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Organic News.

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Inside this Issue

Quantifying the Benefits of Recycled Organics in Agriculture

Australian agricultural soils are generally low in soil chemical and physical fertility and have traditionally relied on inorganic fertiliser inputs to sustain production. Agricultural production systems have evolved whereby nutrients are typically imported into agricultural catchments and the outputs are exported from them. This has resulted in a one way flow of resources to overseas or metropolitan markets, which act as nutrient sinks.

Metropolitan areas generate significant quantities of organic material, which often end up in landfills. Many landfills are approaching capacity, with limited opportunities to establish new ones within close proximity to metropolitan areas, because of community resistance and/ or physical limitations of sites.

Consequently, increasing emphasis is being placed on beneficially reusing the resources contained in garden organics generated in metropolitan areas. An example of this is collecting and composting grass clippings, leaves and prunings from residential areas to produce mulches and soil conditioners for use in urban and agricultural areas. The nutrients and organic matter in these "recycled organics" have the potential to improve plant growth, soil structure and water holding capacity, as well as suppress weeds and diseases.

The NSW Department of Primary Industries, in conjunction with the NSW Department of Environment and Conservation, recently commenced a four year project aimed at quantifying the benefits of recycled organics in agricultural and horticultural cropping systems. The objective of the first stage of the project is to identify potential markets for recycled organics by analysing information on soil carbon status, climatic data and production statistics, such as the areas, quantities, yields and gross margins, of different cropping systems in New South Wales.

Organic agriculture is one market segment which is being evaluated. Recycled garden organics could fit in well with organic agricultural production systems because they have potential to improve soil physical, chemical and biological fertility, and could be used as a substitute for inputs used in conventional farming systems. The use of recycled organics in organic farming systems is also consistent with the philosophy of using resources in a more sustainable manner.

As part of the project, we are keen to talk to organic farmers to find out more about organic production systems and understand industry perceptions of recycled organics.

NSW DEPARTMENT OF PRIMARY INDUSTRIES

Please direct correspondence to:

Robyn Neeson
NSW Department of Primary Industries
Yanco Agricultural Institute
Yanco NSW 2703

Left: Grass clippings, leaves, branches and garden cuttings collected from municipal areas (above), are composted to produce mulches and soil conditioners for use in urban and agricultural areas (bottom).

The outcomes of the first stage of the project will be used as the basis for establishing field trials at a site in the cropping system with the greatest potential to respond to recycled organics, and at NSW DPI's Centre for Recycled Organics in Agriculture (CROA), Camden. These experiments will quantify the impact of recycled organics on soil organic matter, infiltration, water holding capacity, nutrient status, as well as soil biological health. These results will be used to perform a cost/benefit analysis on the use of recycled organics in the agricultural systems studied. Workshops and field days are also planned during the project to promote the benefits of using recycled organics to farmers and their advisors. These will be promoted in future editions of "Organic News".

For further information on recycled organics or the project, please contact Yin Chan, NSW DPI, Locked Bag 4 Richmond NSW 2753; Phone: (02) 4588 2108, Email: yin.chan@agric.nsw.gov.au or Chris Dorahy; Phone: (02) 4588 2134; Email: chris.dorahy@agric.nsw.gov.au.

Flame weed control - *a chemical free alternative*

Flame weed control is a form of weed management becoming increasingly popular amongst Australian organic farmers. This article by flame weeder manufacturer, Gameco Pty. Ltd's, Tony Atkinson, describes the basic principles behind flame weeding and some of its applications.

The principle of Flaming is to apply a hot and intense flame for a short period of time in a staggered cross fire pattern across the base of the crop. This method allows for control of weeds and insects within the plant line as well as the furrows.

Flaming can be used prior to planting, pre-emergent, post emergent until the plant is 75-100 mm high (not recommended for cotton until at least 100 mm high) and then again after the plant is 300-400 mm high with out damage to the crop.

Ideally, flaming should be used as a pre-emergent weed control once the ground has been prepared and the seed planted. It should be used again a day or two prior to the plant emerging and then on an as needed basis.

Under tree flame weeding in an orchard

Flaming is ideally undertaken at a speed of 3 to 6 miles per hour depending on the size and density of weeds. This speed allows a dwell time sufficient for the flame to be applied to the weeds successfully.

A 'thumb print' indicates a good kill of the weed

The short burst of intense heat causes the moisture in the plants leaf to boil and the expansion of the boiling moisture causes the cells to burst. This results in a breakdown of the photosynthesis of the plant causing it to die back to and including the roots. Occasionally, there can be some stress caused to the crop but generally, it will recover in a very short period of time.

Smaller, more tender plants are much more susceptible to heat than mature growth, therefore the crop should be larger than the weeds or grass to be controlled.

Again, the principle of flaming is to raise the temperature of the plant to cause the moisture within it to boil and injure the cells. Not to burn the weeds or grasses to a crisp or incinerate them. The amount of time in which a flame must be in contact with the weed or grass will vary with the type and size of the plant but in most cases, 1/10 of a second is adequate.

Some plants are more resistant to a blast of heat than others so for this reason, speed and burner pressure must be varied to suit the application.

Flaming applications

Channel banks and supply ditches

The advantages of flaming for irrigation channels naturally, is the speed of application, the speed of seeing the results and **NO CHEMICAL RUN OFF** into the waterways or water table.

Flaming for irrigation channel banks and supply ditches is carried out by a different LP Gas Burner set up to that used for row crop flaming. A single liquid vaporising burner incorporating a high pressure liquid LP

Gas spray is used to give a flame that can be up to 2 metres wide by approximately 4 metres long. This type of apparatus can be used at approximately 10 to 15 miles an hour. This equipment can be boom mounted with remote (at the operators finger tips) mounted controls to get the job done quickly and efficiently. Crop application is slower due to the different type of equipment used which is due to the nature of the weeds being in amongst the actual crop itself.

Tea Tree

One of the greatest problems with tea tree cultivation appears to be the grass within the plant line. The control can be simplified with the use of flame as opposed to chemicals with the advantages of faster, cleaner re-growth of the plant.

A pre-emergent flaming trial in tea tree has shown that around five chemical applications for weeds and insects can be replaced. Flaming also killed Pyrgo beetles and destroyed their eggs.The tea tree wasn't harmed by the naked flame and actually, being an Australian native, thrived on the scorching.

A channel bank in northern NSW a day after it was flamed

Flamed and un-flamed tea tree a month after flaming

Tea tree re-growth approximately one month after harvesting and flaming

Vineyards

Vineyards in the USA have been the most recent converts to Flame Cultivation using the Flame Engineering Inc., 'Grapevine Berm Flamer'. Applications include under vine weed control and canopy management.

Local Government

Many local Government councils and Shires have discovered the advantages of flame weed control and are now regularly using hand flamers. So much so that one south eastern Queensland shire has set-up a trailer equipped with gas cylinders and safety equipment to make the use of this equipment an 'everyday' thing.

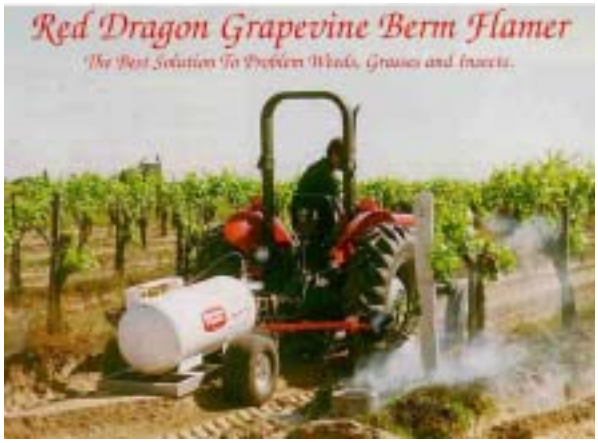
Row cropping

An organic farmer in north western NSW approached Gameco to build him a row crop flamer with an attachment for flaming his irrigation channels and row heads. At this stage he was growing soybeans and having trouble in controlling weeds on the property.

The farmer manufactured the basic tool bar and attachments to his design with input from Gameco staff and it was fitted up to supply LP Gas in its *LIQUID* state to the burners for vaporisation.

Commissioning of the equipment took place on the property at around the time the soybean seed was germinating and about to come out of the ground. Whilst the farmer was concerned at the possible damage to his crop from the naked flame, it was proven that no injury whatsoever was caused by the 'flame cultivation'.

A process used in grapevines the USA, known as "Southside" flaming, allows the sunlight in, increasing sugars & tannins in fruit and permits easier picking.



Grapevine Berm Flamer in use in the USA

Combination applications

Gameco developed a 'Flamer-Sprayer' to be used in trials involving an organically certified chemical substitute (Interceptor®). The purpose of the trials was to ascertain a speed, gas-pressure & Interceptor® dilution rate that gave the best and most cost effective application. The trials were carried out at a western Sydney university under the control of a specialist horticultural research company.

As with basic flaming, the results could be seen almost immediately. However, a number of problems were highlighted during the trial. It was most difficult to be able to operate the implement at the ideal time for weed growth due to "total fire bans" covering the State at the height of summer during the worst drought in 100 years. Another issue in operating this type of flamer is the fact that in following the flame with a spray, you actually extinguish any 'spot' fire that may be left behind. The evaluation of the trials are ongoing but positive results of 'cost effective' treatments are being recorded.

Types of flamers

Types of 'Thermal' weed control include direct flame, hot air and steam. Various equipment has been developed both here and abroad but both performance wise and, dollar for dollar, it is certainly hard to beat direct flame technology. Pictures below show of range of flaming equipment and their applications.

For more details on flame weeding, equipment and applications contact Tony Atkinson, Gameco NSW Pty. Ltd. at: salesnsw@gameco.com.au *Website:* www.gameco.com.au

For flaming between rows of emerged crops, accuracy and the safe use of equipment is essential. Some considerations include:

- Burner height and angle (both vertical and horizontal) should be carefully adjusted and fuel pressure, tractor speed and regulator setting checked frequently.

- Young crops should be carefully checked for flame damage to stems buds or leaves.

- Flaming should be restricted to calm conditions and attention paid to speed and direction of any air movement.

- Burners should be adjusted to a pilot setting when turning at the end of rows.

- Burner nozzles should be cleaned out each year to remove carbon and rust that can flake off the inside of the steel pipe that leads to the burners. A bluish centre flame should be visible during peak operation.

- Operators will need to become familiar with, and practice, the safety rules for proper inspection, filling, and use of propane tanks and equipment.

- It is advisable to gain approval from local fire authorities before flaming and don't flame during a Total Fire Ban.

News, Publications, Commentaries and Events

Organic farmer named as NSW Farmer of the Year

Garry Hannigan, an organic pastoralist from Broken Hill, has been named NSW Farmer of the Year during the NSW Farmer's Association annual awards dinner held in Sydney on July 21. Garry was awarded $10,000 in prizemoney for his achievement in the inaugural NSW Farmer of the Year Competitiion.

The award recoginises Garry's achievements in successfully combining sustainability with profitability on his families' 48,600 hectare certified organic property, "Churinga Station". The diverse grazing operation involves managing 3,000 Merino ewes, 2,000 Demara / Wiltshire cross ewes, bush goats, and a small beef herd.

Garry is also involved in a West 2000 pilot conservation project aimed at the regeneration of grazing country in the Western Division. Garry is amongst an increasing number of farmers in the Western Division to seek and gain organic certification for their operations.

NASAA to host 15th IFOAM Organic World Congress in Adelaide in September 2005

With the theme of 'Shaping Sustainable Systems', the Conference will shape, through debate and discussion, the important role that organic systems play in ensuring long term sustainability. Through a series of plenary sessions, lectures, and workshops, the issue of 'sustainability', which is at the heart of organic agriculture, will be revisited, rethought and recaptured; and with consideration to broader social and policy issues of community, gender and social justice. In placing the spotlight on the host nation, there will also be a particular focus on the unique Australian organic systems of permaculture, and rangeland systems management.

In what is shaping up to be a substantial program, the Congress will include the International Scientific Conference on Organic Agriculture (in co-operation with ISOFAR) and the 8th International IFOAM Organic Viticulture and Wine conference. Accompanying events will include pre and post Congress tours, The Organic Exhibition, and International Organic Fair and Festival (open to the general public).

"The 15th IFOAM Organic World Congress will showcase the depth and breadth of organic agriculture worldwide. It will provide a greater focus for the Australian Organic Industry, and will highlight the potential, and growth opportunities, the industry has to become a major supplier to the international community" says Jan Denham, Congress Coordinator.

"In hosting this major international event, the Australian organic industry has the unique opportunity to demonstrate to our politicians, regulators and the conventional agriculture sector, the practices, benefits, and opportunities organic systems can provide in substantiating Australia's "clean green" image", she says.

"It is our opportunity to demonstrate the leading role organic systems can play in addressing and supporting sustainable solutions in agriculture."

Industry Call for Papers

Get active and get involved!

The Congress organisers are now inviting submissions from individuals/groups worldwide, to take an active role in the shaping of the Congress program.

Topics to be covered at the Congress include crop production, food processing, animal husbandry, farming systems, water, regulatory systems, market development, education, community and eco-tourism. Topics to be covered as part of the Scientific Conference relate to research in plant and animal production, processing, food quality and health; quality systems in research, and methodologies; socio-economic trends and more!

For further information about the Congress, and Guidelines to make a sumision, visit the IFOAM Congress website at www.nasaa.com.au Submissions close 15th December, 2004. Or contact:

Jan Denham
2005 Organic World Congress Coordinator
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News, Publications, Commentaries and Events

Join us on an Organic Beef and Lamb Adventure: "The whole story"
Bus Tour, September 1st-2nd, 2004

NSW DEPARTMENT OF PRIMARY INDUSTRIES

The Program:

Wednesday September 1st

- 8.30am – Visit Keith and Linda Cox's property, Uranquinty
- 1.00pm – Bush's Abattoir Yanco
- 3.00pm – Visit Andrew Steiner's property, Uranquinty
- Stay overnight in Narrandera and have a great organic dinner

Thursday September 2nd

- 8.00am – Visit Alan and Jesse Druce's organic property at Kamarah, inspect their Dorper sheep flock.
- 10.00am - Visit David and Mary Booth's organic property at Bethungra
- 2.00pm - Visit Griffith Butchery and retail outlets in Canberra
- Return Home.

Griffith Butchery – an organic meat outlet in Canberra supplying the large organic market in the area.

Bush's Abattoir, Yanco – an organically certified abattoir that supplies to many markets including Cleavers Meats. Will discuss Meat Standards Australia (MSA) grading.

Organic beef and lamb properties – How is organic livestock production achieved in practice?
- understand the organic certification process;
- breeding and raising an organic herd,
- marketing and transport requirements,
- understand live animal assessment (fat scoring, muscle scoring, frame scoring etc.).

Tour Dinner: Enjoy a fantastic organic dinner at a Narrandera restaurant with a guest speaker from organic meat wholesaler Cleavers Organic Meats.

Cost: $90 - includes bus and organic dinner

Registration and further details:
Please contact Michael Campbell, Livestock Officer (Beef Products), DPI Tumut
(02) 6947 4188, michael.campbell@agric.nsw.gov.au

Please note: Registration closes Wednesday 25th August, 2004.

Transport: Two buses will run if required. One will leave from Tumut and the other from Yanco. Should you want to pick up the tour along the way then please let us know.

Accommodation: Please book your own overnight accommodation in Narrandera for Wednesday 1st September. Below is a listing of several motels:

All Transit Motel	Single $55	Double $65	Ph: 02 6959 1155
Camellia Motel	Single $55	Double $65	Ph: 02 6959 2633
Country Roads Motel	Single $70	Double $74	Ph: 02 6959 3244
Fig Tree Motel	Single $58-68	Double $63-73	Ph: 02 6959 1888
Narrandera Gateway Motor Inn	Single $50-60	Double $55-70	Ph: 02 6959 1877
Midtown Motor Inn	Single $70	Double $80	Ph: 02 6959 2122
Narrandera Club Motor Inn	Single $89	Double $94.50	Ph: 02 6959 3123
Newell Motor Inn	Single $55	Double $59	Ph: 02 6959 2877

News, Publications, Commentaries and Events

"Sustainability: Principles into Practices"
EcoSTEPS one-day workshop in Sydney on August 10, 2004.

EcoSTEPS is now offering this comprehensive one-day course to share its sustainability knowledge and framework. The course builds on developing the organisation-specific business case. It gives you insights and tools to make a practical difference to your organisation - save money, make money, help the planet and its occupants! 'Principles into Practice' will give you the 'what', 'why' and 'how' of sustainability:

- Identify the business drivers and dimensions of sustainability;
- Give you a comprehensive organisational framework for sustainability;
- Assist you to put your sustainability strategy into action;
- Introduce you to four practical sustainability tools;
- Be interactive, lively and challenging

To find out more about the Principles into Practices download the course Brochure and Enrolment Form Visit Ecosteps website www.ecosteps.com.au or contact Julian Crawford on (02) 4757 2700 or juliancrawford@ecosteps.com.au if you would like any further information.

NSW DPI Publications

NSW Agriculture and environmental education. Agnote DPI-466. Agnote by Environmental Extension Specialist, Rebecca Lines Kelly, describing NSW DPI's role in environmental education, including extension, internal and external training courses.

Turning the Worm Newsletter. A monthly E-newsletter edited by NSW DPI's Dr. Stephen Love Veterinarian & State Worm Control Coordinator. Discusses various aspects of internal parasite management in livestock. http://www.agric.nsw.gov.au/reader/6359

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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