A Good Weed

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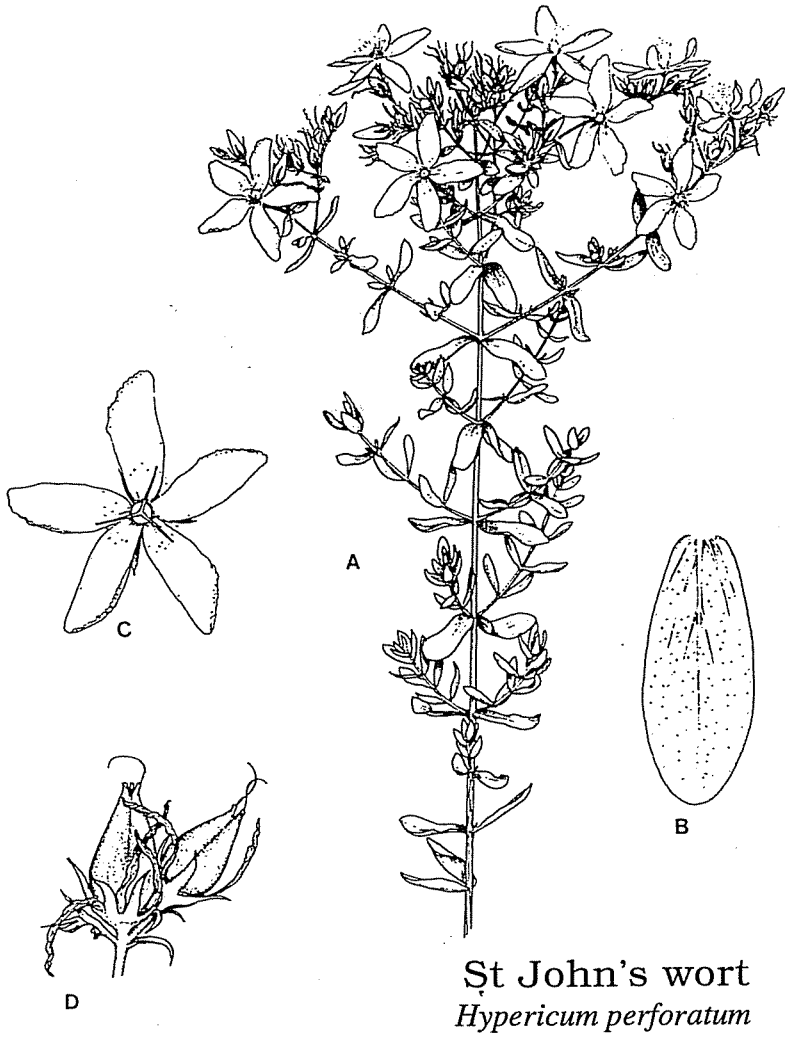
THIS ISSUE



St John's wort
Hypericum perforatum
A. Flowering branch B. Leaf C. Flower D. Seed capsules

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Adapted from Rural News - 23 October 1998

First state wort harvest

NSW has just seen an historic harvest of the exotic plant, St John's wort, which has otherwise been declared a noxious weed.

And the season, following widespread rain and flooding, was a big one for the fledgling business of Wild Herbs of Australia. So big, in fact, that the Department of State and Regional Development's former Agribusiness Development Officer, Richard Beach, took six months leave to act as general manager of the company to get the predicted $50 million St John's wort business up and running.

St John's wort is presently declared a noxious weed in 81 shires in NSW. It is also widely established on the NSW-Victoria border, where Mr Beach was visiting recently to consolidate the harvest in the south. "The reason wort is declared noxious is due to detrimental effects caused when livestock graze on the plant," Mr Beach said. "These include sunburn, abortion, dermatitis and, in extreme cases, death."

"These ailments in livestock are due to hypericin, the active constituent in the plant which induces these complaints. Ironically, this is the same active constituent that makes the plant of value as a natural medicine." Mr Beach told The Rural News that the aim was to fill an order for a minimum 500 dry tonnes of St John's wort this summer. There are markets for every tonne of the dried-down plant in Europe and the United States since revelations that Australia's natural stands of the introduced weed have the highest levels of hypericin in the world.

(Cover: From The Noxious and Secondary Weeds of Tasmania, 1980, Department of Agriculture, Tasmania)

Hypericin is currently used as a natural anti-depressant, being prescribed seven times more than prozac in Germany, with studies showing similar success rates with significantly less side effects.

St John's wort's main other active constituents include an anti-viral and healing component, expanding its use in treatment of Aids and other viral infections, as well as general ailments such as bruising, sprains, burns and the like. Mr Beach said that the Australian supply of hypericin is very much in demand in countries where it is regarded as a wonder drug.

"We've identified large areas where there are stands of wort suitable for harvest around Albury-Wodonga and over the border around Beechworth and Myrtleford," Mr Beach said. "We do not anticipate any problem sourcing wort from all of these areas. The south also has heavy pockets of wort around Tumut and Tumbarumba that we would like to secure as well." "We've established facilities at Mudgee, Blayney and Albury-Wodonga for receivals and drying."

Mr Beach said it will be important to harvest the hypericin when it is at a maximum, when the flower first blooms. "The harvest must occur as soon as the flower buds with the entire harvest completed before any seed appears," Mr Beach said. "Once the plant has stopped flowering the hypericin levels are dramatically lower, so much so that often farmers will allow their stock to graze it once the flowering period is over." "Flowering of St John's wort is usually the most dangerous time for livestock."

He said that farmers who are being drawn to harvest St John's wort have been fighting a tremendous battle with the weed but it is a losing battle on difficult country because seeds remain viable for 30 years. "The harvesting of St John's wort is seen as an alternative control measure to both chemical and biological control, which has been approved by NSW Agriculture."

Mr Beach said that the pioneering harvest of St John's wort near Coolah will hopefully present an opportunity for a field day, to enable farmers from other places to observe how to turn the weed to a profit. He said that Wild Herbs Australia, which is a subsidiary of a major natural products trading company, will guarantee the purchase of any St John's wort from 100 kg to 1000 tonnes.

Galapagos Islands seek international help

The Galapagos Islands - the world's most pristine tropical oceanic island ecosystem - is asking governments, institutions and individuals around the world to help protect its unique biological resources from quarantine threats.

The growth of tourism and associated migration to the islands over the past 15 years has brought about a dramatic increase in the number of introduced species in the islands, especially plants and insects - about 450 exotic plants, 24 vertebrates and many invertebrates.

The introduction of exotic species is the most serious threat to the conservation of the biodiversity of the Galapagos, and local institutes are eager to prevent further introductions.

To that end, the Charles Darwin Research Station, the Galapagos National Park Service, the Provincial Agricultural Office and other institutions, are working together to design a quarantine and inspection system for inter-island and continental transport.

These organisations are interested in learning about systems that have been successful in other countries and are particularly interested in strategies, monitoring programs to detect new introductions in ports of entry, agricultural and urban zones, training manuals for inspectors, prohibited and permitted product lists, inspection procedures and educational pamphlets.

Copies of articles, manuals or pamphlets would be greatly appreciated and can be sent to: Dr Charlotte Causton, Charles Darwin Research Station, A.P. 17-01-389, Quito, Ecuador (causton@fcdarwin.org.ec).

The Weed Society of NSW should have a particular interest in the Galapagos, because one of its members, Dr Mark Gardener, recently took up a position there as Investigator of Introduced Plants. Mark went to the Galapagos after completing his PhD on the biology and management of Chilean needle grass (*Nassella neesiana*) at the University of New England, Armidale, NSW, under the supervision of Associate Professor Wal Whalley and Dr Brian Sindel. The funding for Mark's position in the Galapagos is provided by Monsanto.

The Weed Society of NSW should have a particular interest in the Galapagos, because one of its members, Dr Mark Gardener, recently took up a position there as Investigator of Introduced Plants.

Mark relates that the threat of introduced plants is primarily to natural systems (97% of Galapagos is national park) but the agricultural zone also has significant weed problems. There are about 15 large islands in the Galapagos and four of these are inhabited. The problem of introduced plants is most serious on these islands. In 1996, 1057 plant taxa were recorded on the islands with 36% (378) being native, 22% (234) being endemic (the most well known being the tree daisy *Scalesia* sp.), and 42% (442) being introduced.

Of these introduced plants, about 10% are considered aggressive and are currently spreading. Mark is in charge (with Dr Alan Tye, his supervisor) of a project to investigate the control of the 13 most aggressive species using chemical methods.

These species are mostly woody but include some climbers, shrubs and grasses. They are *Psidium guajava* (guava), *Cinchona succirubra* (quinine), *Lantana camara*, *Rubus niveus* (blackberry), *Eugenia jambos* (lilly pilly), *Cestrum auriculatum*, *Passiflora edulis*, *Pennisetum purpureum* (elephant grass), *Cedrela odorata* (a timber tree), *Cordia alliodora*, *Ochroma pyramidale* (balsawood), *Caesalpinia bonduc* and *Kalanchoe pinnata*. Mark is trialing various chemicals such as glyphosate, triclopyr and picloram using different application methods. These include 'hack and squirt', basal-bark and foliar application for the smaller weeds. With this information, he hopes to write a control manual for these species.

Another project includes replacing invasive species in the agricultural zone with more productive and less aggressive species. The main species of concern in that zone is the blackberry (*Rubus niveus*). Currently, he is developing a program to replace blackberry-infested areas with pastures, timber plantations and agriculture. Although biological control of many of these species would be ideal, they currently lack the resources to do such things, he said.

Mark says that his department also has a large herbarium and deals with native plant conservation. On the invertebrate side of things, Dr Charlotte Causton is monitoring populations of cottony cushion scale (*Icerya purchasi*) with the eventual aim of biocontrol. They also have programs on the control of the introduced wasps (*Polistes versicolor* and *Brachygasta lecheiguana*) and the biting fly (*Simulium bipunctatum*).

New quarantine laws were passed in 1993 and have since been modified. Dr Charlotte Causton and Mr Carlos Zapata are responsible for recommendations of the regulations necessary to implement these laws.

(Anyone interested in contacting Mark can do so through his postal address at Estacion Cientifica Charles Darwin, Apartado Postal 17-01-3891, Quito, Ecuador or by email markg@fcdarwin.org.ec)

Society Website

We now have a website up and running at http://nb.au.com/nswweedsoc. Let the Secretary, Leon Smith, know what you think (contact details p2).

Executive Meetings

NB. Next meeting dates for the Society Executive are 5/2/99 (Novartis, Pendle Hill 1.30pm); 9/4/99 (same); and Riverina Branch 4/2/99 (5.30pm location to be advised).

Erratum

In the article 'Managing Vulpia in Permanent Pastures' by Mick Duncan in edition #15 of *A Good Weed*, the last sentence on p5 should have read *'This consisted of heavy (crash) grazing from November until mid December followed by a lock up of the paddock until early February to enable the introduced species to produce bulky growth'.*

Herbicidal control of bitou bush

By John Toth

Before large-scale aerial control of bitou bush could be considered, a number of experiments had to be conducted, starting with hand spraying and progressing to aerial control.

Hand spraying

Herbicide screening: Six herbicides were tested against bitou bush based on existing herbicide selectivity data for other woody perennial plants. A total of 15 trials were conducted at Moruya, Jervis Bay and Port Kembla between 1985 and 1988. Herbicides which either failed to control bitou bush or caused severe damage to adjacent native plants were excluded from further testing. Only Roundup® and Brush-off® proved sufficiently selective. The results also indicated that there may be a large, seasonal variation in the herbicide tolerance of bitou bush and of some native plants.

Time of application: To explore the possibility that herbicide sensitivity of bitou bush may vary seasonally, we applied either Roundup® or Brush-off® in a series of 16 experiments which were commenced at approximately six-weekly intervals. During the two year study, it became clear that some of the herbicide treatments were acutely toxic regardless of season. All 16 time-of-application experiments were located at Bherwerre Beach in the Jervis Bay National Park. The results show that bitou bush is at least twice as sensitive to Roundup® in winter, shortly after peak flowering than during the summer. No seasonal pattern emerged for Brush-off®.

Native plants: By the end of the first year of the time-of-application study on bitou bush, it had become obvious that the optimum time of year for spraying, and the preferred chemical, could depend on seasonal changes in the tolerance of native plants. We therefore conducted two experiments, one during summer and the other during winter, in which five native plant species were sprayed with either Roundup® or Brush-off®. Three rates of each chemical were used.

Penetrants: One objective of this research has been to minimise the quantity of herbicides used. Penetrants such as Pulse®, an organosilicone compound, are known to approximately double the transport of Roundup® into leaves. The result showed that the herbicide tolerance of coastal teatree was also reduced by the addition of penetrants in both summer and winter. This indicates that penetrants may prove useful in reducing spray rates; however, further research on selectivity is warranted.

Seawater: Storm damage to the canopy of bitou bush is frequent and the role of seawater in this phenomenon has been a matter of speculation. Furthermore, there are many beaches where fresh water is not readily available for spraying; consequently, bitou bush was sprayed with marginally toxic rates of Roundup® and Brush-off® diluted with either fresh or sea water. The result was that Roundup® was less phytotoxic with sea water (~5-10%), while Brush-off® was slightly more phytotoxic with sea water.

Aerial spraying

Herbicide rates and selectivity: By 1989, hand spraying indicated that winter applications of low doses of Roundup® may selectively kill bitou bush. Consequently, the first aerial application was planned for winter 1989, choosing herbicide rates that straddle those used by hand. Thus, the rates used in the trial were 3, 6 and 9 L Roundup® ha^{-1} and 50, 100 and 150 g Brush-off® ha^{-1}. All rates of both chemicals were toxic to bitou bush without causing measurable damage to coastal banksia, coastal teatree, coastal wattle, mat rush and coastal heath.

In 1991, we used 2 and 3 L Roundup® ha^{-1} and 40 and 50 g Brush-off® ha^{-1}. Again, the lowest rates of both chemicals killed >95% of the bitou bush.

Since 1992, 2 L Roundup® ha^{-1} has been used in control programs. In 1996, 1,100 ha were sprayed, in winter 1997 an area of 928 ha and, during winter 1998, 1,400 ha were sprayed. During these treatments, we and others have recorded the effects on 190 species of plants. In winter 1997, a large-scale comparison of Roundup® vs Roundup Bioactive® was conducted (19 locations). Results indicate that Roundup Bioactive® is more phytotoxic to some native species, e.g. *Scaevola calendulaceae*, *Carpobrotus glaucescens* and *Correa alba* than Roundup®. Early reports from 1998 spray trials indicate that *Myoporum boniense* has been damaged on two sites.

Integrated control: Where possible, biological agents are released near the aerially-treated sites and the chemical and biological control methods complement each other (e.g. Port Kembla Hill 60).

Acknowledgement

Until early 1997, this work was conducted while the author was employed by NSW Agriculture. John now runs an environmental weed management company in Parramatta.

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Good bugs fighting the 'curse'

Where have the Paterson's curse bugs gone? In response to such question accompanying the photograph in the October 9 edition of *The Rural News*, here is an explanation to where all the "good bugs" are for Paterson's curse and what has been happening with the program.

To date, there have been six insects successfully released for the biological control of Paterson's curse.

The first agent released was the leaf-mining moth, *Dialectica scalarielia*, which is now widespread through most Paterson's curse-infested areas. Damage from this moth has been dramatic in a few areas during drought periods, however, in general it has little overall impact on Paterson's curse as its activity is limited by cold winter months.

Biological control of Paterson's curse, on its own, will not bring the weed under fast control...

The most spectacular agent has been the crown boring weevil, *Mogulones* sp., which has established at over 200 sites nationwide. Weevil larvae cause nearly all the damage, feeding in the root crown of Paterson's curse rosettes from autumn to spring. The largest build up of weevils has occurred in the Riverina, particularly near Yanco. At these sites, the weevil is having a devastating effect on whole paddocks of Paterson's curse plants, killing up to 90 per cent before flowering and leaving only a few of the smallest plants alive.

This year, in these paddocks, the weed has been overtaken by grass and is hardly noticeable. The site has developed to the point where the weed has to be deliberately encouraged to maintain a source of agents for a nationwide redistribution program.

A close relative, the root weevil, *Mogulones geographicus*, was released in 1993 but, so far, numbers have only been available to establish *M. geographics* at a limited number of sites. Feeding in the lower root, the grubs of this weevil are better protected from grazing than the crown weevil and should be even more effective in continuously-grazed pastures.

The Paterson's curse stem-boring beetle, *Phytoecia coerulescens*, was the next insect to be released in 1995. This insect is active and lays eggs into the stems in late spring and has proved easy to establish at several sites.

Unfortunately, most damage by the grubs occurs after some seeds have been produced and as this agent has the least impact on Paterson's curse, it will not be actively redistributed until the more damaging insects are widely distributed.

The flea beetle, *Longitarsus echii*, released in 1996, has also established at a number of sites. This insect also attacks the roots and can feed in the smaller secondary roots, thus complementing the damage caused to the taproot by the root weevil. The flea beetle has the added advantage of not becoming active until winter, which enables it to survive long dry summers and autumns in the paddocks where Paterson's curse only germinates in late autumn. This agent will also be redistributed over the next few years.

The flower beetle, *Meligethes planiusculus*, released in 1996, has established at some closely monitored sites. It feeds as adults and grubs directly in the buds, flowers and immature seed of Paterson's curse. Attack by this beetle has been measured to reduce seed production by up to 60%. Redistribution will begin this season.

At this stage, it is still too early to assess the level of damage of most of these agents and the overall impact on the weed, although the crown weevil is now killing rosettes at several sites across NSW.

Once the other insects have had time to establish large populations, their impact on Paterson's curse will be measured in the field. As the insects attack different parts of the plant at different stages of plant growth, their combined attack should have a greater impact on Paterson's curse than alone.

The biological control program for Paterson's curse is now concentrating on redistributing the agents to establish them across the entire distribution of the weed. The crown weevil is the most readily available and has already been released at over 500 sites Australia-wide.

In the coming years, all insects will become available on this scale through State departments. This work is being funded by the Woolmark Company, Meat and Livestock Australia, the CRC for Weed Management Systems, CSIRO and collaborating State Agriculture Departments from NSW, Victoria, South Australia and Western Australia.

The agents must be considered as an integral part of an overall management strategy for Paterson's curse which would include other control methods such as herbicide application, grazing management, cultural and mechanical control. Biological control of Paterson's curse, on its own, will not bring the weed under fast control; current control measures must be continued.

Biological control is also a long-term process and, although some of these agents have been in the field for more than 5 years, it takes time for them to establish, build up in numbers (especially in the face of droughts and floods) and then be redistributed to other Paterson's curse infestations.

It is in this redistribution process that individual farmers, Landcare and other groups can have the greatest impact by promoting insect survival. By taking on responsibility for a release site, monitoring and ensuring that the agents are spread to other areas where they are needed, the distribution process can be speeded up dramatically.

One last important fact to remember is that the plant has been around for over a century, dropping seed and establishing enormous seed banks. These seed banks will continue to produce the same levels of infestation of Paterson's curse that we see today for at least the next ten years. Therefore, it's going to take "all the bugs" at least a proportion of that period to make an impact - so, if it doesn't work the first year, don't write it off - it takes time.

So, to answer the question "what has happened to all the good bugs that were going to help us get rid of Paterson's curse?" - the bugs are coming!

Contact Matthew Smyth at CSIRO Entomology on (02) 6246 4249 or Barry Sampson at Yanco Agricultural Institute, NSW Agriculture, (02) 6951 2623.

(Adapted from Rural News 23/9/98)

Wild oats biology and dynamics of seed banks

The longevity of wild oats (*Avena* spp.) seeds is quite a vexed question. Contrary to common belief, all of the evidence from the northern grain region shows that wild oats seeds are relatively short-lived. Quail and Carter (1968) recorded that few seed (of either *A. fatua* or *A. ludoviciana*) buried in soil remain viable after 18 months. In their studies, primary seed appeared to be shorter lived than secondary seed. No seeds survived on the soil surface, virtually no seed survived after four years in pots buried outdoors, irrespective of depth of burial or soil disturbance treatments.

From these studies, it is concluded that wild oats seeds do not persist for long periods, with a half-life of around six months. In seed bank dynamics terms this means that, provided no new seed is deposited, half the seed is depleted in six months, 75% in 12 months, more than 92% after two years and, hence, the seed bank will virtually be exhausted after three

years. This is supported by data from Phillpots (1975) and Martin & Felton (1993) showing reductions in seed banks of 99.6% and 95%, respective, as a result of summer cropping with two consecutive winter fallow cycles.

The management implications are that if seed input is reduced, seed banks decline rapidly. The key to successfully managing wild oats is, therefore, to prevent seed production. This can be achieved by rotating to summer crops which involves winter fallowing, rotating to pastures, forage cropping, long fallowing or the use of selective spray-topping.

(Extracted from Wild oat biology and dynamics of seed banks by R.W. Medd from NSW Agriculture and reprinted in the newsletter of the Weed Society of Qld, Spring 1998).

Saffron thistle soon to suffer

By Ursula Taylor

Saffron thistle costs the Australian agricultural industry $111 million annually. It is the most abundant and widespread weed in New South Wales. Research aimed at understanding the life cycle of saffron thistle and how to control it is heading in the right direction for assisting producers to reduce costs.

Cooperative Research Centre for Weed Management Systems PhD student Blair Grace, from the University of New England, is working out ways to manage saffron thistle to keep the cost of control down. It is still early days for the research but results are promising.

Blair is looking at the growth stages of saffron thistle to find out when it is most vulnerable to grazing pressure and pasture competition.

"Saffron thistle germinates in autumn and plants remain as rosettes (or small plants) until early summer. Right now we know that spring is the best time to remove young saffron thistle plants by spraying the paddock first with a herbicide approved for spray-grazing, then grazing, sheep, cattle or goats one week later. The effect on saffron thistle is spectacular! It practically knocks it out" says Blair.

Useful information on the number of saffron thistle seeds in the soil has been obtained. "Results have shown that the soil seed bank of saffron thistle may contain over 3000 seeds m^{-2}. This is a major problem for graziers, particularly if paddocks have been overgrazed or there is bare ground, as thistles are the first to come back after good rain. Infestation can be avoided, however, as competitive pastures can suppress thistle germination and growth".

Blair aims to finish his studies in two years, by which time enough will be known about saffron thistle in pastures to keep this weed at bay (hopefully).

Ursula Taylor is a Weeds Education Officer, Cooperative Research Centre for Weed Management Systems, University of New England, Phone: 02 6773 3075, Email: utaylor@metz.une.edu.au

Weedbuster week 1998 report

By Bob Trounce

Weedbuster week has gained considerable momentum since its launch as a national campaign last year. Although the national launch for Weedbuster '98 (11-18 October) took place on the far side of Australia, at Kings Park, Perth, there was still plenty of interest in the east for the many functions planned.

The New South Wales state launch was carried out by Mrs Mary Moodie, presenter with *Gardening Australia* (ABC TV and Magazine). The function was held in the main thoroughfare of the Metro Plaza, Orange.

Registrations

Over 150 coordinators registered around New South Wales to promote Weedbuster Week. As a result of some of these registrations, Woody Weed - the mascot for Weedbuster Week - started the busy campaign in September by visiting all primary schools in Orange City and speaking to over 1000 children, encouraging them to become Weedbusters.

During Weedbuster Week, Woody attended the State Launch in Orange, met Kerry-Anne Kennerley on the Midday Show in Sydney, spent hours in the Wagga Wagga Market Place speaking to children, visited Estella Child Care Centre and the Haven Retirement Village. Woody posed for publicity photos at Coolamon Shire Council Chambers, took two classes on a forest weed walk, visited Coolamon Central School and spoke to students, travelled to Westfield Figtree for a shopping centre promotion, visited McDonald's restaurants, and went on a weed walk at Willans Hill.

Woody's cousin from northern New South Wales had similar duties, standing guard over a progressively changing static display at the Murrurundi Library from September, then visiting Merriwa School, Murrurundi Fair, Willow Tree School, Blandford Primary, Murrurundi Primary, Blackville and Mt Perry Primary students, and attending two field days on goats and sustainable grazing.

Publications

This year, two posters were prepared, one explaining Weedbuster Week and one showing plants that harm our health. A total of 2,800 Weedbuster Week posters and 3,500 human health posters were sent out to all State coordinators around Australia, as well as to all who registered in NSW. The posters were direct-mailed nationally to all Mitre 10 stores and IAMA Rural outlets. McDonald's restaurants also were supplied with sufficient to supply all restaurants in NSW and the ACT. Four new weed bookmarks were also produced to extend the message these popular items related.

Publicity

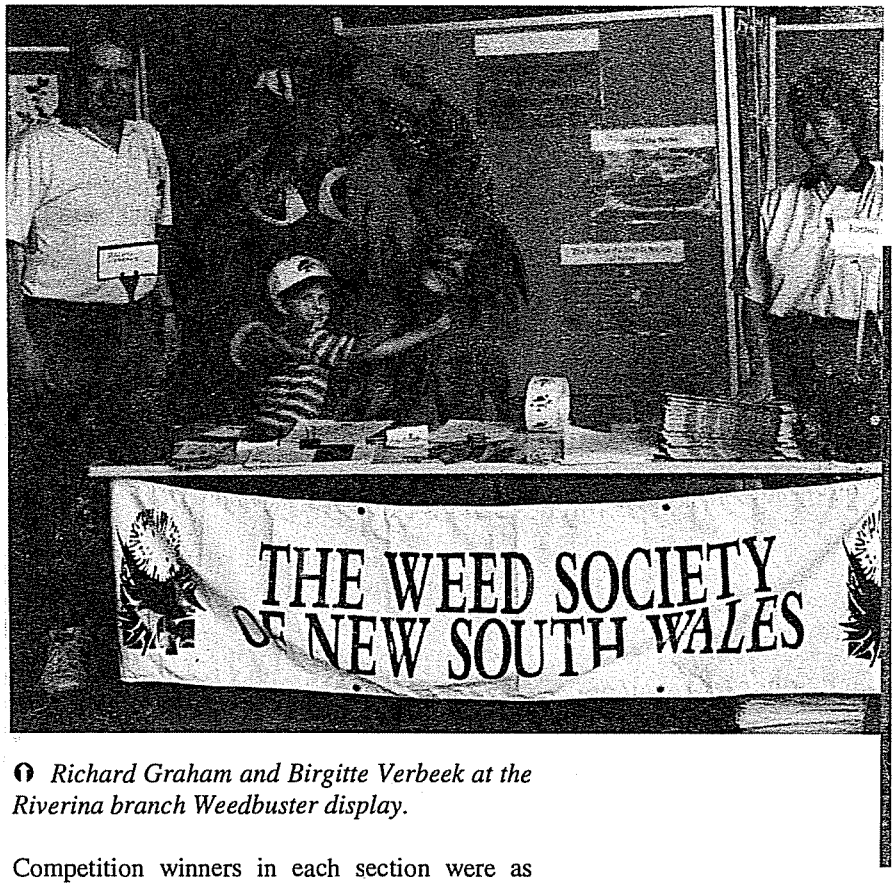
As in previous years, the regional media gave great support in all areas where coordinators had made contact. Gardening programs such as Reg Kidd (2CR) and Shirley Stackhouse (Sydney) and many city and country newspapers gave mention to Weedbuster.

The big difference this year in publicity came with a breakthrough into national media. With the support of Mary Moody, Gardening Australia presented a number of weed segments on Friday 9 October, as well as promoting Weedbuster Week. The appearance of Woody Weed and Bob Trounce on the Midday Show on Tuesday 13 October, was also acclaimed as a successful event. Not only was the live audience intrigued with the weed segment during the show but they also proved difficult to remove from the studio afterwards due to their continuous stream of questions about weeds in their own environments.

Competition winners

New South Wales competitions this year were divided into three age groups. High school students were invited to enter an Herbarium Collection Competition and primary students were given the task of producing a poster for Weedbuster Week in two age groups - Under 8 and 9-12 years.

Competitions this year were designed to make minimum demand on council and school resources in terms of photocopying and maximum demand on students. It seems, because of this, coordinators were disappointed with the response. Thanks are again extended to DuPont Agricultural Products for their generous sponsorship of these competitions.



Richard Graham and Birgitte Verbeek at the Riverina branch Weedbuster display.

Competition winners in each section were as follows:

Poster competition

Total entries 514

Under 8 Years

NSW Winner - Hannie Choi ($100); School - Chatswood Primary ($200); Highly Commended - Kara Grant, Armidale City Public School.

9-12 Years

NSW Winner - Michael Mckinley ($100); School - St Joseph's, Gloucester ($200); Highly Commended - Erin Twomey, St Joseph's, Gloucester.

Herbarium collection

Total entries 29

NSW Winner - Luke Ingenhoff ($200); School - Hurlstone Agricultural High ($200).

Congratulations to these winners and thanks to all who worked to promote the competitions and ensure entries were received on time. Also, thank you to all students who participated.

Weedbuster Week is well established and sure to enjoy future successes with the support

now offered by the community, providing there are some coordinators willing to get the ball rolling.

Special thanks

A successful Weedbuster Week promotion is the result of a team effort and coordinators around the State have done a great job disseminating information and enthusing children to become Weedbusters. Local Government, State Government and community groups have combined efforts to promote the understanding of weeds and effective controls. Thankyou all.

I particularly appreciated the help of Roger Smith for his local assistance and ideas, Jim Quin for assisting with the Sydney displays, and Eraina Swain and Naomi Gillette for clerical and mailing assistance. Finally, special thanks to Julie Pont and her art team who never fail to come up with great ideas for promotional material.

National sponsorship by Roundup Weedkiller has been of assistance in many facets of the promotion, particularly by contribution to posters which were distributed nationally.

(Bob Trounce is Weedbuster Coordinator for NSW)

Winning poem

During Weedbuster Week, John Colwill ran a weed poetry competition on his Victorian ABC Radio Gardening programme. The winner was Lin Brown and she received a copy of Western Weeds for her labours. Here is her winning poem:

If you want a plant that doesn't need
- water
- or fertiliser
- or pruning
- or spraying
- or constant care, THEN GROW A WEED

If you want a plant that you cannot
- over water
- under water
- over feed
- or overlook, THEN GROW A WEED

If you want a plant that will grow
- in full sun
- in full shade
- in clay
- in sand
- in a crack in the path
- in your roof gutters
- in saline soil
- in the most expensive of garden soils
- in strong winds
- in complete shelter
- in a wet spot
- in a dry spot, THEN GROW A WEED

If you want a plant that
- insects will never eat
- weedkillers will never kill
- your lawn will never choke
- mowing too close will not destroy
- you can drive your car over and not flatten
- diseases will not kill
- will faithfully come up year after year
- will never fail to flower or set seed
- will survive complete neglect
- will never disappoint you, THEN GROW A WEED

Interested? Then come and see me. I have a garden full of weeds to give away. All varieties, all sizes from seeds to established plants available. Free to a good home!

(Reprinted from Weedscene, Vol. 9 Issue 5)

Members Matter

Welcome to the following new members:

John Baker, Finley,
Clare Bentley, Uralla,
Scott Boyle, Wagga Wagga,
Environment Australia Library, Canberra,
Judy Frankenburg, Howlong,
Robert Mather, Mosman,
Gertrand Norton, Wagga Wagga,
Alison Pitman, Canberra,
Bob Thurling, Wagga Wagga, and
Pam Vipond, Bega.

CAWSS medal for Dr Deirdre Lemerle

Dr Deirdre Lemerle was presented with a Council of Australian Weed Science Societies (CAWSS) Medal by Jim Swain at the Annual Dinner of the Society held at Duntryleague, Orange on Thursday, 29th October, 1998.

Dr Lemerle is currently Senior Research Scientist and Program Manager of the Cropping Program of the CRC for Weed Management Systems with NSW Agriculture at the Wagga

Wagga Agricultural Institute. Dr Lemerle was nominated by the Society because she has made an outstanding contribution to the science, technology and practice of weed management through several areas including, research, administration, extension and implementation of programs.

Research - Dr Lemerle has carried out an active research program at the Agricultural Research Institute, Wagga Wagga for over 17 years. She has investigated a wide range of topics including, the biology and control of silverleaf nightshade, herbicides for alternative winter crops, differential tolerance of crop cultivars to herbicides, herbicide-environment interactions, competitive abilities of crops against weeds, and more recently has been monitoring the shifts in weed populations of the southern wheat belt. She has published 18 scientific publications, 9 international conference papers (refereed) and 24 technical and extension conference papers about her research findings. Over the past 10 years she has consistently received industry support for her research programs at an annual average rate of $100,000. Dr Lemerle has travelled extensively overseas visiting colleagues and research institutes in many countries.

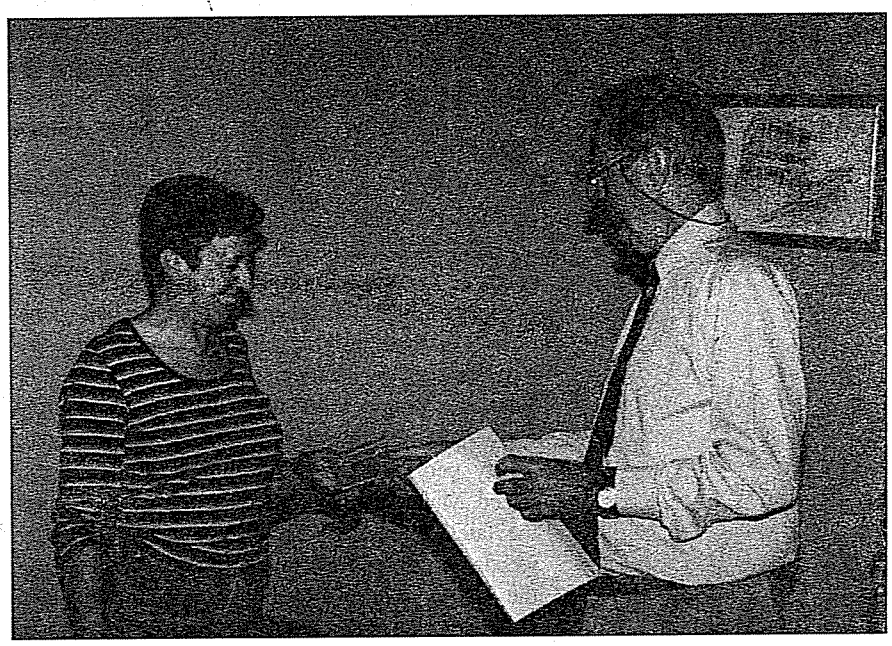
Administration - Dr Lemerle is in charge of several scientists and students at Wagga Wagga and has been seconded on several occasions (Acting Director of Regional Research) to administer regional research programs in NSW Agriculture. She has maintained liaison with research workers in other states and overseas and has developed strong links with industry, universities, CSIRO, the Grains Research and Development Corporation, and farmer organisations.

Extension - Dr Lemerle has maintained contact with the farming community to identify emerging problems and to promote the results of her research. Each year she has actively displayed her research results at Wagga Wagga field days and has been involved with the weed extension programs of NSW Agriculture. She has published seven advisory articles for NSW Agriculture and contributed over 20 articles to other industry and grower magazines.

Implementation of Programs - Dr Lemerle is now Program Leader of the Cropping Program for the CRC for Weed Management Systems and as such has been involved with several programs of the CRC. Also, she has been actively involved with industry assisting them with their programs on herbicide resistance and cereal tolerance to herbicides.

Dr Lemerle's work has been outstanding in that it has been recognised by her fellow weed scientists as exemplary in substance, objectives, methods and results. She is recognised overseas as an authority in her area and is well respected by the chemical industry for her integrity and soundness of research method. Dr Tang Hong Yuan from China recently spent several months with her examining weeds in the southern wheat belt of NSW.

Deirdre Lemerle being presented with the CAWSS Medal by Jim Swain.



Dr Lemerle has had considerable impact on the work of others. This has mainly been through her liaison and involvement with other scientists both nationally and overseas, and as well she assisted students at Sydney University with their research programs, especially after Dr Roger Cousens left the University in 1994. She currently has several students doing Master's and PhD programs in the CRC for Weed Management Systems.

Dr Lemerle has been an active member of the Weed Society of NSW for 16 years. She was recently involved in the formation of the Riverina Branch. In addition, Dr Lemerle was editor of the newsletter of the Weed Society of NSW and an executive member for 5 years and she co-edited the Proceedings of the 7th Australian Weed Conference in 1987. She has been the recipient of a travel grant from the Society on two occasions to assist with visits to the UK. She also referees papers for several journals and is a member of the Australian Institute of Agricultural Science, Weed Science Society of America, Weed Science Society of Victoria and the International Weed Science Society.

Annual Report - 1998

The Society enjoyed another successful year. Twenty two new members joined during the year and membership of the Society is now around 340. The newsletter, *A Good Weed* continues to be produced at a high standard by Brian Sindel and many enquiries are received from people just wanting to receive copies of it. This year a membership details booklet was produced by Mike Hood containing information about the qualifications, employment details, location, years of experience, contact details, weed perspective and interests of members. It will be updated on a yearly basis and should prove to be a valuable tool for people seeking information from members on specific weed issues.

Liaison with the nursery industry continues on matters relating to environmental weeds and criteria for defining them. It was hoped to jointly sponsor a workshop/seminar for the NSW Nursery Industry Association, but this had to be postponed until a later date. Weed prizes were awarded at the University of New England, Charles Sturt University and at Sydney University. These are now valued at $100 each. Thirty people attended a seminar on 'Precision Weed Management' at Orange which illustrated the latest technology for mapping and spraying weeds, presented by a visiting weed scientist from the USA. Unfortunately his counterpart from Denmark was incapacitated at the last minute and could not attend.

The Riverina Branch of the Society continues to flourish under the guidance of Richard Graham and Birgitte Verbeek. During the year they jointly helped organise the Wagga Weeds Expo at the Agricultural Research Institute in October 97, held a dinner and AGM in Albury with speaker on environmental weeds in April 98, put up a display at the Agronomy Conference in July, held a meeting and dinner with visiting Canadian speaker Bob Blackshaw at Culcairn in August, organised the Willans Hill Weeds Walk in October 98 and have a program of events arranged for 1998/99.

The Society commissioned a poster on Plants Affecting Human Health for Weedbuster Week held during October 1998 and obtained funds ($1000) from CAWSS to assist with its production. The poster was distributed all over Australia during this week. An award for weed identification at the Biennial Noxious Weeds Conference in September, 1997 at Dubbo was sponsored by the Society and it is negotiating to sponsor another award at the next Conference at Ballina in 1999. A group of members of the Society participated in a discussion with the review team on amendments to the Noxious Weeds Act 1993.

A computer package was purchased for the Secretary and an Email address established. A home page and website for the Society is under construction on the Internet. The Annual General Meeting of the Society was held at Orange on October 29, 1998. This was associated with a visit to the scientific collections at Orange Agricultural Institute, plus a seminar on plants affecting human and animal health, as well as the Annual Dinner at Duntryleague. Deirdre Lemerle was presented with a CAWSS medal for leadership in weed science at the Annual Dinner by Jim Swain.

Summary of the Minutes of the 33rd AGM of the Weed Society of NSW

Treasurers report: The audited accounts of the Society for the period 1/10/97 to 30/9/98 were tabled by the Treasurer and a copy is held by the Secretary. A trading loss of $1,203 was reported for the year. Accumulated/Consolidated funds as of 30/9/98 were $25,000 in short term deposits, computer equipment $2,429 and cash at bank $5,060, a total of $32,489 compared to $33,692 in 1997. A proposed budget for 1999 was tabled. The matter of sponsorship was raised and only one of two sponsors has paid up so far.

Election of office bearers: All positions were declared vacant. The following were elected as office-bearers of the Society for 1998/99:
President: *D Austin* (R Trounce/J Swain)
V. President: *R Graham* (R Carter/J Swain)
Secretary: *L Smith* (J Toth/R Graham)
Treasurer: *A McLennan* (J Swain/A Murphy)
Newsletter Ed: *B Sindel* (M Boulton/J Toth)
Committee: It was proposed that the same people who were on the Executive Committee as last year be invited to join the 1998/99 Committee. Three people stood down from election (P Michael, G Beehag and J Mallen-Cooper). The following have indicated a willingness to continue on the committee: M Barrett, A Murphy, R Trounce, M Hood, R Plumbe, V Stubbs, L Brodie, M Ierace, L Greenup, R Graham, J Dellow, G Harding, J Toth, M Boulton, and G Tink. It was resolved that these people be on the Executive Committee for 1999 (A Murphy/M Boulton).

New members elected: L Streit (J Swain/J Toth), R Carter (R Graham/B Verbeek), and S Sutherland (D Austin/ R Graham).

It was resolved that a formal vote of thanks by way of letter be sent to the newsletter editor, Brian Sindel for his untiring efforts in producing the newsletter (R Graham/L Streit). Efforts are to be made in 1999 to look for another editor as Brian has indicated he would like to be relieved of the position next year.

CAWSS report: There have been two phone meetings in 1998. Agenda items: CAWSS Handbook of Economic Plants prepared by Richardson and Shepherd; Financial Report - closing balance at 30/6/98 was $61,942 plus $22,000 on loan; International Weed Risk Assessment Workshop (J Virtue); CAWSS Medals were awarded to Deirdre Lemerle and Marcus Blacklow; Australian weeds database being investigated; liaison between CAWSS and the horticultural industry (Kate Blood); Student Travel Grant was awarded to Paul Adams, Tasmania; CAWSS supported Weedbuster Week activities ($1,500); joint meeting between CAWSS and WSSA not supported by Societies; 12th Australian Weeds Conference in Hobart, 1999; and CAWSS home page to be updated with Societies connected.

Presidential address: The President spoke about the growth of the Society over its life of 33 years and the dedication of the people who have worked to keep the Society growing. There was a need to get young weed scientists involved so they could take over in the years ahead. The new Riverina Branch at Wagga Wagga was an excellent development and the President hoped that he could start another branch in the north of the State this year. Also, he stressed that the Society needs to keep abreast of information technology developments and to keep the newsletter going at a high standard. He specifically asked people to provide articles and to list any interesting websites they found for the newsletter.

Other business: i) The motion on notice about changes in the fees was amended and carried. It was "That the annual membership subscription of the Society be increased to $30 and student membership to $15. However, the Society offers new and current members the opportunity to pay three (3) years subscription for $80 covering the years 1999, 2000 and 2001. The following conditions will apply: i) a current member must have paid the preceding year and be considered a financial member (no arrears due), ii) no refunds are intended and prepayment will be accounted for in the nominated financial year".

Leon Smith, Hon Secretary, 4/11/97.

Deletion of subscribers!

The Society has gone through the membership list and has decided to delete those who have not paid a subscription for 2 years. If your name is among the following then this applies to you! This will be your last issue of *A Good Weed* unless you rectify your subscription position post-haste.

W Barnett-Smith, RH Colless, M Drew, GS Fraser, A Gessell, DA Goldrick, AR Heckendorf, H Heffernan, M Hunt, S Jeffery, R Jetner, L Korzeniowski, S Lawler, DC Lawrence, M Mcrae, K Mazenaur, H McFadden, S Moore, D Reid, M Rodgers, J Roxburgh, R Rundell-Gordon, J Ryan, W Shelton, M Snodgrass, P Thomson-Brooks, CA Whittemore, J Wilding, K Yeend, B Kearsley, and M Longworth.

Please contact the Secretary (p2) for payment details.

Editorial comment

This edition of *A Good Weed* will probably be the last that I put together since there has been a volunteer (congratulations to Jim Dellow and others in NSW Agriculture at Orange) to take over the task for 1999 and beyond. I have enjoyed editing the newsletter and contributing to the Society's activities in this way. It has been great experience and I recommend it if you have the time! Thankyou to all of those people who have either encouraged me in some way or provided material for publication, which always makes the task easier. I particularly acknowledge the support of Leon Smith and Alex McLennan.

The first memories that I have of weeds were of bindii in bare feet from our lawn at home as a young boy. My father and mother, however, were dedicated gardeners and worked hard at removing this weed and others like it. Some 30 years on, through a combination of spraying and replanting with competitive buffalo grass, the lawn no longer has any bindii in it. So weed control can work! The key ingredient, I believe, was persistence! My father and mother, now nearing 80, provided me with a good example of that.

They also taught me many things from the *Good Book*, and I leave you with a quote:

As the weeds are pulled up and burned in the fire, so it will be at the end of the age....The person who has ears, let them hear. (Matthew's Gospel 13: 40-43).

Now there's a *Good Read!* *Ed.*

Other 'Good Reads'

Precision Weed Management in Crops and Pastures

Edited by RW Medd and JE Pratley
Proceedings of a workshop held May 1998 - includes contributions from Australian, US and European researchers, 160 pages, paperback.

Inside you will find information on issues such as: developments in precision weed management, what do we know about the spatial distribution of arable weeds, remote sensing and opportunities for mapping pasture weeds, opportunities for satellite and airborne remote sensing of weeds in Australian crops, technology for patch-spray of weeds, reflectance techniques in precision weed management, global positioning systems, economic feasibility of precision weed management, and outcomes for research.

Cost is $40 including postage and handling within Australia. Visa, Mastercard and Bankcard accepted, cheques made payable to CRC for Weed Management Systems. Fax or mail your order to CRC for Weed Management Systems, Waite Campus, University of Adelaide, PMB 1, Glen Osmond SA 5064. Fax: +61 8 8303 7125, crcweeds@waite.adelaide.edu.au

NRA Chemical Database

The national database of agricultural and veterinary chemicals has been made available online by the National Registration Authority for Agricultural and Veterinary Chemicals (NRA). The test release of the NRA PUBCRIS database contains details of all agricultural and veterinary chemical products which are registered for sale and use in Australia.

The database is still under development and is updated nightly. It includes product names, registering company, active constituents, product formulation, registered uses (host/pest combinations), and the product's classification as either an agricultural or a veterinary product. Searches can be made on Company, Product, Active, Host, Pest and Category.

The database can be accessed at http://www.dpie.gov.au/nra/pubcris.html.

Management of Agricultural and Veterinary Chemicals - A National Strategy

Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ), 1998. 60 pp. ISBN 0 642 47502 4.

If you wish to receive more information or obtain a copy, contact the Ag and Vet Chemicals Policy Section of the Department of Primary Industries and Energy. Phone: 6272 5405; Fax: 6272 5899 stanford.harrison@dpi.gov.au http://www.dpie.gov.au/dpie/armcanz or

A Guide to the Introduced Marine Species in Australian Waters

The more than 70 species of marine organisms that have been introduced to Australian waters are described in this guide. Diagrams and photographs are provided to enable identification. Both native range and known Australian distribution are also provided. The guide is produced in an open-ended format to allow for the inclusion of additional information and new species supplements. Each section is provided with a notes page for the reader's own use.

Update and supplements will incur a small charge. Addenda will be produced periodically. The guide costs $50 per copy ($45 plus $5 for shipping and handling).

For further information contact: Susanne Spinks, Centre for Research on Introduced Marine Pests, Division of Fisheries, CSIRO, GPO Box 1538, Hobart, Tasmania, Tel (03) 6232 5452; Fax (03 632 5485; E-mail: spinks@ml.csiro.au.

Crop Protection Compendium

Overcoming a daunting challenge, CAB International researchers, editors, and programmers have organised and prepared a massive knowledgebase as a CD-ROM that surely ranks among the most comprehensive global sources of crop protection data currently available. The first module of the Crop Protection Compendium, while emphasising Southeast Asia and the Pacific, provides quick access to detailed, illustrated data for major insect and weed pests associated with 150 important world crops, plus natural enemies, regional distributions maps, and extensive data, all in colour. The cleverly designed system incorporates a linking system that allows users to switch between a raft of informative screens and resources. A free, fully interactive demonstration Windows version of Module 1 is available. Work is well along on Module 2 containing

additional information. A "compendium tour" can be down-loaded from: <pest.cabweb.org/cpc/cpchp.htm>.

FMI: CAB International, Wallingford, Oxon OX10 8DE, UK. E-mail: <cabi@cabi.org>. Fax: 44-0-1491-826090. Phone: 44-0-1491-832111.

Upcoming Events

2nd Australian Conservation Farming Conference - Keeping our land vibrant

15-19 February 1999, Rumours International, Toowoomba, QLD

For farmers, agricultural advisers and service providers, government extension and research personnel.

The programme will include a regional field trip, a two-day conference and a tour throughout the Border region of Southern Qld and Northern NSW. You will hear speakers from Australia and overseas present the latest advancements in profitable and sustainable farming systems, minimum tillage, land degradation, improving yields, soil health, savings in labour and machinery costs, soil biota, fertiliser application, stubble management, quality assurance, opportunity cropping, climate forecasting, weed control, herbicide resistance, controlled traffic, global positioning systems and future directions in conservation farming.

Enquiries may be forwarded to: Michael Burgis or Ben Wilshire Conservation Farmers Inc PO Box 1666 Toowoomba Qld 4350 Ph: 07 4638 5356 Fax: 07 4632 2689 Ph: 07 4638 5399 Fax : 07 4638 5032 Email: mikeb.cfi@iname.com or ben.cfi@iname.com

52nd NZ Plant Protection Conference

10-12 August 1999 Auckland, New Zealand. Contact: A. Rahman, Ruakura Agric. Research Centre, PB 3123, Hamilton, New Zealand. Fax: 64-07-838-5073. Phone: 64-07-838-5280 Email: <rahmana@agresearch.cri.nz>.

12th Australian Weeds Conference

12th to 16th September 1999, Wrest Point Convention Centre Hobart, Tasmania
CALL FOR PAPERS/POSTERS
Abstracts of papers and posters due -1 March
First draft of papers due - 1 May 1999
Final version of papers due - 1 August 1999
Early bird registrations close - 30 June 1999
Registrations close - 10 September 1999

A Conference registration brochure will be available from 1 March 1999.

If you have not yet done so, register your interest now by sending your contact details to Conference Design (Fax: 03 6224 3774 Email: mail@cdesign.com.au).

The indicative registration fee is around $400 (with discount for Society members).
For further information as it comes to hand, visit the web page at: http://www.cdesign.com.au/tasweed/TWSWEB01.htm

Prepare and submit an abstract of your proposed paper or poster by 1 March 1999.

If you need to discuss the suitability or format for papers and posters, please contact Andrew Bishop (phone 03 6421 7634; fax: 03 6424 5142); Andrew.Bishop@dpiwe.tas.gov.au

17th Asian-Pacific Weed Science Society Conference

22-27 November "Weeds and Environmental Impact," Bangkok, Thailand. Contact: S. Chinawong, Dept. of Agronomy, Kasetsart Univ., Chatuchak, Bangkok 10903, THAILAND. E-mail: <agrsbc@nontri.ku.ac.th>. Fax: 66-2-579-8580. Website: <aggie.kps.ku.ac.th/APWSS/index.html>.

Third International Weed Science Congress

6-11 June, 2000 Foz do Iguassu, State of Paraná, Brazil

The International Weed Science Society,

To be included on the mailing list for circulars and call for contributions, contact the Secretariat: P.J. Eventos - Feiras e Congressos, Rua José Risseto, 1023, Santa Felicidade - CEP 82.015-010, Curitiba - Paraná - Brazil. Phone/Fax 55 (0)41 372 1177 Email: pj@datasoft.com.br Home page: http://www,foztur.com.br.twsc

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