digestate as a fertiliser, and utilised pesticides and no-tillage had the lowest energy use and GWP per functional unit of 1000kg wheat output. When the impacts of some specific practices for reducing energy use and GWP were compared, the highest energy use reductions were achieved by replacing synthetic nitrogen fertilisers with anaerobically treated food waste or nitrogen fixing crops, increasing yields through crop breeding and using no-tillage instead of ploughing. The highest GWP reductions were achieved by using nitrification inhibitors, replacing synthetic nitrogen fertilisers and increasing yields.

The major contributors to the uncertainty range of energy use were associated with machinery fuel use and the assumed crop yields. For GWP results, the main source of uncertainty related to the N₂O emissions.

In conclusion, farming systems that combine the best practices from organic and conventional systems have potential to reduce negative environmental impacts while maintaining yield levels. [Tuomisto, H.L., Hodge, I.D., Riordan, P. and Macdonald, D.W. (2012). Comparing global

warming potential, energy use and land use of organic, conventional and integrated winter wheat production. *Annals of Applied Biology*, online 21 May 2012. doi: 10.1111/j.1744-7348.2012.00555.x]

Source: *The Weeds News – Digest*, June 4 2012. <http://invasivespecies.org.au/traction/permalink/WeedsNews3396>

For full text see:
<http://onlinelibrary.wiley.com/doi/10.1111/j.1744-7348.2012.00555.x/pdf>

New revised composts, soil conditioners and mulches Standard

The new revised Standard AS 4454 for composts, soil conditioners and mulches includes proposes minimum requirements for products labelled as a composted or pasteurised product. It also proposes physical and chemical requirements and documentation that includes information to be supplied to the consumer and health warnings. Guidance is given on best practice for composting and vermicast systems designed to produce a quality product achieved by following an approved process. See:
<http://infostore.saiglobal.com/store/Details.aspx?ProductID=1512286>

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