International Society for Plant Pathology
(Professor Richard Falloon, President)

Report to ISPP from an Associated Society for 2003-2008.

ISPP

Name of Society. Australasian Plant Pathology Society Inc. (APPS) **Established:** 1969

Web address for Society. www.australasianplantpathologysociety.com.au

Name of personnel preparing report. Greg Johnson – President APPS (2007-2009), ISPP Councillors – John Randles, Elaine Davison (Out-going), and Robin MacDiarmid (incoming).

Nominated Officers. Is the list on the ISPP website correct? Yes/~~No~~
(If Yes there is no need to list them here. If listing is not correct, please list here President, Secretary, Treasurer, Business Manager/Office and ISPP councillors (address, telephone and email contacts).

Will a Society member be making corrections to the ISPP entry for your society on-line? Yes/~~No.~~

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Society membership. 480 members in 2006; 452 members in 2007; 446 members in 2008.

Report for 2003-2008.

- *Society Activities and publications.* A brief background, and information about the aims and achievements of the Australasian Plant Pathology Society, and links to Society publications, are detailed on the Society Website. The APPS publishes *APPS News*, *Pathogen of the Month* (an initiative of APPS West Australian Branch members), and two journals (in association with CSIRO) *Australasian Plant Pathology* (APP) 6 issues per year) and *Australasian Plant Disease Notes* (APDN - on-line only).
- APPS has a part-time business manager, and provides member information, discussion forums and paid job advertising through the Society web-site.
- *Society Conferences and Workshops.* The APPS holds a biennial Conference with associated workshops. Special interest group workshops (Soil-Borne Diseases and Plant Virology) are held, usually in the alternate year to the biennial conference.
- APPS hosted the ICPP2003 in tandem with the 14th Biennial APPS conference in Christchurch, New Zealand, in February 2003. Subsequent APPS Biennial Conferences have been held in Geelong, Victoria (9/2005) and Adelaide, South Australia (9/2007). The 17th Biennial Conference, and 40th Anniversary of the Society, will be held in Newcastle, NSW in September 2009. In April 2011, APPS will host the 4th Asian Conference for Plant Pathology in Darwin, Northern Territory, in tandem with the 18th Biennial APPS Conference. The APPS McAlpine Address and key papers from biennial conferences, are published in *Australasian Plant Pathology*.
- The 8th Australasian plant virology workshop will be held in Rotorua, New Zealand Nov 2008 (http://www.biosecurity.govt.nz/apvw2008). This event is organized as a medium-sized meeting that offers the opportunity to attend all oral presentations and discuss on poster updates of recent research results.
- *Other plant pathology conferences in Australasia.* In May, 2008, the 3rd issue of Volume 37 of APP focussed on nematology, to coincide with the 5th International Congress of Nematology in Brisbane, Australia.The International Union of Forest Research Organisations (IUFRO) will hold its International Forest Biosecurity conference in Rotorua, New Zealand, March 2009.

- *Plant Pathology in Australasia.* APP has published several papers highlighting priorities and issues for plant health management in Australasia. Key challenges include redefining tertiary education in plant pathology; Building collaborative links for research in the Asia-Oceania region; Combining biotechnology with real problems in plant pathology; identifying and supporting excellence in research and development and the declining role of government institutions in basis research in plant pathology and the inability of universities and applied research groups to sustain long-term basic research. Top ranked downloads from APP since 2000 are updated daily at http://www.publish.csiro.au/nid/41/aid/4616/date/5.htm.
- Funding opportunities for basic and applied R & D is fairly sound. The development assistance agencies in Australia and New Zealand have been good supporters of initiatives to reduce plant disease losses and improve capabilities for compliance with plant health measures under the World Trade Organisation (WTO) Sanitary and Phytosanitary Agreement (SPS) and plant health management in Asia and the Pacific. Australian researchers also collaborate with colleagues in other countries through a range of programs and funding sources.

Plant Pathology in the Region Served by the Society 2003-2008

Australia.

- In 2003-2008 progress has been made in biosecurity preparedness for Australian rural industries through a range of initiatives of Plant Health Australia, a peak body for co-ordinating plant health issues in Australia (APPS is an Associate Member). These have included a review of human resources in plant health (the aging cadre of personnel is a concern), a review of diagnostics, the development of industry biosecurity plans and cost-sharing agreements for managing exotic disease outbreaks. Currently PHA is co-ordinating the development of a National Plant Health Strategy and APPS is involved.
- In Australia, plant focused industries represented under some of the 15 rural research and development corporations, the Australian Centre for International Agricultural Research (ACIAR) and AusAID, the Co-operative Research Centre Program, quarantine authorities and the Australian Research Council, along with direct government and institutional funding are the main sources of support for R and D. Detailed programs of current efforts are contained on some of their websites. In addition, Plant Health Australia plays a key role in providing a forum for rural industry bodies with a focus on plant health R & D and biosecurity.
- A review of plant pathology and entomology capabilities in Australasia has been undertaken as an outcome of the Australasian Plant Pathology Curriculum workshop held in Brisbane in 2006. (Report by Howie, B, 2006: http://www.tpp.uq.edu.au/Portals/17/Resources/publications/APPC%20Final%20Report.pdf
- The Australian Quarantine and Inspection Services (AQIS) are celebrating their centenary in 2008. Australian plant quarantine and biosecurity are being integrated under the Australian Biosecurity System for Primary Production and the Environment (AusBIOSEC) – a framework of common principles and guidelines to enable biosecurity arrangements to be applied consistently across Australia. During 2008, APPS made a submission to an Australian Government review of Quarantine and Biosecurity.
- Under the Australian Biological Resources Study, two volumes of the *Fungi of Australia* of particular interest to plant pathologists were published during 2003-2008 – *Septoria* ((Ed) M. Priest ABRS, 2006) and *The Smut Fungi* (RG Shivas, D.Beasley and K.Vánky, ABRS, 2008)
- Monographs with a development focus that have arisen from Australian collaborations in plant pathology research in 2004-2008 have included: Diversity and management of Phytophthora in South East Asia (D Guest and A Drenth, ACIAR, 2004), Guidelines for surveillance of plant pests in Asia and the Pacific (T Mc Maugh, ACIAR, 2005), Management of plant pathogen collections R Shivas and D Beasley, DAFF, 2005) and A diagnostic manual for plant diseases in Vietnam (Burgess *et al.*, ACIAR, 2008).
- Under the Australian Government's Co-operative Research Centres Program, a CRC for Plant Biosecurity has been established with funding 2005-2012. Other CRCs with a strong emphasis in plant pathology operating in 2003-2008 include the CRC for Australian Weed Management (2001-2008) and the CRC for Tropical Plant Protection (2001-2006) and industry centred CRCs (viticulture (1999-2007), cotton (2005-), sugar

(2003-) and forestry (2005-)).

New Zealand.
Plant pathology expertise in New Zealand resides in the following institutions: HortResearch (fruit diseases); Crop & Food (vegetable and arable diseases); AgResearch (pasture diseases); Landcare Research (pathogen taxonomy; biological control of weeds); SCION (tree diseases); the University of Auckland (plant virus pathogens); Lincoln University (diseases of economic crops); Bio-Protection Research Centre (Lincoln University, biocontrol of plant diseases); Otago University (virus plant pathogens); and the Ministry of Agriculture and Forestry (MAF, pathogen biosecurity).

- A HortResearch led programme "Reducing the dependence on disease control chemicals in horticulture" (2003-2008 and currently under negotiation to 2012) represents the co-ordinated national effort by New Zealand to address the low residue requirements of consumers while maintaining disease control and uses, amongst other methods, ecological controls, biological controls, and risk predictions.
- Better Border Biosecurity, "a large cooperative science programme researching ways to reduce the rate at which new unwanted organisms are becoming established in NZ" gained 12 year government funding in 2005 (http://www.b3nz.org/public/index.php).
- The National Centre for Advanced Bio-Protection Technologies, established in 2003 as part of the New Zealand Government's Centres of Research Excellence initiative. Hosted at Lincoln University with three other partner institutes (Massey University, Crop & Food Research and AgResearch) the Centre conducts research on the development of new tools and technologies to meet the biosecurity and bioprotection needs of New Zealand's plant based primary industries (www.bioprotection.org.nz).
- In 2005 research on the systematics fungal and bacterial of relevance to plant pathology gained long-term funding from the New Zealand Government as part of the 'Defining New Zealand's Land Biota' programme (see the Fungi of NZ Homepage). This covers research on systematics of fungi and plant-associated bacteria, and also support for the 'New Zealand Fungal Herbarium' (PDD), the 'International Collection of Micro-organisms from Plants' (ICMP), and the NZFungi database. The two collections provide the critical vouchering resource for plant pathogen records for New Zealand. The database provides a record of all fungal names used in New Zealand context, links to the specimens and literature that support the use of that name in New Zealand, as well as descriptions, images and keys for some species. Additionally, the programme supports the publication of the Fungi of New Zealand series initiated in 2002. Volumes relevant to plant pathologists include 'Introduction to Fungi of New Zealand' (2004) (Ed Eric McKenzie) and 'Fungi on trees and shrubs in New Zealand' (2005) by Peter Gadgil.
- The first plant virus programme to be funded by the New Zealand government for over a decade was established in 2007 to develop "Technologies for the detection of new plant viruses" that may enter the island country at its borders. This programme is a co-ordinated effort between HortResearch, the University of Auckland and MAF Biosecurity.
- A new route for indexing and assessment of pathogens on imported crop plant using herbaceous indexing and RT-PCR was opened in 2007, by establishing an International Standards Organisation accredited diagnostic laboratory and Level 3 plant quarantine facility, operated by HortResearch's Plant Health Service in Palmerston North.
- In November 2004 MAF Biosecurity was formed. MAF Biosecurity New Zealand is the lead agency in adopting a whole of government approach to biosecurity." (http://www.biosecurity.govt.nz/about-us/about-us) including a plant health and environment laboratory (http://www.biosecurity.govt.nz/about-us/structure/phel).
- A Biosecurity Science Strategy for New Zealand (http://www.biosecurity.govt.nz/science-strategy) was approved for implementation in Ocotber 2007. The vision of this strategy aligns with "The Biosecurity Strategy for New Zealand" (August 2003, http://www.biosecurity.govt.nz/bio-strategy) and is that "Biosecurity science is effectively contributing to keeping New Zealanders, the plants and animals we value and our unique natural environment, safe and secure from damaging pests and diseases."
- Five Biosecurity Summits have been held in New Zealand since 2003 (http://www.biosecurity.govt.nz/biosec/camp-events/events/summit/archive) with the

sixth to be held 4th - 5th November 2008, Christchurch Convention Centre, Christchurch.

Papua New Guinea (PNG) and the Pacific Island Nations.

- Plant pathology R & D in the Pacific Island Nations is co-ordinated through the Secretariat of the Pacific Community (SPC) Plant Health Program. Australian and New Zealand Development assistance agencies, the European Union and other country donors are supporting a range of collaborative activities and capacity building in crop protection in collaboration with SPC, national and international agencies and non-government organisations.
- PNG has a land area larger than the Philippines and Vietnam, yet has a much lower but rapidly increasing population. PNG is a centre of diversity for banana, sugarcane, taro and winged bean with considerable potential to document and utilise germplasm for improving PNG agriculture. The other 21 Pacific Island nation members of SPC face challenges of remoteness, low populations and small agricultural bases, with opportunities in improving subsistence crops, agri-tourism and cash crops.
- The Pacific is fortunate in generally having low pathogen status as compared with other regions. PNG has suffered an incursion of citrus huanglongbing across their land border and are at risk from *Fusarium oxysporum* f. sp. *cubense* tropical race 4 and banana bacterial wilt. Recently, The PNG Cocoa and Cocount Institute reported an unknown coconut disease attacking large areas of coconut in the Bogia area, rapidly killing trees under 2 months. Also betel nut palms have been reported to be attached by an unknown disease in the Markham area.
- Compared to PNG, the other Pacific Island Nations have smaller agricultural bases, with production focussed in subsistence systems and cash crops and R & D undertaken by local Agricultural agencies with support and engagement from the SPC and Australia, New Zealand and other country agencies.
- Focus is on integrated management of diseases that affect garden (sweet potato, taro, yam, vegetables and fruit) and cash crops (cocoa, coconut, coffee, oil-palm, kava), emerging industries (vanilla, tree nuts) and forestry (forest health surveillance). Interest in rice cultivation is also increasing. There is also a stong focus on biological control of weeds (*Mikania micrantha* in PNG, Fiji)
- The Papua New Guinea National Agricultural Research Institute (NARI http://www.nari.org.pg/res/res.html), Department of Agriculture and Livestock, the Cocoa and Coconut Institute, the Coffee Industry Corporation, the PNG Oil Palm Research Association, New Britain Oil Palm Ltd and Ramu Sugar undertake applied R & D in PNG. NARI publishes a range of extension material http://www.nari.org.pg/info/order/order.html. National R & D priorities are articulated in strategic planning documents (NARI plan covers 2006-2010). The PNG National Agricultural Information System (http://www.pngnais.org/wysiwyg/view_page.php?id=13) provides library and information services to the Institutes.
- The Second PNG crop protection conference was held in Kokopo, East New Britain in 2004 (http://www.aciar.gov.au/publication/TR62)
- Key issues in PNG plant pathology research in 2003-2008 have included control of new strains of late blight in potato in the highlands, integrated crop protection of sweet potato and cocoa, strategies for the economic development of Bougainville, assessment of banana cultivars for black sigatoka resistance and Fusarium wilt, management of Ganoderma in oil palm.
- In the Pacific islands R & D has included integrated crop protection across a range of industries, improved disease control in the tonga squash industry, evaluation of the impact of Dasheen mosaic virus on and other viruses on taro yield (Fiji and Samoa), improved management of soil borne diseases of ginger, integrated pest management (Solomons) forest pest detection.
- Guava rust (*Puccinia psidii*) which is a quarantine threat to Australian Myrtaceae (*Eucalyptus* spp. etc) has spread into the Pacific and has been reported from Hawaii in 2005.

ACIAR tends to be the donor focusing on issues of a technical nature in plant pathology. The European Union, AusAID and NZAID, through their support to the Secretariat of the Pacific Community, fund regional plant pathology activities. The French Government is also active

particularly in providing collaborative support through CIRAD to francophone countries in the Pacific.

Capacity for plant pathology in the region still tends to be stretched. Several PNG and Pacific Island personnel are currently studying for higher degrees in plant pathology in Australia and New Zealand. Not every Pacific Island country and territory has a plant pathologist, and most tend to be in the Melanesian countries (PNG, Solomon Islands, Fiji and Vanuatu) with the majority based in PNG. Most Plant Protection staff in the Pacific island countries take on more general responsibilities and are over-worked. A number of "basic plant pathology" courses have been run by the Secretariat of the Pacific Community and CABI Bioscience to enable general agricultural staff from Ministries of Agriculture to have some basic skills in plant pathology.

In the Solomon Islands, the Secretary to the Prime Minister's Department was formerly a plant pathologist!

Submitted by
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John Randles, Elaine Davison, Robin Macdiarmid, Jacqui Wrght - May, 2008