Volume 13 Issue 3

Weedscene

MAY 2002 Newsletter of the Weed Society of Victoria Inc.

ACN: A0011723W ABN: 15 496 325 152 Print Post Approved – Publication Number 310279/00029

CAWSS
Annual Young Weed Scientist Travel Award

The Award will be made available annually, or less frequently depending on the standard of applications. Applications are invited from young weed scientists to attend national or international conferences or for specific overseas study tours of a short duration. The applications are to be submitted annually to CAWSS by affiliated societies. The Young Weed Scientist Travel Award will be made by 1st July each year for the following 12 months.

The Award will be made to undergraduates studying in the fields of agriculture, biology, ecology, horticulture and forestry or related subjects, who have a wish to continue their studies in weed science. It will also be made to young weed scientists who have recently (within five years of finishing their degree) commenced employment in any branch of weed science. The Award will be open to anyone residing in Australia, but members of Societies affiliated with CAWSS may be given preference.

The Young Weed Scientist Travel Awards will be worth up to $2000 per annum. Awards are not expected to cover the total cost of the conference or study tour and it will therefore be necessary for an applicant to ensure that other funding is available.

Applicants attending conferences will be expected to give a presentation at the conference and to submit an abstract of their paper with their application. On return, the successful applicant will be expected to give a report to the nominating Society, either as a written report for the newsletter or as part of a seminar, meeting or workshop conducted by that Society. It will be part of the successful applicant's duty to pass on as much information as possible to the nominating Society and it is the right of the Society to specify the format of the report. Applications are to be forwarded by 1st May each year to the Secretary/Treasurer of CAWSS. Application forms will be available from the secretary of each Society.

WSV plans major conference

Following extensive consultation, the Weed Society of Victoria has decided to initiate a series of major weeds conferences in Victoria. These will be run every two years and will provide a forum for those working in weeds to discuss and review major weed issues in the State. It will also provide an excellent source of information to weed workers as it will act as a major information exchange centre. Where possible the Society will liaise with other environmental organisations to ensure that this conference is relevant to a wide cross section of the environmental movement in Victoria.

The first conference in this series is planned for August 2003 and will be held in a major regional centre, probably Bendigo. The organising committee would appreciate responses from Society members about the content of the conference.

The world's largest weed database

The WA Department of Agriculture and a visiting American biologist have joined forces to build the world's largest database of plants specialising in weeds. Department weed scientist Rod Randall and biologist Philip Thomas from the Hawaiian Ecosystems at Risk (HEAR) project are building the Weed Science database with details of more than 300,000 species of plants and over 21,000 weeds.

The project was expected to take several weeks to complete. 'This project is of such enormity in terms of the numbers of records, that we've had to overcome some unique programming hurdles in order to handle the quantity of information', Mr. Randall said. The database includes descriptions of weeds, information about impacts and toxicity, as well as where the weeds are established.

Each entry contains a variety of information from 700 reference sources and almost one million records. Mr. Thomas said the development of Mr. Randall's research into the database, reflected the Department of Agriculture's commitment to protecting the state from plant diseases and pests. He said Hawaii had suffered ecological, economic and associated lifestyle problems due to invasive plant and animal pests. In 1993, the US Office of Technology Assessment declared Hawaii's alien pest species' problem the worst in the nation.

Hawaii's isolation from the continents, and its modern role as the commercial and tourist hub of the Pacific, made it particularly vulnerable to destruction by alien pests. 'Gaps in current pest prevention systems and a lack of public awareness has added further to this serious problem', Mr. Thomas said. 'Many tourists visiting Hawaii as well as many local residents are unaware that virtually all the lush vegetation they see is comprised of introduced plant species that have completely over run the unique endemic species.'

Mr. Thomas said the agricultural industries struggled to remain competitive because large numbers of introduced crop pests placed restrictions on export trade and were expensive to control. 'Australia is currently better-protected than Hawaii with respect to new incursions of alien pest species because of excellent biosecurity measures designed to protect the ecosystem and Australia's agricultural industries', he said. Mr. Thomas also said continued information and education was paramount, as was the cooperation of the public and industry.

Further information about the joint initiative is available from the HEAR website at www.hear.org.

Oaten hay breaks weed and herbicide cycles

In the battle to reduce weed numbers, incorporation of oaten hay in a rotation has proved very effective in depleting weed seedbanks. This result has emerged from research, supported by growers and the Federal Government through the GRDC, which was conducted by the Alma and Tarlee Land Management Groups in the lower north of South Australia.

According to agronomist Tony Craddock of Rural Directions, who worked with the groups for the four years of the project, oats are competitive with weeds. They enable the use of alternative herbicides to control herbicide-resistant ryegrass and, during haymaking, ryegrass seedheads are cut and removed from the paddock.

'The groups have found, however, that for haymaking to be effective, control of regenerating ryegrass seedheads is essential', Mr. Craddock said. 'While not as effective as hay, the groups' research has also shown canola to be very useful in depleting, or at least not increasing, the weed seedbank.' The groups arrived at some answers on other strategies as well.

Crop-topping This has transformed pulses from being a weak link in the rotation, as far as herbicide-resistant ryegrass management is concerned, to a strong one. Mr. Craddock said that peas, for example, proved well suited to managing herbicide-resistant ryegrass. They were optimally sown later in the cropping program, allowing control of early ryegrass germination, and tended to mature earlier than beans, lupins and lentils, allowing crop-topping to be conducted with less impact on yield.

Competitive cereals Blow-outs in seed-bank levels were often associated with crops of poor competitive ability such as Yallaroi durum and Janz wheat. Mr. Craddock said even varieties recognised as having good competitiveness suffered blow-outs when drought, herbicide damage or poor establishment impaired their competitive ability.

High risk Beans or lentils followed by Yallaroi durum were found to be high-risk sequences and, to overcome this, farmers now crop-topped or windrowed their beans and had switched to the more weed-competitive Tamaroi durum variety.

Pastures First-year pastures proved a weak link in managing the ryegrass seedbank because they were less competitive and farmers were reluctant to heavily graze or spray-top them. However, where pasture phases of two years or more were practised, ryegrass seed-bank levels were significantly reduced in nearly all of the paddocks monitored. According to Mr. Craddock, spray-topping in managing ryegrass in pastures was more effective when the pastures were mechanically topped before spray-topping, as more even ryegrass seedhead emergence occurred.

Competitive practices 'Behind the scenes, the growers in the project all use high seeding rates, ensure good crop nutrition and aim for timely sowing to maximise competitiveness with weeds', Mr. Craddock said. 'There is also a high level of attention to detail, such as control of 'escapes' after hay cutting, strategic grazing to prevent ryegrass seedset, care in applying herbicides at optimum timings and rates. Despite all this, things go wrong and blow-outs in the ryegrass seedbank sometimes occur and so, each autumn, group members review graphs of their weed seedbank trends. But overall, there is no doubt the strategies they have adopted are working'.

from GRDC Groundcover 2002

Weed Manager 2002

Weed Manager 2002 is a comprehensive and simple to use software package, designed specifically for land managers directly involved in weed control. It provides land managers with a planning and recording tool previously unavailable.

Weed Manager 2002 allows the land manager to plan and record control of weed infestations in several easy steps:

1. **Register weed infestations**
   Registering all weed infestations is the first step in planning any control strategy. By registering all the weed infestations within a park or reserve, the manager can better plan and execute their control strategy with the help of comprehensive reports.
2. **Apply controls**
   Controlling weeds in bushland is complicated. Weed Manager 2002 makes it quick and easy to record the techniques used in control.
3. **Record outcomes**
   Weed Manager 2002 records outcomes for each control applied to a weed infestation. Managers can record the success rating and weed management trend, as well as staffing levels, hours worked and associated costs.
4. **Reports**
   Weed Manager 2002 provides a comprehensive array of reports, presenting relevant information in an easy to read on screen and printable format. The park name and contact details are displayed prominently on every report, so they are personalised for a specific park or reserve.

Install Weed Manager 2002 onto your local drive, or simply install onto your server to enable Weed Manager 2002 to operate over your Network. Manage as many parks or reserves within your district or region as you wish. Managers simply register and log on to their selected park or reserve. Weed Manager 2002 is password protected, ensuring valuable records are not lost or altered by unauthorised users.

A free trial for the first 30 days of Weed Manager 2002 is available. You can then simply purchase the package once the trial period ends and keep all your records intact. Prices start at $499. For more information contact Richard Denvir on 03 9584 0889. Email: richard@weedmanager.net.

Turfgrass Weeds Proceedings

A limited number of proceedings from the workshop run by the Society on Turfgrass Weeds last year are available from the Secretary. Cost is $5.00 per copy including postage.

Order now to ensure you don't miss out!

MEMBERSHIP RATES

Weed Society of Victoria Inc.

Students	**$20.00**
Ordinary	**$35.00**
Corporate	**$80.00**

Clunies Ross National Science and Technology Award 2003

The Ian Clunies Ross Memorial Foundation is pleased to announce that the Clunies Ross National Science and Technology Award 2003 is now open for nominations.

Since 1991 these Awards have honoured sixty-seven people from every State and Territory for their successful application of science and technology for the economic, social or environmental benefit of Australia.

Please note that nominations close on Friday 26 July 2002. Award recipients will be announced and presented with a silver medal at a formal ceremony and dinner to be held March 2003 in Melbourne, Victoria.

Nomination forms are available from the Ian Clunies Ross Memorial Foundation.

Phone: (03) 9854 6266.
Fax: (03) 9853 5267.
Email: info@cluniesross.org.au
or visit the website at:
www.cluniesross.org.au.

Recent weed prosecutions

Sale of Paterson's curse in hay

On 5 March 2002 an Echuca hay contractor became the first person in Victoria to be prosecuted under Section 71(1) (d) of the *Catchment and Land Protection Act 1994*, for selling hay contaminated with noxious weeds. Under this section, 'a person must not without a permit from the Secretary, remove or cause to be removed or sell fodder or grain which contains the seeds or any other part of a noxious weed that is capable of growing'.

Echuca Magistrates Court heard that the offender agreed to cut the hay on a Yarrawonga property in November 2000 in exchange for half the bales. The paddock of subterranean clover had been sprayed for Paterson's curse five months before it was cut. Forty round bales were then sold to a farmer at Lancaster, near Kyabram. Purple flowers were noticed in the round bales when they were delivered at the Lancaster property.

NRE officers were notified and asked to confirm the contamination. Samples taken from the bales revealed adult Paterson's curse plants, flowers and mature seed. Seeds taken from the Paterson's curse were sent to KTRI for testing, where a high proportion of the seed germinated under controlled conditions within 12 days.

The offender's solicitor pleaded guilty on his client's behalf, with a plea for leniency because there was the possibility of civil proceedings against his client by the purchaser of the hay. The Magistrate found the case proven and the offender was placed on a 12 month $100 good behaviour bond and ordered to pay $57.50 costs.

Contaminated hay is the likely cause of many new weed outbreaks. The Lancaster farm had no history of Paterson's curse prior to the importation of this contaminated hay, according to NRE's Integrated Pest Management System, a good indication that it had been kept clean. The purchaser has subsequently destroyed the 40 bales, worth about $2000.

Ideally weeds should be controlled prior to harvesting, but where this is not the case, hay or grain containing noxious weed seed or plant parts capable of growing should not leave the farm. Where possible, farmers should check the origin of potential purchases to ensure produce is free of contaminants. Agents who purchase, sell or transport fodder or grain are reminded to ensure that their produce is clean.

Alan McKay Senior Catchment Management Officer NRE, Echuca

Ragwort South Gippsland

In late February, absentee landowners, resident in Singapore, pleaded guilty at Korumburra Magistrates Court to a charge of failing to comply with a land management notice to control ragwort on their 80 hectare Toora property. The offenders were fined $1000 and ordered to pay $5900 compensation to NRE for control works undertaken by the Department.

Serrated tussock again

Earlier in February an Anakie landowner pleaded guilty at Geelong Magistrates Court of failing to comply with an order to control serrated tussock and was fined $500.

from Under Control 2002

Australian Landscape Conference

21–22 September 2002

The Australian landscape conference has been convened to explore recent initiatives in contemporary design and sustainability. Extensive planning has resulted in a range of outstanding speakers from Australia and overseas. Australia's first major international garden design conference was initiated by Mr. Tony Mugg in 1989. Later conferences were convened in 1994, 1996 and 1999 by Mr. Ralph Neale, editor of Landscape Australia.

This conference has been convened by Australian Landscape Conference which includes representatives from Bloomings Books Pty. Ltd. in conjunction with Mr. John Patrick, well know landscape architect, writer and media presenter. Bloomings Books is a specialist publisher of garden design and horticultural books.

The conference will be held at the Camberwell Centre, Camberwell, Victoria. It contains an auditorium seating 1200 people and is equipped with the latest audio visual facilities. Places at the conference are allocated on receipt of applications and as seating is limited early bookings are recommended.

The conference has been structured to meet the interests of all those with an abiding interest in gardens including garden owners, landscape architects, landscape designers and contractors, plant suppliers and many other segments of the horticultural industry.

Further information is available from Australian Landscape Conference, 7 Newry Street, Richmond, Vic 3122, phone 03 9472 1592, fax 03 9472 9066 or www.bloomings.com.au. Registration fees: prior to 1st August $450 per person, after 1st August $495 per person. A 50% concession is available to students.

Grasslands Society 43rd Annual Conference

13–14 June 2002

Facing the future is the theme of this two day conference to be held in Kernot Hall, Morwell. Speakers chosen for this conference are either scientists, primary producers or agribusiness people. They will address what affects decision making, pasture productivity choices and the future directions of pastures and pasture productivity.

For more information contact Grasslands Society of Victoria, PO Box 525, Mornington 3931 or phone 03 5974 4066, fax 03 5974 1141, email office@gsv.com.au.

RESISTANCE TO GLYPHOSATE – AN UPDATE

Dr. Christopher Preston, CRC for Australian Weed Management

Glyphosate resistant weeds in Australia

The threat of glyphosate resistance is an emerging problem in Australian cropping systems. The drive to minimising soil disturbance coupled with resistance to many selective herbicides is placing increasing pressure on glyphosate as the main weed control tactic. Fortunately, glyphosate resistance is still relatively rare. So far glyphosate resistance has appeared only in annual ryegrass in Australia, but is known from other weed species elsewhere in the world. Resistance in annual ryegrass has so far occurred where: glyphosate is the major or only herbicide used; glyphosate has been used for 15 years or more; and there is minimal soil disturbance. These situations are listed in Table 1.

In addition to the confirmed populations, there are a number of suspect populations that are being tested. Many of these populations are from grain cropping paddocks. In 2001, John Matthews found survivors to glyphosate within 90 populations of annual ryegrass submitted for herbicide resistance testing. A total of 40 populations were further screened for resistance to glyphosate. Of these, 20 populations had survivors to 1.5 L ha^{-1} glyphosate and 14 had survivors to 3 L ha^{-1}.

All of the populations with individuals surviving glyphosate were resistant to at least one other ryegrass herbicide. This indicates that resistance to glyphosate is becoming apparent, or being selected for, in the absence of other effective herbicides. Some of these populations will be examined further this year to confirm the presence of glyphosate resistance.

Glyphosate resistant weeds worldwide

Glyphosate resistance is documented for several species around the world. Table 2 is a list of species' countries and situations. Clearly, orchards and vineyards are areas where there is significant risk of glyphosate-resistant weeds evolving. As in Australia, glyphosate resistance is occurring where there has been intensive use of glyphosate, a lack of other effective herbicides used and little or no tillage.

The large number of resistant populations of *Conyza canadensis* in the US demonstrates what happens when glyphosate is used as the only method of weed control. The introduction of Roundup-Ready soybeans allowed growers to move from conventional cultivation to zero tillage operations. It is where these growers have also relied on glyphosate as their only method of weed control that resistance has occurred.

Avoiding glyphosate resistance

The risk factors for glyphosate resistance are clear:

- A long history of glyphosate use – at least 15 years
- No other effective herbicides
- Minimal soil disturbance

Avoiding situations where these three risk factors occur together can reduce the risk of glyphosate resistance. Tactics that could help include occasional rotation of knockdown herbicides, occasional full soil disturbance, and management of weed control escapes so they do not set seed. Data from our experiments suggest that if glyphosate is not used one year in every four the risks of resistance evolving are reduced.

Above all, it is important to keep weed numbers as low as possible. It is much easier to manage resistance in small weed populations than in large weed populations. As glyphosate resistance is rare, it may not occur on all paddocks. Keeping weed populations small could reduce the risk of resistance evolving.

from Crop Science Society of SA Newsletter No. 198

Table 1. Incidence of confirmed glyphosate-resistant populations in Australia.

Situation	Confirmed resistant populations	States
Horticulture	4	NSW, SA
No-till grain cropping	4	Vic, SA, WA
Crop/Fallow	2	NSW
Roadside	1	NSW

Table 2. Evolution of glyphosate resistance elsewhere in the world.

Species	Common name	Country	Situation	Confirmed resistant populations
Lolium rigidum	Annual ryegrass	USA (California)	Orchards	2
Lolium rigidum	Annual ryegrass	South Africa	Vineyards	2
Lolium multiflorum	Italian ryegrass	Chile	Orchards	2
Eleusine indica	Goosegrass	Malaysia	Plantations	4
Conyza canadensis	Fleabane	USA (Delaware, Maryland, Tennessee)	Roundup-Ready Soybeans	26

WSSV HOME PAGE: http://www.vicnet.net.au/~weedsoc/

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