



W I L D F L O W E R S
A U S T R A L I A

December 2011 newsletter¹

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Australian Government
Rural Industries Research and
Development Corporation

Wishing all members of the Australian wildflower industry a very Merry Christmas!



(Photo taken at the 2011 Australian Springtime Flora Festival)

The benefits of using mulches in wildflower crops – interim project results

Here is a summary of research into mulch being conducted by Dr Rachel Poulter who is an Industry Development Officer (Water) with the Flower Association of Queensland Inc (FAQI). This project is supported by Horticulture Australia and FAQI (project FLO9000). Rachel provided this information during her presentation at the WFA AGM last August.

The research was prompted by the many questions people ask about the benefits of mulching their wildflower crops, such as how much it costs, how long does it last, what water savings are possible (and how much water do wildflower crops actually need) and what's the best product to use? While there is a strong view that mulching brings many benefits, hard facts and figures are scarce. Can you really save water by mulching? Can you get away with using less herbicide? What effects does mulch have on the soil underneath? What are the costs and benefits?

A trial plantation of Christmas Bush 'Albery's Red' was established at the Redlands Research Facility of the Qld Department of Employment, Economic Development and Innovation (DEEDI). Site preparation began in September 2009, creating raised beds 1 M wide and arranged as a randomised block split plot design (giving 4 replicates of each treatment). Irrigation was set up to allow the researchers to independently irrigate each of four different treatments. These were bare soil, hardwood chips, EcoMulch (a recycled paper product supplied as a roll) and 'forest mulch' (a mulch made from council greenwaste – which comes with all sorts of possible contaminants including

plant pathogens and is quite variable in quality).

Three soil amendments were also compared:

- * Nutritech(R) prescription blend (a combination of the following products: Life-Force Base Blend™, Life-Force Instant Humus™, Nutri-Mate™ Organic Humates, Nutri-Gyp™ Natural Gypsum, ammonium sulphate and Zinc sulphate monohydrate),
- * dolomite, and
- * no amendments.

By April 2010, all plants were established and growing well. At the same time, several unplanned changes to the trial site occurred. A tree windbreak which had been protecting the crop had to be removed, and although it was replaced with a shadecloth windbreak, the crop suffered. Another setback was the death of large numbers of plants due to the very wet summer. Plant death occurred across the site and was not associated with any particular treatment. But as a result, all the plants were removed and the trial completely re-established: the whole area was weeded and replanted. The paper mulch, having degraded early in the trial was replaced with on-site sourced mulch.



Several measurements have already been taken to assess crop growth across the trial, and more will be collected until the trial finishes in May 2012. These have included a monthly measurement of stem growth rates (and the calculation of a 'growth index'), soil moisture and temperature measurements (using sensors buried at 10 cm and connected to an Enviroscan logger – shown in position in the photo above), and weather data. As the plants are still too young, marketable yields have not yet been assessed. Measurements are aimed at determining crop water requirements in the various treatments and relating this to

its productivity, building on data collected from an earlier RIRDC supported project (PRJ-000336: Determining optimum irrigation scheduling requirements of key wildflower crops, conducted by Agri-Sciences Queensland, Department of Education, Economic Development and Innovation with financial and technical support from the Flower Association of Queensland Incorporated (FAQI) completed in May 2010). Management costs have also been calculated – the cost of hand weeding, vs use of herbicide vs the mulch.



Young Christmas bush plant in the forest mulch treatment – note the variable size of mulch components and that some have degraded, leaving bare soil available for weeds to colonise.

So what are the conclusions so far? The paper mulch degraded and disintegrated

after only 12 months, and it was rather difficult to handle. It was also one of the more expensive mulch options.

Both the woodchip and forest mulch significantly reduced the labour needed to manage weeds – by nearly 25%. However, the mulch treatments require additional labour inputs to replenish them.

Extrapolating the cost comparison per Ha and per year, the comparative cost inputs are:

Hand weeding \$23,000

Wood chip or forest mulch: \$5,000 plus around \$2,000 to actually spread the mulch.

EcoMulch mat was intermediate with an estimated labour cost of \$13,000.

The difference of \$18,000 in labour costs for weeding (unmulched labour cost of \$23,000 compared to woodchip of \$5,000) far outweighs the initial expenditure in purchasing and spreading good quality mulch.

The soil on the trial site is a deep red kraznozem (6-7 M deep). When soil moisture levels were compared, looking at the moisture draw down rates in each treatment, the paper mulch product was found to dry out even faster than bare soil

because the paper is wicking the moisture up out of the soil and then it evaporates off the mulch surface during the day.

Soil test results are also showing interesting results, with statistically significant differences between treatments. The calcium/magnesium ratio (which is a measure of soil texture and stability) increased for all treatments except bare soil. Magnesium, sodium and potassium increased in the forest mulch and bare ground treatments.

Salinity increased in the bare ground and paper mulch treatments. This is a reflection of the quality of the irrigation water used, which was recycled water. While the recycled water was of adequate quality for irrigating crops, the increased rate of evaporation from the paper mulch and bare ground meant that the salts are left behind in the soil.

There was a slight increase in soil pH in the bare ground treatment. In all treatments, manganese and silicon levels decreased.

Overall the trial is providing valid data to prove that mulch is an effective tool for weed management and is also positive for soil health. However, to date there are no

significant differences in productivity between treatments and split treatments.

Despite adequate water during the majority of the last season, there have been issues with water evaporating from the soil surface and this has influenced soil nutrient levels and overall soil health. Mulches definitely are not all the same and there is more to learn about the behaviour of different products, especially in regard to water evaporation from the beds and salt accumulation in the soil. Much more will be known at the conclusion of this project.

NRIA minor use project update

NRIA conducted a workshop in Brisbane on November 29 to determine the major insect and pathogen problems and their most appropriate chemical solutions for the various new and emerging plant industries. This is the raw data that will feed into a process for prioritising and seeking Minor Use permits from the APVMA to manage important pests and diseases common to a range of new plant industries. There were inputs from 19 different industries, including bush foods, dates, exotic tropical fruits, green tea, ginger, hazelnuts, hemp, jojoba, medicinal poppies, native grasses, olives, tea tree, various new vegetable crops and, of course, wildflowers. In all 112 different chemicals were listed, targeting

around 60 pest and disease problems. More details available soon.

Building Brand Australia Industry Engagement



WFA has received the following update on this four-year, \$20 million government initiative to enhance Australia's international reputation. Austrade is the government agency tasked with delivering the program. To this end the Australia Unlimited brand has been developed. An international communications strategy is now underway, to take contemporary stories of Australian capability and achievement to the world.

You can find out more by following the links below:

[Section 1](#) Background to the current Brand Australia Program Strategy

[Section 2](#) The Australia Unlimited Content Platform

[Section 3](#) The Australia Unlimited brandmark

Further examples of successful branding for international activities can be found on www.brandaustralia.gov.au

More information is available from Shayne Mallard, StateCraft
(shayne.mallard@statecraft.com.au)

Summary of topics discussed at the WFA board meeting

The WFA board met by teleconference in late November. Topics discussed were progress with communications to members, planned regional conferences for 2012 and other services to members including a new website.

R&D update

RIRDC has advised that for the wildflowers and native plants program, 3 preliminary project proposals have gone through to the final research project stage.

This means that RIRDC and the wildflowers industry R&D committee will be reviewing 3 detailed submissions in 2012 outlining new industry research and development projects. These specifically address the objectives of developing efficient production and expanding markets outlined in the current industry 5 year R&D plan.



Completed R&D: Scent and consumer acceptability of cut *Ptilotus* flowers



Ptilotus flowers.
(Photo reproduced courtesy of NSW Primary Industries).

There is interest in cut *Ptilotus* flowers on both international and domestic markets, as *Ptilotus* flowers have a good vase life (10-14 days) and dehydrate to become everlasting.

Another potentially important character of *Ptilotus* is that the flowers are scented. With consumers perceiving fragrance as a desirable feature in other cut flowers such as roses and carnations, this RIRDC project developed a greater understanding of whether or not consumers view scent in *Ptilotus* as a desirable attribute. The researchers (Daryl Joyce, Amanda J Able, Margaret Cover and Bruce D'Arcy, from the

School of Land, Crop and Food Sciences at The University of Queensland, Gatton) also investigated the biochemical, tissue type and temporal (time) nature of scent (volatiles) emissions from *Ptilotus nobilis*. For this, they specifically studied flowers of the recently released cultivars 'Passion' and 'Purity'. Such knowledge could help drive future selection of improved lines, based on the genetic, developmental and environmental factors that influence fragrance emission.

The research found that over 25 individual volatiles potentially contribute to the scent of *P. nobilis* 'Passion' and 'Purity' inflorescences. However, the profiles of the volatiles produced differed between the cultivars and between floral organs (i.e. reproductive, petal and carpel tissues). Total volatiles production was found to be relatively high at harvest but generally tended to fall during vase life at room temperature.

The report also includes useful information on how to conduct a consumer survey to gauge interest in the attributes of a native flower (something which has not received much focus to date). Interestingly, on average consumers were slightly more attracted by the *Ptilotus* flower shape and colour, than by its scent...

(probably because many had never seen this flower before).

Read and download the final report at <https://rirdc.infoservices.com.au/items/og-141>

A factsheet on *Ptilotus* can be found on pages 141-144 of *Postharvest Handling of Australian Flowers from Australian Native Plants and Related Species. A Practical Manual*. Second edition by John Faragher, Bettina Gollnow and Daryl Joyce November 2010 RIRDC Publication No. 10/027 RIRDC Project No. PRJ-000331

Myrtle rust update

Myrtle rust is something we will have to learn to live with, as it cannot be eradicated and will continue to spread because it produces thousands of spores that are easily spread by wind, human activity and animals. However, we can limit its spread, manage its impact and conduct research to define its full host range and develop long-term solutions.

Here is an update of the situation at the end of 2011, with the disease present in NSW and Queensland. Other states and territories have survey programs in place to monitor susceptible plants and enable early

detection should it have spread further afield.

Most states have implemented movement conditions for plant material from the family Myrtaceae and restrictions apply to all myrtaceous plant material including:

- nursery stock (see the list of current and potential known host plants by following the link below)
- fruit
- cut flowers and foliage
- seeds
- mulch
- machinery and equipment associated with their production.

The host list for Myrtle rust is now kept and compiled nationally at http://www.outbreak.gov.au/pests_diseases/pests_diseases_plant/myrtle-rust/national_host_list.html. Over 100 species are listed, though unofficial lists include almost 200 species as being susceptible to this disease.

For more information on sending plants or plant material from NSW or Queensland to an interstate market, contact the destination state quarantine authority:

- South Australia - 1300 666 010
- Tasmania - (03) 6233 3352
- Western Australia - (08) 9334 1800

- Victoria - 13 61 86
- Northern Territory - (08) 8999 2118

NSW update

Reports along the eastern seaboard of NSW continue to come in of Myrtle rust infestations in gardens and natural bushland with the worst affected areas located north from Sydney. One of the most severely affected species is *Rhodamnia rubescens* which is relatively widespread in this area. Unfortunately many rare plants are also suffering badly. An effort is underway to try and conserve some of these plants.

The Department of Primary industries (DPI) is very interested to learn of any plants which appear to be showing signs of resistance or tolerance to myrtle rust infection - particularly where relatively healthy plants are found among other very badly affected specimens of the same species. Please email biosecurity@industry.nsw.gov.au if you wish to report potentially resistant plants, and remember to continue to report new hosts and outbreaks on the far south coast and inland NSW.

For the latest information, go to: <http://www.dpi.nsw.gov.au/biosecurity/plant/myrtle-rust>

Myrtle rust ICA training package

NSW DPI is calling on nurseries in NSW who are interested in becoming accredited under a new Interstate Certification Assurance procedure **ICA-42 Nursery Freedom, Treatment and Inspection for Myrtle Rust** to send expressions of interest to Bev Zurbo by email bev.zurbo@industry.nsw.gov.au The new ICA will enable businesses to self-certify host produce being sold into some interstate markets.

(This information is reproduced with acknowledgement from NSW Plant Biosecurity News - November 2011, published online by NSW DPI).

Note: There are unofficial reports of plants infected with Myrtle rust being available for sale in retail plant outlets in NSW. So, be vigilant, lest you introduce Myrtle rust into your plantation via a new plant for the home garden...

Qld update

Myrtle rust is now widely spread in South East Queensland but recent detections have been confirmed in nurseries in Cairns and Townsville.

Total number of myrtle rust cases in Queensland: 828

Total number of council areas with myrtle rust cases: 17

Total number of affected (host) species: 101

For the latest information, including details of information sessions, disease facts and photos, prevention and treatment, go to: http://www.dpi.qld.gov.au/4790_19788.htm

Quarantine starts at home - buying plants online

Online shopping is becoming more and more popular with many nurseries selling plants through their websites and through online marketplaces such as eBay. With Christmas fast approaching, many shoppers will be clicking away to buy that special gift. But they may end up giving a lot more than they intended! Many quarantine pests, for example spiralling whitefly and myrtle rust, can be spread in plant material. If you are considering buying live plants and seeds online, first check whether there are restrictions on importing these items into your state. The Quarantine Domestic program exists to help the public negotiate interstate quarantine requirements across Australia.

Check out www.quarantinedomestic.gov.au to see what you can and can't bring into your home state.

(This information is reproduced with acknowledgement from NSW Plant Biosecurity News - November 2011, published online by NSW DPI).

Reminder – IPA Conference



XI International Protea Research Symposium

When: April 23-26, 2012

Where: Santa Cruz, Chile.

This is a reminder for all people interested in participating on the 16th IPA (International Protea Association) Conference and the XIth IPWG (International Protea Working Group) Symposium. The program includes 2 days of conference presentations and two days of field trips to farms growing Australian and South African cut flower and foliage species.

The Conference and Symposium aim to highlight the most recent and exciting developments in growing and researching Proteaceous species around the globe. There will be an emphasis on quality management and production, propagation, ecology, pre and post-harvest physiology, storage and transport technologies, pest and disease management, flowering manipulation and all quality aspects

throughout the supply chain, marketing and distribution systems.

While early bird registrations closed on November 30th, 2011, a discounted rate applies between now and January 30. Click onto the web site at <http://www.proteas2012.cl/registration.php> There you can find more information about the program, the venue, accommodation, and how to register. There are links to general travel and tourist information.

New on the website

WIN newsletter November 2011. Contents include a waratah market report for sales at Sydney Flower Market this season.

Flower terms of the month

What's the difference between a cultivar and a variety?

A **cultivar** is a cultivated variety, or a variety developed in cultivation. Cultivars are distinguished by characters that are significant for their horticultural use (e.g. flower colour) and when they are reproduced these characters are retained because the desirable traits are uniform and stable. A cultivar may be a stable selection of a deliberate (i.e. from a breeding program) or accidental hybrid. It can also be a selection from a cultivated

stock plant or a selection from variants in a wild population which are maintained as a recognisable entity solely by continued propagation.

The term **variety** has a broader meaning. Strictly speaking, 'variety' is a plant classification category, below that of species. It differentiates between variable populations within the same species. The term 'variety' is often used to include cultivated, horticultural varieties, or **cultivars**.



The most widely grown Christmas bush is the cultivar 'Albery's Red' (botanical name: *Ceratopetalum gummiferum* 'Albery's Red') which was originally selected as a variant in a wild population and has been maintained as a recognisable entity solely by continued propagation. (Photo reproduced courtesy of NSW Primary Industries).

This information is adapted with acknowledgement from *Postharvest Handling of Australian Flowers from Australian Native Plants and Related Species. A Practical Manual*. Second edition by John Faragher, Bettina Gollnow and Daryl Joyce November 2010 RIRDC Publication No. 10/027 RIRDC Project No. PRJ-000331. You can download PDF file copies of the manual for free, or purchase a hard copy from:

<https://rirdc.infoservices.com.au/items/10-027>

And speaking of cultivars – introducing ACRA

ACRA is short for the Australian Cultivar Registration Authority. ACRA registers cultivars and records their names. To preserve and confirm the identity of each cultivar, ACRA records its description, history and origin, along with a photo. More broadly, ACRA encourages the horticultural development of Australian flora and publishes information on Australian plant cultivars.

ACRA has been appointed by the International Society for Horticultural Science (ISHS) to record the names of all cultivars of Australian native plants and hybrids between Australian and exotic

plants (excluding Rhododendron and Orchidaceae).

The ACRA office is located at the Australian National Botanic Gardens in Canberra, and is supported by the facilities of the Australian National Herbarium.

The first cultivar registered by ACRA was *Grevillea* 'Robyn Gordon', back in 1974.

ACRA has also developed a Checklist of Australian Native Plant Cultivars. This aims to summarise the history of native plant domestication in Australia by documenting the origins of Australian cultivars and the social contexts in which they arose, as well as providing an outline of their characteristics and performance.

You can find the Checklist in the Australian Plant Name index (APNI) on the Australian National Botanic Garden website – see <http://anbg.gov.au/acra/acra-list-2009.html>

There are around 1800 cultivars listed.

Long term, this Checklist aims to encourage further horticultural development of our native flora and promote uniformity and accuracy of plant names. This helps many people, from the

nursery owner wanting to protect his/her property rights, to the home gardener interested in relating the plant they have just bought to published information on gardening.

It's important to realise that registration of a cultivar does not give the applicant any intellectual property rights (for which you need to obtain a Plant Breeder's Right or PBR protection), but it does prevent another individual obtaining exclusive rights through PBR.

ACRA has links to the Plant Breeders Rights (PBR) office, providing advice on cultivars - their correct identification and details of why they are novel and distinct. In addition, ACRA processes and stores the herbarium (dried) voucher specimens for PBR applicants.

So, if you want to register a selection as a new cultivar, you will need to contact ACRA. Find out what's involved on the ACRA website – see anbg.gov.au/acra. You will need to send a completed application form giving certain information about this selection, along with a fresh specimen and a colour photo.

However, if you are interested in pursuing a Plant Breeder's Right for your selection,

you will need to contact IP Australia at <http://www.ipaustralia.gov.au/>

A PBR is legally enforceable and gives you, the owner, exclusive rights to commercially use it, sell it, direct the production, sale and distribution of it, and receive royalties from the sale of plants.

Events and diary dates 2012

February 18: The next WIN (Wildflower Industry Network NSW Inc.) meeting will be held on farm near Mittagong, NSW. For details please contact Frank Allatt by email (fallatt@bigpond.net.au)

March 28 –April 3: Melbourne International Flower & Garden Show.

The organisers advise exhibitors to register early for next year's event, which is ranked as one of the top 5 flower shows in the world. Over 110,000 visitors attend. Download an application form at www.melbflowershow.com.au

April 18 – 19: NRIA Conference. Ballarat Victoria

April 22-26: International Protea Association (IPA) Conference - 16th IPA Conference and XIth International Protea Working Group Symposium. Santa Cruz, Chile. View more details at <http://www.ipa-protea.org/events/chile-invitation>

May 9-11: Horti ASIA 2012 2012
International Trade Show for Horticultural
and Floricultural Production and
Processing Technology.
Bangkok, Thailand. See www.hortiasia.net

October 10-12, 2012. IFEX 2012, Asia's
largest flower industry trade show: see
<http://www.ifex.jp/en>. Venue: Makuhari
Messe, Japan.

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member's only benefits, please go to the
website - www.wildflowersaustralia.com.au
- and complete a membership application.

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