

# APPS NEWS

Volume 15, No. 2

June 2002

## Quarterly Comments from the APPS President

### Quarterly Comments from the APPS President

The Organising Committee of the highly successful Biennial Conference has advised a profit in the vicinity of \$60,000. This is a remarkable achievement for which they deserve the Society's congratulations and sincere thanks. It was achieved through an incredibly successful sponsorship drive and efficient management of all aspects of the conference finances. The profits derived from workshops and excursions and 10% of the remainder are normally returned to the region responsible for the Conference. The Executive is considering how best to utilise the remainder. It is giving consideration to the following: a development grant to North Queensland to foster professional activities such as supporting visits by national and international guest speakers as well as workshops; a development grant to the Journal to be invested over the next three years to support increased journal pages and so reduce time to publication which has been steadily increasing as the journal's popularity increases, and travel grants to assist a number of members to participate in the Congress. Members are asked to email the Secretary with comments on these possibilities and other suggestions as soon as possible.

*Lester W Burgess*

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### News from the Editor-in-Chief of Australasian Plant Pathology:

Senior Editor Fiona Benyon has moved onto greener pastures at Horticulture Australia and her role has been taken by Emer O'Gara at University of Melbourne. I am pleased that we have some younger talent on the editorial team and thank both scientists for their input into our journal.

I get a number of emails from authors asking about progress with their papers. Delays occur for a number of reasons, usually due to slow responses by the referees. The entire cycle of journal production from when I initially receive a paper to when I edit the accepted version and send it to the Technical Editor, is a voluntary process. I hassle editors to hassle referees who are tardy but in the end there is a limit to how much we can push.

Thus, if you are asked to referee a paper, handle it with the speed with which you would wish your papers to be handled. It is not unheard of for an author to complain about the turn-around time when they themselves have been known to sit on someone else's manuscript for more than 3 months. Please be considerate if you are asked to review a paper and return it promptly. We may not be able to achieve the 6-week turn around time advertised by some journals but we can strive to be efficient and handle papers in a professional manner.

Ric Cother

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### **XI INTERNATIONAL SYMPOSIUM ON BIOLOGICAL CONTROL OF WEEDS 27 APRIL - 2 MAY 2003**

The XI International Symposium on Biological Control of Weeds is being held in Canberra, Australia, from Sunday 27 April - Friday 2 May 2003. The importance of ecology as the underpinning discipline for biological control is the emphasis for this symposium. Information on the symposium, including cost of registration and deadline for abstracts, can be found at

<http://www.ento.csiro.au/weeds2003/index.html>

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# International Congress of Plant Pathology

## Christchurch, New Zealand, 2 – 7 February 2003

Incorporating the 14th Biennial Australasian Plant Pathology Conference.

Deadlines to remember:

- ◆ 30 June 2002 - early-bird registration - NZ\$980
- ◆ 30 June 2002 - Bursary applications close
- ◆ 31 July 2002 - abstracts of invited & offered papers required
- ◆ 31 October 2002 - registration - NZ\$1080
- ◆ 31 October 2002 - Accommodation booking cut-off

web address: [www.lincoln.ac.nz/icpp2003/](http://www.lincoln.ac.nz/icpp2003/)

In the “Call for papers and Registration Brochure” there are listed 11 pre-congress & one post-congress workshops. If you wish to contribute to any of these then please email the organiser. In addition you must register for them when completing the registration form. Note also in the brochure that there are evening workshops on the Tuesday 4 February & Thursday 6 February, & if you wish to contribute to them then you must email the organiser.

Please note that two other evening workshops have been arranged as follows: Tuesday “Biosecurity” contact Bill Roberts [bill.roberts@aqis.gov.au](mailto:bill.roberts@aqis.gov.au), Thursday “Amateurs gardeners and plant pathology” contact Stephan Helfer [S.Helfer@rbge.org.uk](mailto:S.Helfer@rbge.org.uk)

Please look at the website [www.lincoln.ac.nz/icpp2003/](http://www.lincoln.ac.nz/icpp2003/) from time to time as any new information is placed there, as well as details of post-congress tours. The website also offers secure on-line registration facilities.

The Grain Development and Development Corporation (GRDC) are major sponsors of ICPP2003. GRDC recognise the importance of the Congress and, as part of their sponsorship commitment, are encouraging people involved in the Australian grain industry wishing to attend ICPP2003, to apply for a travel grant to assist towards the cost of airfares. The closing date for these awards is September and more details can be found on the website: [www.grdc.com.au](http://www.grdc.com.au)

*Ron Close, Helen Shrewsbury*

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## REGIONAL NEWS

### QUEENSLAND

There have been two seminar days held in Queensland so far this year, details below. Both days were very well attended, with Prof. John Leslie’s seminar attracting a record crowd. Future seminar plans include a tour of Maroochy Research Station, timed to coincide with strawberry season of course! As well as the third annual Postgraduate Seminar Awards Day to be held in late November. The venue for this years Awards day has not yet been finalised, but will most likely be somewhere in the south east, although not necessarily Brisbane. The location of the entrants will dictate to some degree the final venue. However, I would very much like to encourage students located in other areas to attend, as sponsorship to cover travel expenses is available.

#### **Fusarium Wilt of Cotton Field Day (Cecil Plains Field Trip) 21 March 2002**

The first seminar day of the year was a field trip to Cecil Plains presented by the Cotton / Fusarium wilt team. The day involved a tour of this seasons variety trial run on Graham Clapham’s property, which was one of the first paddocks to succumb to Fusarium wilt in Queensland. The current trials are run by Joe Kochman, Linda Swan and

Anthony Mitchell (QDPI, Toowoomba). As usual the Brisbane travellers set off from Indooroopilly early, with the mini-bus ably driven by Captain Bob Davis. After a brief stop at Gatton to pick up more passengers, we arrived in Toowoomba for a quick morning tea. A convoy of vehicles then set off for Cecil Plains. After a brief introduction to the trial site by Joe Kochman and Graham Clapham, we dispersed into small groups for a detailed look at the varieties grown. After a couple of very hot, dusty hours amongst the cotton, we set off for lunch at the Victory Hotel in Cecil Plains, before heading home. On behalf of the tourists, I would like to thank Joe Kochman, Graham Clapham and Emma Colson for all of their efforts in organising a great day out.

#### **Regular Seminar Program (Indooroopilly Research Centre) 14 May 2002**

##### ***Lois Eden (Biological Crop Protection Pty Ltd) "Causes of sudden wilt of capsicum"***

Sudden wilt is one of the most important diseases of capsicums. Occurring when the crop is ready for harvest, sudden wilt causes minor losses in most crops, and major losses in some years. A survey performed in 2000 resulted in 380 fungal species being isolated from capsicums with sudden wilt symptoms. Sudden wilt is also strongly associated with high temperatures. Pathogenicity testing revealed infection by *Pythium* species combined with high temperatures, were required to produce the significant root damage and wilting associated with sudden wilt. However, sudden wilt is really a symptom, rather than a disease, and it is thought that there may be other causes of sudden wilting in capsicums. Interactions with *Fusarium* species and the heat tolerance of other capsicum varieties will be explored in future work.

##### ***Neena Mitter (Queensland Agricultural Biotechnology Centre, DPIQ). "Suppression of gene silencing: A threat to virus-resistant transgenic plants"***

Post-transcriptional gene silencing (PTGS) is an intrinsic defence response of plants to invasive viruses. It works through sequence specific degradation of RNA, appears to be directed by dsRNA and is associated with production of small RNAs (21-25nt). Neena is investigating the stability of PTGS based resistance in transgenic plants with the aim of gaining an insight into the mechanism of suppression of PTGS by virus encoded suppressors, which may lead to loss of resistance. Neena has demonstrated that *Cucumber mosaic virus* (CMV) can suppress hairpin RNA induced PTGS. The suppression is dependent on the presence of CMV and is partial as both small RNAs and increased transcript levels are detected in samples taken from the same leaves. We have clearly shown that immunity to *Potato Virus Y* based on PTGS in transgenic plants, can be overcome via infection with CMV making the plant susceptible to the virus that it was engineered to resist.

##### ***Professor John Leslie (Department of Plant Pathology, Kansas State University) "Fusarium populations from native and agricultural ecosystems"***

Agricultural and native ecosystems have different (in some cases opposing) species of *Fusarium* present in their soils. Prof. Leslie began his talk by reflecting upon the disease problems that first drew him into the study of fusarium wilt, and lead eventually to his more recent work on *Fusarium* spp taxonomy, and population diversity. After deciding that light microscopy was not going to provide the solution he was after, Prof Leslie explained the process of AFLP analysis, and how it has been used to further clarify *Fusarium* taxonomy.

*Christine Horlock*

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## **First Notice**

# **APPS Post Graduate Seminar Prize Day**

**November, 2002**

**Postgraduate plant pathology students from throughout Queensland, or their supervisors are encouraged to submit expressions of interest to participate in the Australasian Plant Pathology Society's Annual Postgraduate Seminar Awards' Day.**

For further information, or to register your interest in participating, please contact:

**Christine Horlock**  
Plant Pathologist, DPIQ  
80 Meiers Road,

Indooroopilly QLD 4068.  
Phone (07) 3896 9335 Fax (07) 3896 9533  
Email [christine.horlock@dpi.qld.gov.au](mailto:christine.horlock@dpi.qld.gov.au)

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## VICTORIA

On the 1st May 2002, the Victorian branch of the APPS in conjunction with the University of Melbourne ILFR Parkville Seminar Series was pleased to host a seminar by Dr Thomas P. Freeman of the Northern Crop Science Laboratory, North Dakota State University, Fargo, North Dakota, USA. Tom was visiting some colleagues in Queensland and came to Melbourne especially to present a seminar entitled "A Comparison of Whitefly and Glassy-Winged Sharpshooter Penetration of Host Plant Tissues".

Tom presented his research on the feeding techniques of these two important insects by showing us some fabulous electron micrographs. He explained that whiteflies, which can cause losses of billions of dollars in crop and horticultural plant production, use their stylet to penetrate directly through the epidermal layer of the host plant leaf and then through the intercellular spaces of the mesophyll until reaching the phloem tissue. Stylets of both adults and nymphs are in the range of 200 µm and can reach the phloem from almost any position on the abaxial surface of the host leaf, transferring any of twenty different types of virus. He also showed how the glassy-winged sharpshooter, a serious pest in southern United States, especially in California, feeds on stems and leaves of the host plant by penetrating the epidermal layer with very rigid stylets and then extending the stylets directly through cortical cells to the xylem tissue. In the feeding process this insect can transfer the bacterium *Xylella fastidiosa* into the tracheary elements of the xylem which results in Pierce's Disease in grapes, and leaf scorch in a variety of other economically important host plants.

Tom's seminar was followed by some interesting discussion over light refreshments. Thanks to Tom for presenting his research and to audience members for their support. The next Victorian event to look forward to (at the end of June) is the APPS Midyear Postgraduate Student Seminars, where final year PhD and Masters students will present their work.

*Sally Stewart-Wade*

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## SOUTH AUSTRALIA

During autumn 2002, the SA branch has been visited by two international colleagues – Dr John Leslie (Kansas State University) and Dr Wayne Wilcox (Cornell State University). John Leslie discussed the genetic basis and population biology in *Fusarium* with a particular emphasis on vegetative incompatibility. The focus for Wayne's talk was *Phytophthora* root rot and the need to use integrated measures in its control. Unfortunately, the SA branch was not successful in its bid for a National Science Week Grant for our hypothetical to be held in August – 'To Eat or Not to Eat – A Hypothetical?'. However, we shall still be holding the event in conjunction with the University of Adelaide National Science Week and Waite Campus Open Day.

*Amanda Able*

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## POST GRADUATES (NON APPS)

## NEW SOUTH WALES

**University of Sydney**  
**Department of Crop Sciences**  
**Supervisors:** Professor Lester Burgess and Dr Brett Summerell

**Ms Jillian Smith-White**  
PhD – Population biology of *Armillaria luteobubalina*.

**Ms Tijana Petrovic**  
PhD- *Gibberella fujikuroi* species complex associated with grain sorghum in several Climatic regions of Australia.

**Mr Tran Nguyen Ha**

PhD- Biology of *Fusarium* within section *Liseola* and closely related species associated with maize in Australia, Vietnam and Sulawesi.

**Ms Phan Thuy Hien**

M Sc Ag - The population biology, taxonomy and molecular genetics of members of the *Gibberella fujikuroi* complex associated with indigenous grasses.

**Ms Ruth Amata**

M Sc Ag - The population biology, taxonomy and molecular genetics of members of the *Gibberella fujikuroi* complex associated with native and crop millets from Australia and Kenya.

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**Correction to listing for postgraduates (non APPS). Benedict Killigrew is based in Western Australia and not SA/WA, as was stated in the March edition.**

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**NOTES FROM THE WEB**

A new website has been set up by Drs Gary Lyons and Adrian Newton at the Scottish Crop Research Institute.

<http://www.drastic.org.uk>

It contains information on the molecular response of a wide range of plants to infection by plant pathogens and an important database of genes up- or down-regulated in response to infection, treatment with chemicals that modify resistance, and various abiotic stresses. The link to the searchable database is one of the quick links on the right hand side. The information in the database is derived from published information but this is the first occasion that expression data of this type has been brought together in a searchable format.

If anyone knows of information that should be on the database, or of groups in Australia that generate data that can be included in the database (once published) please forward this information to Dr Amanda Able, (amanda.able@adelaide.edu.au) to compile and forward to the DRASTIC group.

This is a great resource for plant pathogen interaction researchers and the more we can do to ensure its accuracy the better

*Amanda Able*

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**BOOK REVIEWS**

**Plant Pathologist's Pocketbook (3rd Edition)**

Waller, J.M., Lenne, J.M. and Waller, S.J. (eds).  
CABI Publishing 516pp

This edition of the Plant Pathologist's Pocketbook replaces the second edition that was published in 1983, and as such is a welcome review of an ageing text. The third edition is a larger format than its predecessor and, at over five hundred pages, is hardly a pocketbook anymore. The contents of the book have been reorganised into five parts

*Part 1: Recognition and Evaluation of Plant Diseases*

This section covers some historical aspects of plant pathology, sampling survey and assessment techniques, bibliographic information and a section on how to prepare samples for dispatch for identification.

*Part 2: Causes of Plant Disease*

Chapters in this section cover the major biotic causes of plant disease plus sections on weeds, arthropod pests and parasitic plants. Other chapters cover non-infectious disorders, airborne pollution and the effect of climate change.

*Part 3: Disease Diagnosis and Investigation*

Detection and isolation techniques (including immunological, biochemical and molecular techniques) are covered in this section along with inoculation, epidemic modelling and disease forecasting and experimental design.

*Part 4: Disease Management*

This section covers quarantine, seed health, cultural control of plant diseases, disease resistance, fungicides, chemical application and biological control of fungal plant pathogens and weeds.

*Part 5: General Techniques and Information*

The last section deals with information on laboratory safety, culture of fungi (including mycological media and methods), photography, publication databases and a glossary of plant pathology terms.

Many of the topics, which were covered in the second edition, are updated and reorganised in the third edition, with some depth added in all areas. The new edition also covers topics such as “Effects of Climate Change” and “Biochemical and Molecular Techniques” which were not covered in the original editions.

The information that is presented is up to date and well organised. This makes this book a useful text for students beginning in a career in plant pathology. Other texts may offer a more detailed study of selected areas, but the pocketbook combines theoretical and practical techniques in the one volume. As such, this book would be a worthwhile addition to university and state department libraries or as an update to personal libraries.

**Gavin Ash**

Charles Sturt University, Wagga Wagga

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**Compendium of Cotton Diseases - second edition published 2001.**

Eds T L Kirkpatrick and C S Rothrock

The American Phytopathological Society

3340 Pilot Knob Road

St. Paul, Minnesota 55121-2097, USA

ISBN 0-89054-279-1, 77pp, Price US\$42

This second edition of the ‘Compendium of Cotton Diseases’ is a well presented book in the standardised format of other crop disease Compendia published by The American Phytopathological Society (APS). There has been extensive revision of the first edition with recent information, additional black and white and colour plates and references included, to produce this second edition.

The new edition has an excellent introduction section that provides general information on the origin and diversity of cotton, growth stages of the cotton plant and general information on cotton diseases their causal agents. The remainder of the book is divided into three parts – Part I. Infectious Diseases, Part II. Abiotic Disorders and Part III. Disease Management.

The information in Part I is grouped into discrete sections on: cotton seed losses and mycotoxins; seedling diseases; foliar diseases; rusts; stem and root diseases; season-long diseases; boll rots; nematodes; nematode-fungal interactions; virus and phytoplasma diseases and diseases of unknown etiology. Details of each disease described include; symptoms, causal organism, disease cycle and epidemiology, control as well as a list of selected references. There are good line drawings and black and white photographs of many of the pathogens. There are also 115 colour plates of disease symptoms in this edition of the compendium, 56 more than in the first edition.

Part II deals with nutritional deficiencies and toxicities, environmental disorders of the cotton crop and herbicide injury while Part III covers disease control in production systems, nematode resistance and resistance to fungal and bacterial pathogens.

This compendium is well written, with good photographs and line drawings, and is easy to follow. One possible improvement would be the inclusion of an index for the colour plates. The glossary and a guide to the identification of diseases in the field (basically a four page symptom key) have been omitted from this edition.

Overall, this compendium presents new and updated information on cotton diseases and I believe it is an essential tool for all diagnostic laboratories, practicing field crop pathologists, agronomists, consultants and an important reference for students of plant pathology.

*Joe Kochman*

Queensland Department of Primary Industries, Toowoomba.

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**Compendium of Potato Diseases – Second Edition 2001.**

Eds WR Stevenson, R Loria, GD Frand, DP Weingartner.

APS Press : St Paul

ISBN 0 89054 275 9

142pp Price US\$49.00

The second edition of the Compendium of Potato Diseases is a valuable reference for any person working on potato diseases. The publication is dedicated to W.J. (Bill) Hooker, the editor of the first compendium, outlining his career as a fine pathologist and recognising his outstanding contribution to the knowledge of potato diseases.

The Compendium starts with information of the background of the potato plant, its anatomy and physiology, and a short summary of management strategies with a brief outline of the various causes of disease. The bulk of the compendium expands on these causes, with detailed information of individual diseases affecting potatoes divided into two main areas: “Disease in the presence of infectious pathogens” and “Disease in the absence of infectious pathogens”.

The table of contents is a list of diseases grouped by the pathogen or cause. Readers familiar with the first compendium will notice an immediate improvement here – all diseases within each group are listed alphabetically by common name, making finding the disease description much easier.

The first section, “Disease in the presence of infectious pathogens”, includes diseases caused by bacteria, fungi, nematodes, phytoplasma and viruses and viroids, with single entries under unknown cause and insect toxin. All entries begin with an outline of the importance of the disease, followed by detailed descriptions of plant symptoms, causal organism, disease cycle and epidemiology and management. Another improvement in this edition is the extra detail included of various identification methods available, media used and descriptions of cultures. However the reviewer would have liked to have seen life cycles included for the major pathogens as they were in the first edition. The management section gives a good coverage of all aspects of managing the disease, however chemical control details are very general, which is presumably more suitable for an international publication.

There have been a few other changes in this first section in the second edition. Many of the bacterial and fungal diseases remain the same, with only minor changes to names. For example *Alternaria alternata* is now listed under its common name of Brown Spot, and Pink eye has been removed from the bacteria section and placed on its own under “Unknown cause”. Most of the original text has been revised and updated, with some descriptions undergoing completed re writing. Some of the diseases in the original compendium have been removed, presumably the editors of the second edition considered them no longer valid diseases or pathogens of potato. The most obvious change has been in the Virus and viroid descriptions, where many of the viruses previously described separately are now listed in a table. The reviewer found this information was easy to scan and was well referenced, but was disappointed with the lack of symptom description.

The second section, “Disease in the absence of infectious pathogens”, covers nutrient imbalances, physiological disorders of plants and tubers, chemical injury and mechanical damage. The physiological disorders of tubers are further divided into external and internal symptoms. The reviewer found this second section easier to navigate and locate information than in the first edition. Many of the black and white photos have been removed and added as colour plates, so while this section is no larger overall than in the original edition, there is more descriptive text and information included. The section related to chemical injury has been expanded, with a good, albeit short, table of symptoms and many colour plates included.

The collection of photographs, diagrams and figures used throughout the book is again excellent, with more than double the number of colour plates included in the centre of the book. The placement of these colour plates has also been improved, as they no longer bisect the middle of a description. Many new images of non infections diseases and herbicide injury have been included, and many of the black and white images from the first edition have been included as colour plates.

If there is a criticism of the new edition, it is the removal of the disease chart, previously included as an appendix in the first edition. This was a useful key for matching symptoms to possible causes.

The reviewer recommends the second edition of the Compendium of Potato Diseases as a valuable addition to the library of anyone involved in potato production. It covers a wider range of diseases and disorders than most other publications on potato diseases, and the excellent collection of colour photographs of symptoms is invaluable as a reference tool.

*Barbara Hall*  
Horticulture Pathology, SARDI.

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### **WANTED: VISITING SCIENTIST INFORMATION**

There is a site on the APPS web page which lists information about scientists visting Australia and their contact details. The intention is to make available this information for anyone who may wish to contact these scientists (via the person they will be visting), perhaps to arrange a visit or a seminar.

This will only work if the information is available, so could anyone with visiting scientists please input the information via the members services section on the web at [http://www.australasianplantpathology.org.au/Miscellaneous/Visiting\\_scientists.htm](http://www.australasianplantpathology.org.au/Miscellaneous/Visiting_scientists.htm)

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### **CLUNIES ROSS NATIONAL SCIENCE & TECHNOLOGY AWARD**

The Ian Clunies Ross Memorial Foundation is pleased to announce that the Clunies Ross National Science & 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.

*Nomination forms are available from the Ian Clunies Ross Memorial Foundation:*

Tel: (03) 9854 6266, Fax: (03) 9853 5267

Email: [info@cluniesross.org.au](mailto:info@cluniesross.org.au)

or visit our web site at [www.cluniesross.org.au](http://www.cluniesross.org.au)

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## New Members

On behalf of the Society, the Management Committee would like to welcome the following new members:

NSW: Mrs Stacey Azzopardi  
Dr Robyn  
Miss Kathryn Smith  
SA: Dr Tirath Gill  
QLD: Miss Cassy Percy  
New Zealand  
Dr Wadia Kandula

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## Don't forget to have your say!

This is your newsletter so be sure to let us know what is going on about:

- \* Open days and field days
- \* Scholarships and employment opportunities
- \* Regional news
- \* Special interest groups
- \* Requests for information etc.
- \* Upcoming events
- \* Awards to members
- \* Issues of concern
- \* Humorous events

and any other interesting information!

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APPS NEWS is the official newsletter of the Australasian Plant Pathology Society, published quarterly. Items for inclusion should be sent to Mrs B. Hall, Plant Research Centre, SARDI, GPO Box 397, Adelaide, SA. 5001. Ph. 08 8303 9562, Fax 08 8303 9393, Email: [hall.barbara@saugov.sa.gov.au](mailto:hall.barbara@saugov.sa.gov.au). **Next deadline: 9 Aug 2002.** Editor-in-Chief APP: Dr Eric Cother, NSW Agriculture, Orange Agricultural Institute, Forest Road, Orange, 2800. Ph. 02 6391 3886, Fax 02 6391 3899, E-mail: [ric.cother@agric.nsw.gov.au](mailto:ric.cother@agric.nsw.gov.au)

Web Site: (<http://www.australasianplantpathologysociety.org.au/>)

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