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NSW Flower News

issue 3 July 2004

Welcome to the third issue of Flower News – updates on research and advisory activities from the NSW Department of Primary Industry (formerly NSW Agriculture) plus news items of interest. From 1 July 2004, NSW Agriculture was incorporated into the NSW Department of Primary Industries along with Mineral Resources, NSW Fisheries and State Forests of NSW.

This issue includes reports on several important industry events, for those who were unable to attend in person. On page 7 you will find details of events and conferences coming up in the next few months.

Research update

The Rural Industries Research & Development Corporation (RIRDC) has indicated that it will be supporting the following new projects:

- Flannel flowers year round: a model protected cultivation system - project leader Dr Ross Worrall
- Flowers by sea: increasing market access for Australian wildflowers – project leader Dr Jenny Ekman
- The on farm evaluation of grafted wildflowers for commercial cut flower production – project leader Jonathan Lidbetter – see p. 8.

These three projects have a combined budget of over \$3M, including a significant contribution from industry. Look out for more details on these projects in our next newsletter.



NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Events

Strong industry support of annual meeting of NSW Wildflower growers

A well attended sixth annual meeting (115 participants from NSW and Queensland) was held over the weekend of February 28 and 29.



Lloyd Tubb shared his experiences with the foliage crop *Stenocarpus* during the conference farm tour.

The industry meeting covered a range of topics of appeal to both new and established growers.

The conference was supported by 10 trade exhibitors and the conference dinner was well attended. The farm tour on the following day visited 4 farms in the region and participants saw a wide range of Australian native and South African crops in cultivation.

A meeting of the Blandfordia Research & Extension Group was held in conjunction with the conference.

A detailed report on the conference can be found on page 9 of this newsletter.

What's the future in soil fumigation?

With full methyl bromide (MB) phase out for non-quarantine purposes scheduled for January 2005, several flower growers joined strawberry, fruit, turf and vegetable growers at a recent update seminar held in Sydney. This seminar brought participants the latest on alternative soil fumigation strategies available now and in the future. These include direct chemical replacements for methyl bromide (an ozone depleting chemical), more flexible equipment for delivering steam or chemical fumigants to soil as well as alternative production systems, such as growing crops in media instead of soil and using biofumigant crops.

The event was hosted by Bettina Gollnow and Lawrence Ullio, both extension horticulturists with the NSW Department of Primary Industry, Camden. Fumigation contractors, industry advisors, researchers and representatives of companies developing new fumigants also attended.

The key messages from the array of expert speakers were:

- * In some cases, weed control is a more important reason for fumigating than disease control. Some weed seeds and plant pathogen spores are very resilient and can survive various soil disinfection treatments.
- * There are opportunities to use existing fungicides more strategically in disease management. New products under development (biocontrols and biorationals) offer new approaches, for example some work by making the plant more resistant to disease.
- * Growers can achieve a lot by improving their hygiene and excluding diseases from production systems.
- * Some growers are able to bypass the need for fumigants by growing in soil less media rather than soil. However, some pathogens transfer to these systems too.
- * Since 1995, Australian agriculture has reduced its use of MB by 70% and no industry seems to have suffered adversely as a result. The phase out campaign has stimulated a whole range of technologies and ideas, which meet the challenge of doing it equally well and profitably, without MB. We have gained a great deal of knowledge about how to better control pests, diseases and weeds as a result.

* There are a number of chemical alternatives to MB, including Telone C35®, metham sodium and dazomet (Basamid®). Some give results equally as good as MB but application methods require more finesse. There is no single MB replacement and growers need to make decisions according to what they grow, their local climate and what they need to control as well as cost.

* New chemical fumigants are under development – eg cyanogen, methyl iodide, sodium azide and propylene oxide.



NSW flower grower Peter Sproule (right) was acknowledged at the seminar for his contribution to the national field trial program. Peter hosted three trials on greenhouse flowers on his farm. He is pictured with Dr Ian Porter and Bettina Gollnow.

* New methods of chemical delivery to soil are also being developed, for example through irrigation drip lines.

* The relatively small size of the Australian market and the costs (dollars and time) of achieving registration may limit the products marketed here. Telone has taken 6 years to register.

* Keep an eye on the future when there will be more pressure to use non-chemical approaches due to food safety and environmental concerns. Non-chemical approaches to date include conversion to growing media, steam, solarisation and propane burners for weed control. Some of these approaches are harder to manage, may suit only certain conditions or may give inconsistent results.

* Trial work with methyl iodide, a chemical very similar to MB but without the adverse effect on the ozone layer, shows this chemical has equal or better efficacy than MB. If Australian registration proceeds smoothly, this product will be available in mid 2006.

* Critical to successful fumigation operations are soil preparation, soil type, soil moisture, temperature and plant back time. MB is 'very forgiving' and achieves good results under a range of conditions, but

alternatives will only work consistently if conditions are ideal.

* Fumigant users need to be formally trained because of occupational health and safety issues arising from soil fumigation. Access to fumigants is restricted to those who have completed training and obtained a license from Workcover NSW.

* A major issue for NSW growers is the lack of a local licensed and experienced fumigation contractor, and as a result there is no local experience with the product Telone C35® which has been adopted interstate as the direct replacement for MB in several industries. It is suitable for field application and for greenhouses with open ends.

* There are some encouraging new developments – for example the ‘Bioflash’ machine from Italy. This machine incorporates hot lime into the soil at the same time as steam and commercial Australian trials of this technology are about to start. This approach allows very fast plant back times (planting in the afternoon of the day of treatment, compared to some chemical fumigants where there may be delays of some weeks after treatment before the next crop can safely be planted). However, its efficacy under Australian conditions needs to be fully tested. In Europe it has proven effective in greenhouses, especially for nematode control, and already Queensland trials have shown it is very effective in killing nut grass, a particularly persistent weed.

* In less than 10 years, the national strategy for MB phase out has achieved a great deal. 50 trials have been conducted around Australia, new products have been developed and in some cases registered, alternative methods tested and new machinery developed. There have been information ‘roadshows’ and networks have been set up to communicate research and policy to growers and others. Twelve editions of the ‘MB update’ newsletter have been published. Australia has been represented at many international MB conventions and the Australian program gets a lot of praise internationally for its achievements.

* A brand new booklet has just been released for growers, called **‘Getting the most from methyl bromide alternatives’** (free copies are available for growers and the book is also published on www.dpi.vic.gov.au/farming/horticulture/mb). Areas covered include the background to MB phase out, knowing your pests, non chemical and chemical alternatives to MB, soil preparation, weather conditions during fumigation, application techniques, including methods of sealing fumigants in soils and management of fumigant residues. Many photos and

diagrams support the information, and critical actions are clearly highlighted.

Growers wishing to receive an information package including notes from the seminar and a copy of the booklet should contact Bettina Gollnow at NSW Department of Primary Industry, PMB 8, Camden 2570, phone 02 4640 6333, fax 02 4640 6300.

12th International Protea Conference, Melbourne.



IPA delegates at Proteaflora nursery.

The 2004 IPA conference was held in early April, co-hosted by the International Protea Association, Wildflowers Australia (formerly the Australian Flora & Protea Growers Association) and the International Protea Working Group. The theme of the conference was ‘Competing, cooperating and caring’.

Dr Ross Worrall (Senior Research Horticulturist, Narara) and **Bettina Gollnow** [Development Officer (Floriculture), EMAI] attended this conference. Ross presented two papers, one on ‘Post harvest management of waratahs’ and another (co-authored by **Sophie Parks**) on ‘Fertiliser requirements of the NSW waratah *Telopea speciosissima*’.

Bettina was a member of the conference scientific committee and coordinated papers for the session ‘industry communities’ which looked at industry development issues. As part of this session, she spoke about the ‘NSW wildflower industry’.

The conference attracted around 90 participants from major protea growing countries around the world including South Africa, Zimbabwe, the US, New Zealand, Spain, and Portugal, as well as Chile where a fledgling export industry has established. Marketers from France and Holland also attended. The conference was extremely well organised and very positive in tone, presenting a rare networking

opportunity for local and overseas growers and researchers.

The program included two days of talks (10 papers presented by overseas delegates and 18 by Australian speakers) and poster presentations and a farm tour which included a visit to Proteaflora, a specialist proteaceae nursery with ISO 9001:2000 accreditation.

Keynote addresses provided both a context for the conference (Denis Tricks, grower and former RIRDC member on 'The evolution of the Australian proteaceae industry') and challenges for the future (Carolyn Cameron, Manager Practice Change DPI Victoria spoke on 'Adoption of innovation and change' while Martin Kneebone, Managing Director of RETAILworks Pty Ltd considered 'Markets and the operations of competitive forces'). A fascinating session was an industry overview, country by country, with most countries planning further expansion to service the world export market and a number of problems common to all.

Details of papers of interest to growers can be found on page 11 of this newsletter.

The next IPA conference will be held in San Diego in 2006.

Flower growers and Sydney Water restrictions.



Commercial flower growers are reminded that if they are Sydney Water customers, they need to be aware of current and future water restrictions (and growers relying on town water supplies elsewhere should also keep up to date with changes in local regulations).

At the moment, growers using **overhead sprinklers** to irrigate flowers, potted plants or other crops can only use them between 6 am and 9 am and between 5 pm and 8 pm, with hand watering allowed at any time in between. If you use a **drip irrigation system**, you can keep operating it without change.

There are a number of existing exemptions for non residential customers. There are two that potentially apply to flower growers:

Under Type A: Exemptions for sprinklers, and watering systems and hand-held hosing

1A. Use of water by plant nurseries, turf and professional growers

This exemption applies to non-residential customers that need to use water at their registered business address(es) to maintain: **wholesale/retail and council plant nurseries, professional plant and turf growing activities or officially designated botanical gardens.**

Sprinklers and watering systems

Misting sprays operated on an automatic timing system may be used in enclosed greenhouses.

On hot days, when the Bureau of Meteorology forecasts the temperature to be 30 degrees or greater in Sydney Water's area of operations, nurseries may operate sprinklers or watering systems from 1.00 pm - 2.00 pm. This will apply if the Bureau has forecast the temperature on the day of the expected hot weather, or if the forecast is made the day before the expected hot weather.

Hosing of lawns and gardens

Hoses used for hand-held hosing of plants and turf must be fitted with a trigger nozzle or other attachment with an on/off switch. Hoses must not be left unattended at any time.

Display beds or gardens where plants are not directly for sale are not covered by this exemption, but may be watered by:

- * hand-held hosing before 9.00 am and after 5.00 pm on Wednesdays, Fridays and Sundays
- * drip irrigation
- * using buckets or watering cans at any time
- * using water from a non-potable supply.

Conditions

1. **Sprinklers and watering systems may operate from 6.00 am - 9.00 am and 5.00 pm - 8.00 pm.**
2. Misting sprays used for propagation must be controlled by an automatic device.
3. Sprinklers and watering systems may operate from 1.00 pm - 2.00 pm on days when the Bureau of Meteorology forecasts temperatures of 30 degrees or greater.
4. It is mandatory that hand-held hoses are fitted with a trigger nozzle or other attachment with an on/off switch.

5. It is mandatory that hoses are not left unattended at any time.
6. A suitable backflow prevention containment device must be in place.
7. Any standpipe that is used must be metered and issued or approved by Sydney Water.

3A. Use of water by market gardeners, including rose and flower growers

This exemption applies to market gardeners that need to use water for limited periods **at their registered business address (es)** to maintain healthy crops that are highly susceptible to heat stress and leaf burns.

Sprinklers and watering systems

Sprinklers and watering systems may operate for a maximum of 20 minutes within each two-hour period.

Hosing of lawns and gardens

Hoses used for hand-held hosing of plants and crops must be fitted with a trigger nozzle or other attachment with an on/off switch. Hoses must not be left unattended at any time.

Conditions

1. Sprinklers and watering systems may operate for a maximum of twenty minutes within each two-hour period commencing at 4.00 am and finishing at 8.00 pm.
2. It is mandatory that hand-held hoses are fitted with a trigger nozzle or other attachment with an on/off switch.
3. It is mandatory that hoses are not left unattended at any time.
4. A suitable backflow prevention containment device must be in place.
5. Any standpipe that is used must be metered and issued or approved by Sydney Water.

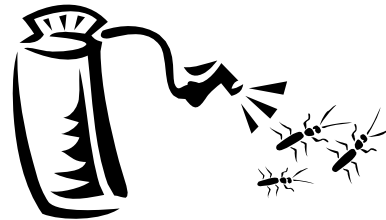
As a flower grower, you have to choose which of these two categories best applies to you (you can't be in both). As a commercial grower, you are automatically covered, but if you want a sticker to place on your gate you need to apply direct to Sydney Water for an individual exemption. You need to apply on line though Sydney Water's website – www.sydneywater.com.au. Sydney Water inspectors refer to their database of individual exemptions and the officially defined exemptions, as published on their website. Don't be caught out – check the details with Sydney Water if you aren't sure.

Pest and pesticide news

Minor use information

Use of pesticides in flower growing is considered a 'minor use' by the Australian Pesticides & Veterinary Medicines Authority (APVMA). You can keep up to date with minor use issues, especially recently approved permits for minor uses through a newsletter 'Minor Use News' published monthly by the APVMA. You can subscribe on line to receive this information – go to www.apvma.gov.au or call 02 6272 3726.

The following chemicals, used in the flower industry, are currently under review by the APVMA – endosulfan, carbaryl, dimethoate and omethoate (due to concerns about their toxicology, occupational health and safety issues and residue concerns). For the latest information, check the APVMA website.



PLANTPLAN endorsed to manage emergency plant pest incursions

In June Plant Health Australia's (PHA) industry and government members endorsed PLANTPLAN, Australia's first national emergency preparedness and response guidelines for the plant industries, during a workshop in Canberra.

PLANTPLAN provides a set of nationally consistent guidelines covering management and response procedures for emergency plant pest incursions affecting the Australian plant industries. By adopting common and enhanced emergency response procedures, government, industry and individual producers will benefit from more rapid, consistent and efficient responses to harmful pest incursions.

Australia's plant industries are worth \$13 billion annually to the Australian economy. The introduction of exotic pests and diseases (that are not yet found in Australia) poses a major and continued threat to our significant plant industry exports.

Version 1 of PLANTPLAN is now available for download from the PHA website (see next page).

PLANTPLAN will be reviewed annually and updated

as a result of activation of the plan or testing in exercises and workshops.

Plant Health Australia (PHA) is a peak national coordinating body for plant health in Australia. PHA commissions projects and works with members to coordinate the development of national policy and capability to enhance the ability of Australian agriculture to respond effectively to plant pests, weeds and diseases. PHA was formed in recognition that, in global terms, Australia is fortunate to experience a relative freedom from pests, weeds and diseases that can affect plant industries. We have been able to build a valuable reputation as a reliable and efficient supplier of quality plant products that are clean and free from diseases, pests and weeds. PHA is a non-profit public company limited by guarantee and its activities are funded from annual subscriptions paid by its members, which include the Australian Government, all state and territory governments and national representative plant industry organisations.

You can find out more about the activities of Plant Health Australia from its website – www.planthealthaustralia.com.au – and you can subscribe to a weekly newsletter ‘Tendrils’.

Industry news



Wildflowers NSW meeting

A face to face meeting of the peak body Wildflowers NSW was held at Coffs Harbour at the end of February. The peak body addressed a detailed agenda which included a presentation from the local NSW Farmers representative, discussion of the body’s proposed constitution and budget, pesticide use, and native flora management by NPWS. NSW Agriculture’s Program Manager (Horticultural Products and Plant Protection) Doug Hocking attended and assisted in focussing the discussion on industry R&D projects – the group received an overview of current and proposed R&D floriculture projects conducted by NSW Agriculture and will work this year to develop its own R&D priorities.

Goals for 2003- 2004

1. Establish an R&D plan for the NSW wildflower industry

2. Complete industry survey of pesticide use and seek permits for selected products and crops
3. Collect reliable industry statistics – no. of growers, production statistics
4. Maintain on going liaison with NSW NPWS regarding native flora management
5. Maintain on going liaison with DPNIR (formerly DLWC) regarding water access issues
6. Develop commercially relevant plant standards and promote their use throughout the NSW industry.
7. Develop an operating budget and identify funding sources for Wildflowers NSW.
8. Produce an annual calendar of activities

New standards published

Standards Australia has just published a series of eight Standards that set out minimum general and specific characteristics of fresh cut flowers and foliage for Australian and related flora grown in Australia. The Standards include requirements and guidelines on how to achieve the appropriate freshness and quality, storage conditions, longevity (postharvest vase life), packaging and labelling criteria required to ensure the best possible quality product for export.

The Standards are aimed at growers, suppliers, exporters and buyers. They do not apply to dried flowers and do not include information on operational matters or market specific requirements. The individual species Standards feature full page colour photos to define stages of maturity.

The Standards are the end result of efforts by a large number of people in the industry working with Standards Australia.

The Standards are available for purchase as either a hard copy or as a PDF file through the Standards Australia website. Go to: <http://www.standards.org.au> and search for ‘flowers’. The individual standards are:

- AS 4689.1-2004 Fresh cut flowers and foliage - Australian and related flora - General and postharvest vase life requirements
- AS 4689.2-2004 Fresh cut flowers and foliage - Australian and related flora - Anigozanthos (kangaroo paw)
- AS 4689.3-2004 Fresh cut flowers and foliage - Australian and related flora - Banksia

- AS 4689.4-2004 Fresh cut flowers and foliage - Australian and related flora - *Caustis blakei* (koala fern)
- AS 4689.5-2004 Fresh cut flowers and foliage - Australian and related flora - *Chamelacium* (waxflower)
- AS 4689.6-2004 Fresh cut flowers and foliage - Australian and related flora - *Ozothamnus diosmifolius* syn. *Helichrysum diosmifolium* (rice flower)
- AS 4689.7-2004 Fresh cut flowers and foliage - Australian and related flora - *Telopea* (waratah)



Publications news

A new agnote outlining how to create compost on the farm is now available. The publication **How to compost on farm** (Agnote DPI 448) is a result of work conducted at Wollongbar Agricultural Institute as part of the Good Soil Project funded by the Natural Heritage Trust. See it on our website – <http://www.dpi.gov.au> (agriculture), then select ‘horticulture’, then ‘soil management and irrigation for horticultural crops’.

The agnote gives you the basic information needed to make thermophilic compost from your farm organic wastes. Thermophilic composting produces rapid breakdown of the organic matter where the compost pile gets hot and sterilises seed and pathogens.

Also available on our website is a wealth of information on **irrigation and water**. With spring around the corner, now is the time to review your water resources. See under ‘natural resources, environment and climate’, then ‘water and irrigation’ on our website.

Interesting websites:

New chemicals gateway

A new National Chemical Information Gateway provides a one-stop-shop for information on chemicals. It provides a simple, coordinated and straightforward way to find a wide range of information on chemicals from websites around Australia and the world. Find it at:

<http://www.deh.gov.au/chemicals-gateway>

Information on non-traditional soil additives

* Non-traditional soil additives: can they improve crop production? This is a summary of the general properties of soil conditioners, soil activators and wetting agents and provides a simple trial methodology.

<http://soilcrop.tamu.edu/publications/pubs/15202.pdf>

* Non-conventional soil additives: products, companies, ingredients and claims (November 2001). This 95 page document was prepared by the committee on non-traditional Soil Amendments and Growth Stimulants, and lists the additives by product name with their ingredients, claims and known research.

<http://www.soils.wisc.edu/extension/hottopics/nonconventional.pdf>

* Alternative soil amendments: This US publication describes the various soil amendments that are not standard agricultural fertilisers. These include plant and animal by products, rock powders, seaweed, inoculants, conditioners and others. It is produced by Appropriate Technology transfer for Rural Areas (ATTRA)

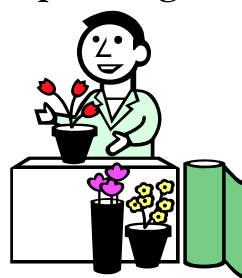
<http://attra.ncat.org/attra-pub/altsoilamend.html>

* Soil conditioners:

This four page publication from the 1980s covers organic matter, humates, manures, polymers and mineral conditioners.

<http://www.oznet.ksu.edu/library/CRPSL2/ncr295.pdf>

Upcoming events:



August

* **ChemCert Australia National 2004 Conference** – ‘Food 4 thought – Keeping community confidence in chemical use’.

August 31 and September 1, Canberra. To register contact PO Box 4580, Kingston ACT 2604, fax: 02 6272 3195.

September

* **Springtime Flora Festival, Kariong**

Thursday September 9 to Sunday September 12

* **Second Australian New Crops Conference**

University of Queensland Gatton,

September 21-24. Preliminary workshops - September

20-21. New Crop Options Day for Primary Producers

- September 25. Details at:

<http://www.newcrops.uq.edu.au/nc2004/>

* **3rd Australian Flower Show, Windsor.**

Friday September 24 to Sunday September 26.

Contact Mary Sweeney on (02) 4758 6892, email:

mary@hermes.net.au

* **Hawkesbury Waratah Festival.**

Saturday September 25 to Monday October 4

November

* **Wildflower Industry Meeting, Narara** hosted by

NSW Department of Primary Industry.

Date to be announced

Grafted wildflowers put to the test

Report by Jonathan Lidbetter and Digby Growns

Several major Australian native perennial flower crops new to cultivation fail to reach their potential because of inherent problems when grown on their own roots. These problems include susceptibility to root diseases, poor root systems, lack of vigour and an intolerance of a wide range of soil types. Alternatively cutting propagation may be 'just too hard' limiting supply. These factors may in turn limit the seasonal range in which varieties may be available, stifling their market development or prohibiting economic commercial cultivation. Inappropriate wild harvest of other species has threatened biodiversity and has been stopped or is increasingly limited by environmental legislation. Thus there is an imperative to find a solution to the limitations to supply of new crops. Budding or grafting is routinely used for most crops in production horticulture (including roses) to overcome these problems.

Pioneering work by grafters including researchers John Wrigley and Keith McIntyre at the Australian National Botanic Gardens, and nursery propagators such as Graham Parr, Don Burke, Doug McKenzie, Phillip Vaughan and Merv Hodge has seen the development of successful graft combinations become a commercial reality in Eastern Australia. The time has come for flower growers to recognise the availability of these new proven graft combinations of cut-flowers and prove their commercial viability.

Of the top 25 export cut flower genera listed by the Australian Flower Export Council (AFEC) at least 10 can now be successfully grafted. Growers are beginning to adopt these in some areas particularly *Eucalyptus ficifolia* varieties and hybrids for domestic consumption, grafted waxflower varieties in SE Queensland and *Eremophila nivea* grown in southern NSW for export. Many of the other combinations are still at a preliminary proof of concept stage where co-ordinated testing across a range of sites for a number of grafted crops could rapidly advance the industry. These advances could make the cultivation of *Boronia*, *Geleznowia verrucosus* (Yellow Bells), *Pimelea physodes* (Qualup Bells) and new crops such as *Verticordia* and *Regelia velutina* a commercial reality across a much broader range of sites within Australia.

Both NSW Department of Primary Industries (NSW DPI, formerly NSW Agriculture) and Western Australian Department of Agriculture (WADA) in conjunction with industry have been experimenting with grafting techniques and combinations in recent years in an effort to accelerate the development of new crops. Recent research at NSW DPI has highlighted the efficacy of grafting to confer resistance to infection of *Boronia heterophylla* from three major *Phytophthora* pathogens. Grafting has also had the advantage of allowing the propagation of difficult to propagate varieties such as *Boronia heterophylla* 'Moonglow' much easier.

A new national project jointly funded by the Rural Industries Research and Development Corporation (RIRDC), NSW DPI and WADA is proposing to facilitate this process. During the project researchers will work directly with growers in choosing applicable graft combinations to their sites and providing planting material for on-farm trials. They will also provide backup support for any problems encountered and evaluate the horticultural and economic success.

A limited number of spaces are available in this project for growers with proven flower growing experience interested in working together. Growers interested in being involved in the national test program can obtain an information package from:

Jonathan Lidbetter

NSW DPI

Ph: 02 4348 1931

Fax: 02 4348 1910

E-mail: Jonathan.Lidbetter@agric.nsw.gov.au

Report on annual meeting of NSW Wildflower growers

Cynthia Carson from the Department of Primary Industries and Fisheries, Queensland highlighted Australian and South African cut flower and foliage species with the best chance of market success according to the 'best bets' program supported by the Rural Industries Research & Development Corporation. This approach aims to match the exporters' needs with those of growers'. Exporters need increased supply of particular products being demanded by their customers. Growers need a list of species they can confidently plant in their area and for which they can expect a reasonable return. An analysis involving 9 exporters produced a list of all the crops with potential for increased sales and these were then rated according to 6 different parameters such as current price and future expected demand to achieve a 'score'. This allowed the top 10 crops by overall demand to be identified. Cynthia profiled the 'best bet' crops, including their expected 'drought tolerance' and 'frost sensitivity'.

In his talk about water reform, Resource Management Officer **Richard Swinton** encouraged growers to take a serious look at how they might protect the future security of their water supply for their crops. He gave the reasons behind the water reform initiatives, outlining the aims of water sharing plans and the priorities under the Water Management Act 2000. He advised growers to plan their irrigation operations by completing an irrigation and drainage management plan, aiming to become as self sufficient in their water resources as possible and to reduce demand through more efficient irrigation systems.

In providing new insights into disease management, plant pathologist **Len Tesoriero** stressed the importance of the interaction between the crop and its growing conditions. He advised growers to minimise the stresses on their plants and to monitor what is happening underground as well as on the surface. Len described root rots of boronias in detail, listing the various environmental and management factors that predispose plants to disease. He also discussed fungal rots of flannel flowers and Rhizoctonia rot and tomato spotted wilt virus in kangaroo paws. In inviting growers to develop a long term strategy incorporating integrated pest management, Len highlighted new biological and biorational approaches likely to be available in the future.

Many growers over a wide area have suffered crop losses due to frost over several years, and the program focussed strongly on frost and its management. Queensland grower **Ken Young** gave a lively account of his personal experiences, illustrated by many photos. He noted that the damage to crops may not be apparent until weeks after a frost event. He found a datalogger very useful in identifying the number of frost events, as some happened in the middle of the night and would otherwise have been missed. Long term effects of frost included a delay in regrowth commencing, short stems during the following season, reduced buyer confidence and plant losses (wax plants seemed to be more susceptible to Phytophthora following frost). Ken noted that anti frost strategies may not be practical – his farm experienced subzero temperatures for 10-12 hours 4 nights in a row and no affordable method could counter this.

Researcher **Dr Ross Worrall** explained what happens during radiation frosts and stressed the wide variation in temperatures measured during a frost. The plant leaves may be considerably colder than temperatures at ground level where, due to the effect of insulation, there are big temperature differences between bare soil, mulch, closely mown and tall ground covers. Ross also encouraged growers to use dataloggers to develop a temperature profile for their own farm and stressed the importance of setting up plantations in a 'non-frost' area if at all possible, as active frost management strategies are costly and of limited efficacy. The 'best' method will vary with each farm but proper design is important as poor design can cause more damage than 'doing nothing'. Ross discussed in detail various methods of actively managing frost, including overhead sprinklers, wind machines, cultural methods, heaters and anti frost chemicals.

Brendon Neilly from Wildlife Licensing at NPWS updated delegates on native flora licensing. He stressed the importance of a licensing process that moves with the industry and with changes in conservation strategy and noted the importance of inputs from industry through the Cut flower Industry Consultative Committee.

Achievements to date by the NSW wildflower peak body, Wildflowers NSW, were discussed by **Bettina Gollnow**, who also highlighted areas where individual growers can help with ideas and information.

The afternoon export discussions provided a comprehensive overview of current issues. **Dr Brian Freeman** from IHM Australia discussed the effects of a rising Aussie dollar in different markets. He looked at the drivers influencing the Aussie dollar, and changes in its value relative to the Japanese yen and how these effects can be managed. He highlighted the difficulties of business planning when the currency fluctuates as much as it has in the last 2 years. Right across the world floriculture industry, prices have declined while costs (fuel, airfreight, packaging, labour) are increasing, affecting everyone in the business.

Philippe Lescuyer (Experience Flowers Pty Ltd) encouraged growers to focus on the needs of the consumer who buys their product. He gave an insight into flower purchasing in different countries. The Japanese buy flowers mainly for religious reasons rather than for home use. American consumers spend and know relatively little about flowers so ‘value adding’ is important – eye appeal, sleeves bearing attractive logos and flower care tips, sachets of flower food etc. Growers must not only demonstrate the value of their product over other flowers by offering perfect product at the right stage of opening, but also need to communicate the ‘value they have added’ clearly to the market place. They must focus on their marketing strategy and image, supporting the efforts of exporters and importers who are themselves busy people.

The Australian Flower Company’s **Jamie Creer** gave insights into the countries which compete with Australian growers for markets. On the world market, prices change daily and flowers are in oversupply, dominated either by high tech intensive greenhouse production systems or cheap broad acre field production. Most consumption and production occurs in the northern hemisphere. Jamie analysed Australia’s strengths and weaknesses in this world scene, with the latter tending to dominate. Competition is coming mainly from other southern hemisphere producers, but Australian native flowers are also being grown in the northern hemisphere and so there is overlap in supply. Our competitors also have weaknesses, which we must exploit, in addition to becoming more efficient farmers and working harder to develop new varieties from our native gene pool, ensuring we benefit first by not releasing new lines to competing growers.

For the benefit of waratah growers, University of Sydney PhD student Amelia Martyn presented

practical tips to reduce bract browning. These include managing the crop to minimise stress and shading the buds from bud opening onwards.

Horticultural researcher Joanna Srhoj, QDPIF, presented information on the development of five new native cut foliage crops, emphasising the need for a ‘multi faceted approach’ when developing new products. The project has involved refining 28 potential species down to the five ‘best bets’ and carrying out field trials, pest and disease assessments, postharvest and market research as well as grower education. The species are *Lomatia fraxinifolia*, *Athertonia diversifolia*, *Grevillea baileyana* and two forms of *Stenocarpus*.

Australian Native Flower Growers & Promoters debut at the 2004 Melbourne International Flower and Garden Show



The photo shows part of the display organised by the Australian Native Flower Growers and Promoters for the 2004 show. The display was coordinated by Craig Scott and designed by Richard Go. Titled ‘Our floral heritage’, the display covered our native flora from every angle, from our early colonial appreciation and use of Australian flora, through the infancy of the cultivated native flora industry, to its more recent development through ‘marketing to the world’ and ‘embracing technology’. The display also highlighted keynote events like the Sydney Olympics that have showcased Australian flora to the world and used futuristic arrangements of flowers and foliage to glimpse into the future.

Report on 12th International Protea Conference, Melbourne.

Some papers of interest to growers included the following.

* Hans Hettasch (a grower and researcher from South Africa) is applying techniques well established in traditional flowers to Leucadendrons - using additional lighting to induce out of season flowering and aiming perhaps for year round flowering in the future.

* The paper presented by Ross Worrall (and co-authored by Sophie Parks) re-evaluated a number of nutrition studies conducted by several people over a long time and challenged the view held by many that 'waratahs and other proteaceae are sensitive to phosphorus fertiliser'. This has practical ramifications for reducing plant losses on commercial nurseries and plantations by altering the way people manage the nutrition of the plants (also the interaction of nutrition with pathogens - high levels of applied N probably lead to high death rates through increased pathogenicity of root diseases).

* Many protea growers seem interested in IPM and biological control, but few detailed studies on how IPM could work have been done. Research in Portugal has broken the ice. They found that there is a physical barrier to successful mealy bug control by the predatory ladybird *Cryptolaemus* in the king protea - the predators couldn't physically get in amongst the bracts where the mealy bugs were.

* Session 9 Farm management systems included papers likely to appeal to growers (sadly there were relatively few to hear the messages) and gave an interesting selection of ideas.

* Robert Middlemann gave a fascinating insight into the complexity of a large scale dried protea operation in South Africa - in the last 5 years this farm has moved from no records to detailed computer records on each field - the field is GPS mapped, details of plants, consumables, capital costs, production yields etc are collected and can be compared. As a result the costs and income can be compared from year to year and between crops. They now know where there is wastage and can deal with it. An interesting finding - doing the costing showed them that manual labour

for weeding costs much more than herbicides plus brush cutting.

* Jessica Connor from DPI Victoria outlined an interactive generic budgeting model and there was a lot of interest from the audience in getting hold of the program! The model generates figures for expected profitability and resulting cashflow for a range of assumptions made about production possibilities. The program helps a grower identify inefficiencies as well as profitability (cumulative cash flow after tax over 10 years and earning rate on capital invested).

* Gerry Parlevliet from Agriculture WA also focussed on improving profitability through good records and performance analysis. This talk also gave growers good information about how to measure their business - a number of indices were used to allow information from different growers to be compared confidentially - eg income/ha, income/plant, cost/ha, cost/stem, labour\$/stem, income per \$1 of labour etc. The work done in WA highlighted that the big cost is labour (63-93% of total cost of wax production, for example) - so trying to save a bit of money by skimping on fertiliser seems silly.

* Ralph Jordan, a grower based in New Zealand gave a really different perspective on profitable farm management - his farm was split into 3 and a different person managed each bit independently (they had a share of the profit with the owner). Costs and profits of each block were calculated so the performance of the 3 managers could be compared. Competition was a good motivation for them to work hard but they also ended up cooperating to reduce costs.

Distribution:

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