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NSW DEPARTMENT OF
PRIMARY INDUSTRIES

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The challenges of organic soybean production in the Riverina

This paper was recently presented to the 13th Australian Soybean Conference at Barooga in southern NSW.

Introduction

Market demand, price premiums and farming system rotation benefits have encouraged some Riverina organic producers to include soybeans in their farming systems. Demand is for quality, white hilum beans for domestic and export processing markets (soymilk, tofu, soy sauce and soy flour).

However organic soybean production is not without its challenges. A producer workshop coordinated by NSW DPI, Vitasoy and RIRDC in 2002 heard that crop nutrition and insect pest management, were the key production constraints limiting expansion of the Riverina organic soybean industry (Scammell, G. 2002).

The crop yields of organic soybeans in the Riverina range from two to two and a half tonnes per Ha, whilst conventional crops average around three to four tonnes per Ha. Green Vegetable Bug (*Nezara viridula*) and *Helicoverpa* sp were identified as the biggest impediments to the Riverina organic soybean industry, with producers reporting significant yield losses, and seed graders and processors reporting considerable impact on seed quality, with grade-outs of around 10% attributed to these pests.

Pest management identified as the greatest challenge at Yanco

During 2000-2003, NSW Department of Primary Industries assessed organic soybean production at Yanco Agricultural Institute's Organic Demonstration site. Agronomic management, cultural practices, trap cropping, screening of habitat species, applications of organically acceptable pesticides, and release of biological control agents, are some of the techniques that were investigated. It was quickly determined that the main impediment to successful organic soybean production was finding effective control options for Green Vegetable Bug (*Nezara viridula*).

Green Vegetable Bug (GVB) is a significant pest of a range of crops including tomatoes, sweet corn, fruit and most pulses. Indications are that crop damage due to GVB is increasing in the southern irrigated cropping districts. One reason cited for this has been the transition away from broad-spectrum pesticides (such as endosulfan) to more selective pesticides (such as the nucleopolyhedrosis virus (NPV) pesticide, Gemstar®).

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Whilst this strategy has been effective against target species (in this case *Helicoverpa* sp.), non-target species, such as GVB, have proliferated.

Strategies to manage soybean pests organically

Crop monitoring. Regular monitoring of crops for pest and predatory species is critical in achieving optimum yield and quality. At Yanco, crops were monitored for seasonal nutrient deficiencies using leaf petiole analysis and these compared with regular refractometer (Brix) readings (a technique frequently used by organic farmers to indicate plant stress). Foliar spray applications were made during crop growth, primarily in response to signs of plant stress and to prevent insect attack. Foliar sprays consisted of various combinations of fish emulsion, worm liquid, seaweed liquid, molasses, sugar and microbial preparations.

Methods used to monitor predator and pest species were yellow sticky traps, sentinel cards and a 'Bugvac®' (a reversed leaf blower). Soybeans were monitored using sentinel cards to determine the relationship between GVB distribution and the distance from the edge of the crop in all directions. The acceptable threshold for GVB in soybeans for human consumption (such as the organic processing market) is 0.33 bugs /m² at early pod-fill (NSW DPI, 2004). Results at Yanco showed that concentrations of GVB were greatest on field borders.



Above: Adult green vegetable bug (*Nezara viridula*) and egg raft. A sucking bug, GVB can cause significant damage to soybean seed quality (below). Few organic management options are available.



Above and below: *Helicoverpa* spp. may cause significant yield losses in soybeans. Organic management can be achieved using a range of options.



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Left: French marigold insectary border adjacent to organic soybeans at Yanco Organic Demonstration Site, 2002

Conservation biological control. Conservation biological control employs habitat manipulation of non-crop (insectary) species within the agroecosystem to provide resources for natural enemies (predators and parasitoids). Insectary and trap crops have been used in a range of permanent cropping situations and also within organic gardening, however relatively

little work has been done on species suitable as insectaries in Australia and less in row cropping situations.

The concept of encouraging beneficial insects with flowering (insectary) plants is based on the requirement for many adult predatory and parasitic insects to feed on nectar and/or pollen. It is the larvae of these beneficial insects that are the primary feeding stage on other insects. Flowering borders can increase the diversity of habitats and provide shelter and alternative food sources for natural enemies and can significantly increase the residency times and thus enhance the efficacy of predators and parasitoids.

Some insectary species were selected for testing at Yanco. Following monitoring for pest and predator incidence these were given ratings for their insectary potential (Table 1). French marigold, green ruffle basil and white clover showed good potential, and whilst yarrow also showed good potential, there was some question regarding its likely weed status.

There are many examples of the use of biological control for GVB throughout the world and a comprehensive coverage of these is given in Waterhouse (1998). Research undertaken by Rahat et al at Yanco during the summer of 2001/2002 investigated the scope for improving the impact of *Trissolcus basalis* (Wollaston) (Hymenoptera: Scelionidae), on *N. viridula* by use of conservation biological control. Though levels of control are good in some crop systems, the impact of *T. basalis* in Australia is not always adequate (Clarke, 1990) especially in areas where soybeans are planted extensively (Waterhouse, 1998). The Yanco study focused on adult *T. basalis* longevity and aimed to determine whether nectar from a range of plant species befitted this parasitoid, and if their use in field margin or within-crop strips offers scope to increase longevity of *T. basalis*, and hence improve parasitism of GVB.

Plants of alyssum (*Lobularia maritima* L.), canola (*Brassica napus* L.), French marigold (*Tagetes patula* L.), basil (*Ocimum basilicum* L.), buckwheat (*Fagopyrum esculentum* Moench), cosmos (*Cosmos bipennatus* Cav.), calendula (*Calendula arvensis* L.), coriander (*Coriandrum sativum* L.), nasturtium (*Tropaeolum majus* L.) and phacelia (*Phacelia tanacetifolia* Benth) were grown in a glasshouse and as they began to flower were used in bioassays to determine if their flowering increased *T. basalis* longevity.

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Table 1. Species screened as potential insectary plants at NSW DPI's Organic Demonstration Farm, Yanco. Source: S. McDougall, 2000 NSW DPI.

Insectary Plant	Scientific name	Flowering	Potential
Azerbaijan basil	<i>Ocimum basilicum</i>	summer	Moderate
borage	<i>Borago officinalis</i>	spring-summer long flowering	
Moderate calendula	<i>Calendula arvensis</i>	spring-summer long flowering	
Moderate cosmos*	<i>Cosmos bipinnatus</i>	summer - long flowering	Moderate
cow pea*	<i>Vigna unguiculata</i>	late summer -short flowering	
Moderate fennel	<i>Foeniculum vulgare</i>	autumn	Moderate (<i>weed potential</i>)
feverfew	<i>Chrysanthemum parthenium</i>		autumn
Moderate French marigold	<i>Tagetes patula</i>	summer - long flowering	Good
grain amaranth*	<i>Amaranthus spp.</i>	summer	Moderate (<i>weed potential</i>)
green ruffle basil	<i>Ocimum basilicum</i>	summer - long flowering	Good
leaf amaranth*	<i>Amaranthus spp.</i>	late summer	Moderate (<i>weed potential</i>)
Mexican sunflower*		<i>Tithonia rotundifolia</i>	summer
Moderate parsley	<i>Petroselinum crispum</i>		Moderate
pigweed	<i>Portulaca oleracea</i>		Poor
Pineapple sage	<i>Salvia officinalis</i>	autumn	Poor – frost sensitive
sorghum*	<i>Sorghum bicolor</i>	autumn	Poor
strawberry clover	<i>Trifolium fragiferum</i>	autumn	Moderate
Thai basil	<i>Ocimum basilicum</i>	summer - long flowering	Moderate
white clover	<i>Trifolium repens</i>	autumn	Good
wormwood	<i>Artemisia absinthium</i>	late summer	Moderate
yarrow*	<i>Achillea millefolium</i>	summer	Good (<i>weed potential</i>)

* species also intercropped with mixture of clovers and buckwheat, intercropped plants tended to have higher bugsucker pred/prey ratios and lower sticky trap pest numbers.

Results showed that longevity of *T. basalis* on flowering French marigold, basil, buckwheat and cosmos was greater than other species, whilst longevity on inflorescence-free shoots of French marigold, phacelia, cosmos and basil was significantly ($P < 0.001$) greater than on equivalent non-flowering shoots of other species (Figure 1). Further research is required to determine if these findings can be transposed into the field.

Trap cropping. Another method of pest management is the planting of 'trap' or 'catch' crops in strips adjacent to the main crop. Trap crops, due to their 'preferred host' status, attract the pest away from the main crop, where the pest is then allowed to develop to their peak and is then destroyed. In a demonstration at Yanco, pigeon peas were found to be an excellent trap crop for *Helicoverpa* sp. whilst sunflowers were particularly attractive to GVB.

Parasitoid / predator augmentation. Commercially reared, *Trichogramma* (a predatory wasp) parasitised *Helicoverpa* eggs, were released at Yanco to control *Helicoverpa* sp and loopers. This is an expensive operation (\$100/ha) and so is generally only used on highly productive irrigated soybeans where yields are expected to reach 3-4 tonne/Ha.

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Organically acceptable pesticides. Products permitted for use in organic farming are assessed against criteria which are set out in national organic standards. Organically acceptable bio-pesticides include pesticides derived from natural materials such as microorganisms (bacteria, viruses, fungi and protozoa), nematodes and certain minerals. Some are derived from plants, including *Tanacetum cinerariaefolium* (the source of pyrethrum), *Derris elliptica* (the source of rotenone), and *Azadirachta indica* (the source of neem). Products developed using recombinant DNA (rDNA) (GMO) technology or through exposure to ionising radiation are not permitted for use in organic systems.

Laboratory assays conducted at Yanco evaluated the effectiveness of Natural Pyrethrum Concentrate® (Pestech Australia Pty Ltd) on the mortality of GVB. At the recommended rate of 1ml per litre this product gave inadequate control (41% mortality) of GVB under laboratory conditions. Doubling the rate (to 2 ml per litre) produced 81% mortality after 24 hours. The relative ineffectiveness of these laboratory results suggests that further field evaluation is unjustified.

In another demonstration, the neem product AzaMax®¹ (Organic Crop Protectants, (OCP)) was applied by two different methods. Applied as a crop foliar spray (at 2.5 L/Ha) AzaMax® had little visual impact on GVB mortality. OCP suggested that the product may lose its efficacy within a number of months following manufacture, suggesting that a repeat evaluation of the effectiveness of fresh AzaMax® is required. On another occasion AzaMax® was applied as a soil drench via drip irrigation. Following application, a mass migration of GVB from the crop was observed. It was inconclusive whether this was an antifeedant response, or purely a coincidental migratory response, however, it was an interesting



Figure 1. Mean (n = 4) longevity of adult *Trissolcus basalis* females in laboratory flight cages with excised plant shoots bearing inflorescences (solid columns) or from which inflorescences had been removed (clear columns) (error bars = LSD 5%). (Source: Rahat, S. et al 2005)

phenomenon that is worthwhile revisiting. It must be emphasised that neither product is registered for use in soybeans.

Observations on the effectiveness of bio-pesticides made at Yanco are consistent with those made in trials conducted on GVB (in sweet corn) at New Zealand's Lincoln University organic site, the trial results confirming that there are few (if any) pesticides (including 'conventional' pesticides) that provide effective control against GVB (Dr. Steven Wratten, pers. com. 2002).

1Note that AzaMax® is not registered for the control of *N. viridula* in soybeans

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Future research

Due to increasing biodiversity and reduced chemical usage, organic farms have a greater number and diversity of predatory insects. Beneficial insects (predators and some parasitoids) which commonly occur in soybean crops include *Braconid* wasps, predatory shield bugs (*Cermatulus nasalis*), spined predatory shield bugs (*Oechalia schellenbergii*), damsel bugs (*Nabis kinbergii*), orange caterpillar parasite (*Netelia producta*), ladybird beetles, soldier beetles (*Chauliognathus lugubris*), and pollen beetles (*Dicranolaius bellulus*). More research is needed to design agroecosystems which favour the presence and persistence of these beneficials and which deter pests from the main crop.

Work at Yanco showed that by integrating a combination of cultural practices such as pupae busting and trap cropping, augmentative releases of parasitoids, the planting of insectary borders to enhance and conserve natural predators, combined with strategic applications of bio-pesticides (such as nucleopolyhedrosis virus (NPV) and *Bacillus thuringiensis* (Bt)), *Helicoverpa* sp. populations in soybeans can be reduced to an economically acceptable threshold.

Whilst work at Yanco failed to identify a satisfactory integrated management program for the control of GVB, it has highlighted a number of areas where future research efforts should be targeted. Results at Yanco suggests that GVB prefers feeding on crop edges and that certain plant species, if planted on borders, could act as a nectar source thus enhancing the parasitism of beneficials such as *Trissolcus basalis*. Furthermore, planting a strip of a preferred host plant (e.g., early maturing soybean, sunflowers) immediately adjacent to nectar sources would expose a high proportion of the pest population to well-nourished natural enemies causing potentially higher rates of mortality. Further field experiments to test these hypotheses are warranted.

Organisms known to cause GVB mortality include the entomopathogenic fungi, *Beauveria bassiana* (Bals.), *Metarhizium anisopliae* (Metsch.) and *Paecilomyces lilacinus* (Thom.). Commercial bio-pesticide formulations of *B. bassiana* are currently registered in the United States as Mycotrol ES® (Mycotech, Butte) and Naturalis L® (Troy Biosciences). Researchers at Queensland DPI's Biopesticides Unit at Indooroopilly have been comparing the effectiveness of these products and a collection of native isolates taken from GVB. Initial bioassays with one isolate achieved an 80% mortality of 1st instar GVB within 3 days and 100% mortality within 7 days. (Knight et al., 2003). Further field evaluation of these products, particularly in southern soybean cropping districts is required to ascertain their efficacy.

Conclusion

Demonstration plantings of organic soybeans at NSW DPI's Organic Site at Yanco from 2000-2003 confirmed that the greatest challenge for organic soybean production is pest management. Yanco trials showed that a combination of cultural and conservation biological control and with strategic bio-pesticide application can provide adequate control of species such as *Helicoverpa* sp, however more research is required to develop an integrated program to successfully control *Nezara viridula*. There are few effective organically acceptable pesticides available to control this pest and limited research has been undertaken into increasing the effectiveness of its natural predators and other cultural methods of pest management, particularly in southern cropping districts.

Acknowledgements

The extensive work of Tobias Koenig, formerly Technical Officer with NSW DPI, in managing these trials is gratefully acknowledged.

Organic Crop Protectants and Pestech for supply of products evaluated in these trials.

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Organic PROGRAZE: a first for Mid North Coast producers

Mid North Coast organic beef producers have recently joined forces to enhance the production and marketing of high quality organic beef products from the region.

Twenty producers have come together as an organic livestock production network.

Ms Lyndell Stone from the Mid North Coast Regional Development Board said the network of producers was taking part in a targeted industry development program, which assisted the uptake of training, information sharing and innovative marketing techniques.

“This approach is already proving valuable as it has enabled NSW Department of Primary Industries (DPI) to adapt its current grazing management program PROGRAZE to meet the needs of the region’s organic producers,” Ms Stone said.

The result is the first ORGANIC PROGRAZE program in NSW run by Carol Rose and Mac Elliot from NSW DPI’s Kempsey and Taree offices with help from Robyn Neeson, NSW DPI, Yanco.

Ms Stone said the response to ORGANIC PROGRAZE had been very strong.

The first group of 20 Mid North Coast producers started the program in December last year and are due to finish the eight sessions in about August this year. Plus there is already a list of names lined up for a second program.

The practical course covers all aspect of smart organic beef production, pasture management and scheduling, soil and animal health and meat quality.

“This opportunity to improve production efficiency and raise production levels through clever pasture management has captured the attention of the region’s organic farmers as has the burgeoning market demand for organic produce from areas north and south of the region,” Ms Stone said.

“The Mid North Coast is ideally suited. It’s on a major highway between two major cities which have a cavernous demand for organic food.”

The developments in the Mid North Coast organic livestock industry is mirrored in three other regional commodity groups where similar networks have been established by Organic Vegetable, Organic Garlic and Organic Fruit and Nut Producers.

Each group has an active schedule of farm visits, information sharing and market investigations to support industry growth.

“The face of agriculture is definitely changing on the Mid North Coast,” Ms Stone said.

“The region is attracting new landholders. These landholders have different skills, which often include considerable off-farm careers in business, marketing, hospitality and so forth, making a perfect match with a customer-focussed approach to agriculture. Our challenge is to find a way to assist the growth of these new farmers and support the further development of existing farm enterprises.

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“The recently established organic producer networks are melding together traditional and new farmers in groups that are intent on creating agricultural businesses that produce new products and flavours, often at higher level of intensity. This approach is proving popular and a range of relationships are developing between members. This includes both mentoring and commercial relationship as the groups work together to investigate efficient and profitable ways to get their products to market.

“The group’s are focussed on improving their ability to meet larger orders, sharing production and marketing tips and accessing other support services such as certified processing infrastructure. Developing critical mass of product is key step for these groups.

“Intensive horticulture and livestock industries are becoming more commonplace. This evolution of agriculture is crucial for the Mid North Coast as agriculture is a part of our economy and a drawcard to the region.”

This organic industry development program is supported by the Mid North Coast Area Consultative Committee and the Development Board with funding assistance by the Department of State & Regional Development and the Federal Department of Transport and Regional Services.

All interested or current organic producers are invited to join the Mid North Coast organics industry and participate in the group’s development initiatives.

Further information is available from Lyndell Stone, Mid North Coast Regional Development Board on (02) 6583 5647 or fip@betterbusiness.nsw.gov.au



Above: Mid North Coast organic PROGRAZE participants during their recent 'Soils' day at Alan and Maureen Smith's property on the Comboyne plateau.

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World Organic Movement Focuses on Adelaide

The eyes of the organic world will be focused on Adelaide in September. The 15th International Federation of Organic Agriculture Movements (IFOAM) World Congress is being held in conjunction with the International Society of Organic Agriculture Research (ISO FAR) Conference and the 8th International IFOAM Organic Viticulture and Wine Conference.

The 15th IFOAM World Congress will bring together the most important organic practitioners, policy makers, innovators, thinkers and scientists ever assembled in Australia to debate the big issues of sustainability.

Preparations for the Congress continue to gather momentum. The program is dynamic, with more than 300 provocative workshops, papers and Congress posters from industry leaders and practitioners from around the world.

The Congress will provide a platform for the critical examination of the role, limits, principles and integrity of organic agriculture from agronomic practices to biodiversity and their social and economic impacts.

The Congress theme of *Shaping Sustainable Systems* and ISO FAR's focus on *Researching Sustainable Systems*, promise to stimulate and inform all who attend.

The challenge from the Congress organizing committee to every sector of the organic movement in Australia is to take advantage of this unique opportunity to be actively involved in a World Congress that will set the direction and agenda of the organic movement worldwide for the next decade.

"We need every individual and organic group in the country to take up this challenge, get active and get involved in the 15th IFOAM Congress. Everyone has something to contribute and all who attend will have the opportunity to debate, discuss and learn from the experience," Congress coordinator Jan Denham said.

Accompanying events include a significant and diverse range of pre and post Congress tours to tropical North Queensland, outback Australia, Kangaroo Island and the Adelaide environs.

The Congress Organic Exhibition at the Adelaide Convention Centre will be the largest ever assembled in Australia. The **Go Organic Festival** of food, music and sustainable living in Botanic Park on Saturday and Sunday September 24th and 25th is a free public event. It will showcase organic food and beverages, music, entertainment, demonstrations and information.

Consideration will be given to broader social and policy issues of community, gender and social justice, and how they interact with food security, sustainable land use and organic certification. In placing the spotlight on the host nation, there will also be a particular focus on the unique Australian organic systems of permaculture, animal husbandry and rangeland systems' management.

"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," Jan Denham said.

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

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“It is our opportunity to demonstrate the leading role organic systems can play in addressing and supporting sustainable solutions in agriculture,” Jan Denham said.

The highly regarded 2005 Congress keynote speaker list includes Prof. Dr. Hardy Vogtmann, Prof. Dr. Ulrich Köpke, David Holmgren, Dr Tim Flannery, Professor Stuart B. Hill, Adimaimalaga Tafuna’I, Alberto Pipo Lernoud, Sue Kedgley and David Brook.

For more information on the 15th IFOAM World Congress contact: Jan Denham 2005 Organic World Congress Co-ordinator General: +61 8 8339 7800 Direct: +61 3 5027 9249 E-mail: ifoam2005@nasaa.com.au or got to the Congress Website: <http://new.webtemplate.com.au/bridgehead/NASAA/>

Mid North Coast Organics Inc. encouraging new members

Following the first official meeting of the Mid North Coast Organics Inc. in mid April, the association is now open for membership. MNC Organics Inc. has been formed to support commercial organic and biodynamic producers, facilitate a network of producers and to promote the sharing and dissemination of information.

Within the association there are four chapters; Livestock, Garlic, Fruit and Nuts and Vegetables and by being a part of the association, members can benefit by being able to attend field days, meetings and share in the growing information network within all four of these chapters.

At the meeting, the executives were elected for the Association’s Committee as follows; the President is Simone Winter (also Publicity Officer), the Vice President is Alan Parker, the Treasurer is John Casimir and the Secretary is Carolyn Cameron (also Public Officer).



Above: The MNC Organics Inc. Committee (with organic kiwi fruit grown by Tom Hackett). L-R, Simone Winter (President & Publicity Officer), John Casimir (Vice President), Tom Hackett, Rick Sharp, Alan Parker (Vice President), Carolyn Cameron (Secretary & Public Officer), Peter Murphy and Susan Harwood.

The principal aim of MNC Organics Inc. is to grow the organic industry on the Mid North Coast and it now welcomes fellow organic farmers or other interested parties in becoming a part of this process.

A major development was also achieved for MNC Organics Inc. when funding from NFIS (National Food Industry Strategy) was approved. NFIS will be assisting representatives from MNC Organics Inc. in the process of developing a regional organics marketing entity. This entity will assist Association members with commercial trading and gaining a viable and long term share of the local, national and international marketplace.

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This wider industry work for MNC Organics Inc is continuing to receive the assistance of the Department of State and Regional Development, Area Consultative Committee, the Regional Development Board and Department of Transport and Regional Services. These groups continue to assist regional producers in the exploration of business partnerships that can grow their industry and agricultural business.

For further comment or information please phone MNC Organics Inc. President, Simone Winter on 02 6561 7402 or via email at twinoaksestate@tsn.cc

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Ecolivingexpo- solutions for a sustainable future. 3, 4, & 5th June 2005 at the Ridley Centre, Royal Adelaide Showgrounds, Wayville South Australia.

Want to know about energy efficiency, recycling, water minimisation or conservation? You'll find it all at the **Ecolivingexpo** where displays and special activities will showcase the very latest eco-related products or services.... and all promoting environmental responsibility or contribution to a sustainable future. To find out more, visit the website www.ecolivingexpo.com.au

First Tropical North Queensland Organics Conference: "Organics – a path to best management" 15 – 16 June 2005 Sheridan Plaza Cairns

The Organic Producers Association of Far North Queensland Incorporated (OPAFNQ) is presenting the first Tropical North Queensland Organics Conference and Tropical North Queensland Organic Produce and Product Expo, Wednesday 15 June 2005 followed by a one day Soil symposium with Dr Elaine Ingham, Thursday 16 June 2005.

The conference committee is looking for papers to be presented at the conference. They are interested in Technical papers from researchers, agronomists and scientists and non-technical presentations from growers, retailers, manufacturers, wholesalers, retailers, certifiers, extension providers, consultants, consumers, health workers and all others involved in the organic industry.

Papers are invited for oral and other presentations in the following areas: Soil Nutrition, Erosion, and Restoration; Pest, Disease and Weed Control; Holistic Management Systems; Farm Biodiversity; Harvest and Post Harvest systems; Agripolitics; Marketing and Trade; Certification; Commodity Sectors; Retail; Consumers; Health; Science Research; Social Research; Economics; Ethics; Sustainability and Technology.

For more information contact the Conference Coordinator at Email: opafnq@austarnet.com.au or Phone: (07) 4067 6492 (1-3pm weekdays)

Sydney Organic Expo, 29-31 July 2005

Sydney Exhibition and Convention Centre will be the venue for the Sydney Organic Expo, Australia's first major organic expo. For more information contact: Lena Smeaton – 0413 043 287 or Mary Hackett - 0414 306 689

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15th IFOAM World Organic Congress, Adelaide, 20-23 September 2005

For more information contact: Jan Denham 2005 Organic World Congress Co-ordinator General: +61 8 8339 7800 Direct: +61 3 5027 9249 E-mail: ifoam2005@nasa.com.au or got to the Congress Website: <http://new.webtemplate.com.au/bridgehead/NASAA/>

Third International Conference on Non Chemical Crop Protection Methods, Lille, France 13-15 March, 2006

The French Association of Plant Protection organises the Third International Conference on Non Chemical Crop Protection Methods, in Lille, from March 13th to 15th 2006. This conference will provide an international forum for scientists, teachers and technicians. It will also provide training and information for growers and other people, in order to promote the use of non chemical crop protection methods. All types of non chemical crop protection methods available for all types of field and protected crops will be presented. See: http://www.afpp.net/Calendrier/Lille_presentation_UK.htm

Symposium Announcement: "Organic Seed Production and Breeding Crops for Organic Systems"

This symposium will held during the annual meeting of the American Society of Agronomy, Crop/Science Society of America/Soil Science Society of America(Tri-Societies) Annual Meetings November 6-12, 2005 in Salt Lake City, UT.

The symposium will be cosponsored by Division C-4 and C-1 of the Crop Science Society of America. Division C-4 focuses on subject matter in seed physiology, production, and technology, and C-1 on crop breeding, genetics and cytology. The organizers of the symposium are soliciting volunteered oral and posters presentation that report research results in the area of seed production and breeding crops for organic agriculture.

If you are interested in presenting a poster or talk, you may register the author and title on-line at the Tri-Societies website: <http://a-c-s.confex.com/crops/2005am/index.htm>

"Genetically Engineered Crops and Pesticide Use in the United States: The First Nine Years"

This report by Charles M. Benbrook (BioTech InfoNet, Technical Paper Number 7) is the first comprehensive estimate of the impacts of GE crops on pesticide use over the nine years of commercial use, since 1996. The report draws on official USDA statistics on the acreage planted to GE varieties from 1996 through 2004, coupled with USDA data on the volume of pesticides applied to corn, soybeans, and cotton. These three crops account for nearly all acres planted to GE crops in the United States.

The analysis addresses the impacts of the two major types of GE traits:

- Herbicide-tolerant (HT) corn, soybeans and cotton;
- *Bacillus thuringiensis* (Bt) transgenic corn and cotton.

One of the key findings of the report show that overall pesticide reduction claims are unfounded. Whilst overall insecticide use has reduced, herbicide use has increased, resistance in weed populations has increased. Whilst initially reducing herbicide use, the ecological adaptations predicated by scientists have been occurring in the case of Roundup Ready crops for three or four years and appear to be accelerating.

The Author, Dr Charles Benbrook, is an agronomist and director of the Northwest Science and Environmental Policy Centre. See the full report, at http://www.biotech-info.net/full_version_first_nine.pdf

Organic News.

Environmental News

The 2005 Environmental Sustainability Index has been released by a combined think tank from Yale and Columbia universities in the United States. The index combines 21 indicators of environmental performance, such as greenhouse-gas emissions and water quality. The index benchmarks the ability of nations to protect the environment over the next several decades. Australia came in 13th, just pipping New Zealand (14), well behind the winner Finland, but holding a significant advantage over the United States which came in 45th out of the 146 contenders. North Korea was last. http://www.yale.edu/esi/ESI2005_Main_Report.pdf

Rapid biodiversity assessment

South African biologists have devised a new method of rapidly assessing how much human actions are affecting the natural world. The 'biodiversity intactness index' draws on expert knowledge about how human activities increase or decrease the total populations of groups of ecologically similar species and measures how close populations of each of these groups are to those in pre-industrial times. The greatest decreases in biodiversity, according to the index, were in Lesotho and Swaziland, the two countries with the greatest density of human population. Read the paper at <http://www.scidev.net/pdffiles/nature/nature03289.pdf>.

Herbicides have aquatic impact

A study of the impact of four common pesticides, carbaryl, malathion, glyphosate and 2,4-D, on the biodiversity of aquatic communities found that species richness was reduced by 15% with carbaryl, 30% with malathion, and 22% with Roundup, while 2,4-D had no effect. The insecticides also reduced the diversity and biomass of predatory insects with glyphosate completely eliminating two species of tadpoles and nearly exterminating a third species, resulting in a 70% decline in the species richness of tadpoles. Read the abstract at <http://www.esajournals.org/esaonline/?request=get-abstract&issn=1051-0761&volume=15&issue=2&page=618>.

Banksia Environmental Awards 2005

The Banksia Awards recognise and reward individuals, community groups, businesses and government organisations for leadership and excellence in protecting Australia's environment and the ecological services it provides. This year's program will highlight environmental education. There are 12 categories across four themes, and full details and application forms are available at www.banksiafdn.com/index.php?page=10.

ATTRA weed website worth a look:

<http://www.attra.org/attra-pub/weed.html>

Exporters needed to participate at Japan's World Expo 2005

Austrade is inviting Australian exporters seeking to broaden their market into Japan to join one of its five trade missions that run in conjunction with the World Expo at Aichi, Japan. World Expo has attracted participation from a record 127 countries. It is expected the Australian pavilion will be one of the most popular for the 15 million people expected to visit Expo over the six months from 25 March to 25 September. Applications to join a mission are sought from Australian companies keen to develop their business in Japan. For more information go to: http://www.austrade.gov.au/australia/layout/0%2C%2C0_S2-1_CLNTXID0032-2_-3_PWB110506991-4_-5_-6_-7_%2C00.html or call 13 28 78.

Organic News.

Do you have any Organic News?

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

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

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