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The influence of the Chief Officer of Plant Protection on plant pathology

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Introduction

The quarantine review of 1996 that was chaired by Professor Malcolm Nairn (Nairn *et al*. 1996) concluded that quarantine is a shared responsibility. In a national biosecurity system that brings together all activities undertaken by the Australian Government, States and Territories, as well as industry, landholders and other key stakeholders to protect the economy, environment and human health from negative impacts associated with pests, diseases and weeds, quarantine is but one important component.

The embryonic Australian Biosecurity System for Primary Production and the Environment expands upon the Nairn committee concept of a 'continuum of quarantine' to link even more closely the off-shore, border and domestic components of the continuum into a complete and tangible framework. It establishes a policy framework for greater national collaboration on biosecurity issues both within, and across, jurisdictions and with key stakeholders in the primary production and natural resource management sectors. It builds on the specific industry and pest based strategies, legislation and operational procedures that are already in operation within Australia. The developing framework provides an appropriate vehicle for drawing into a national context the roles and responsibilities of the Office of the Chief Plant Protection Officer.

The Chief Plant Protection Officer – aka Lois Ransom

I have always considered my contribution to plant pathology to be modest. I have a Master of Science degree in Microbiology from the University of Canterbury, New Zealand, majoring in plant pathology, and 20 years of experience in the application of plant protection to support production and trade in plants and plant products. However, while my degree gave me theoretical knowledge about plant diseases, their causes and cures, my real learning in the discipline has been gained on the job. I cannot claim to have ever had in-depth knowledge of highly technical diagnostic tests, nor am I particularly gifted in statistics, although I do appreciate that they are necessary at times. I find research work tedious and greatly admire those who have the attention to detail necessary to undertake this fundamental work.

I consider myself to be one of an increasingly rare sector of plant pathology practitioners – a 'muddy boots' pathologist. Over the last 20 years or so, I have amassed a working knowledge of most aspects of plant diseases, their epidemiology based on theory and field observation, their management, their identification and their taxonomy. In recent years, I have dealt more with the theory than the practice of plant protection through my various roles with the Australian Government, but believe that extensive field experience has added significant value to the policies and operational practices arising from my work.

My contribution to applied plant pathology has been largely in the area of development and extension. By development, I mean the identification of a plant disease problem to which research, usually completed by someone other than me, is applied to develop a solution. Extension is about selling the solution so that it is adapted to the good of the individual it benefits. Most of my publications were written for farmers in the hope that a better understanding of their crops and the diseases that affect them would lead to better control and better returns through improved yield and quality. My most recent contribution was to an integrated pest management manual prepared by the Tasmanian Department of Primary Industry, Water and Environment that was published earlier this year.

For me, working in plant pathology has always been about making things better. In the early days, I wanted to provide solutions to disease problems for vegetable growers in northern Tasmania so that they could grow the best crop and get the best returns, but not at the expense of long-term sustainability. This has evolved over time and with a range of jobs to have a much wider focus – in fact at minimum it now has a fully national focus with an increasing consideration of the international.

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I am very proud of the Farm Hygiene programme that I started and eventually managed in Tasmania more than 12 years ago. The concept of farm hygiene is very simple – it is about preventing the entry of new diseases, while at the same time containing the ones that are already present until technology or science delivers an effective treatment to manage or eradicate them. With limited resources but the dedication of a religious crusade, a small team comprising a plant pathologist, entomologist, weeds agronomist, agriculture specialist and a vet managed to influence the policies and practices of government, private industry and the farming sector in Tasmania to minimise the spread of plant and animal pests and diseases through the application of simple principles such as the 'clean on – clean off' message.

The objectives of the Tasmanian farm hygiene programme are no different from those of the developing Biosecurity System for Primary Production and the Environment that will be considered by Australian agriculture and environment ministers in October 2005.

My contribution to the application of plant pathology as a vital component of plant health and the broader concept of plant biosecurity, leads me into an exploration of the role of Australia's Chief Plant Protection Officer and the Office itself.

The Office of the Chief Plant Protection Officer

The Office of the Chief Plant Protection Officer was established within the Australian Government Department of Agriculture, Fisheries and Forestry in 1996 in response to recommendations of the Nairn Committee. The Office provides a national and international focal point for Australia's plant health and protection in primary industries, to underpin quarantine and facilitate domestic and international market access by:

1. Coordinating national technical and operational plant health policy.
2. Managing and coordinating national responses to plant pest incursions and enhancing plant health preparedness in partnership with government and industry.
3. Facilitating enhanced competency and capacity in plant health in Australia.
4. Collating and managing information relevant to Australia's plant health status.
5. Coordinating strategic input into international plant protection policy and standards consistent with Australia's trading priorities and imperatives.
6. Regional capacity building to assist biosecurity planning, address threats to Australia's plant industries off-shore and assist Australia's trade objectives through development in areas of plant health diagnostic standards, specimen-based pest records and surveillance.

The Chief Plant Protection Officer (CPPO) manages the office and provides a focal point for several activities, particularly in relation to national coordination of responses to pest incursions and the national plant health policy network.

In practice this means that the Office has an interest in all aspects of Australia's plant health capability and capacity, as well as that of our near neighbours in the region.

Of particular focus is the ability of Australia to detect an emergency plant pest early enough for an eradication programme to be successful. To do this requires not only an effective surveillance programme but the diagnostic capacity to identify that a pest is actually exotic. Does Australia have the technical expertise to sustain diagnostic demands in the future?

How can we prepare in advance to expedite the emergency response to effectively and efficiently eradicate an emergency pest? PlantPlan is the emergency response plan for emergency plant pests. It outlines the roles and responsibilities of the key parties to a response. The Plan, which can be found on the Plant Health Australia website (www.planthealthaustralia.com.au) was brokered by this organisation with its members, which include the Australian and State/Territory Governments and member industries. In the event of an emergency, the technical input of plant pathologists becomes vital in ensuring that the eradication is underpinned by sound science.

Are Australia's technical experts able to make decisions that affect the cost and outcome of an emergency response on the basis of sometimes limited evidence? The Australian Plant Pest Database involves a consortium of collaborators with an interest and involvement in ensuring Australia's pest status is accurately recorded. What pests are in Australia? Are they in collections? Is the diagnosis correct? The Office coordinates the APPD Steering Committee and provides funding to update and verify records. The validated pest records are used to support quarantine and export market access policy and are the first reference point when a possible new pest is reported.

Regional capacity building activity has been largely focused on the fostering of specimen-based pest records in the region. This extends to the collection of specimens through surveys, their identification and preservation and recording. This can help the country to better represent its plant health status to trading partners, in much the same way as the activities underpinning the APPD help Australia.

How does this all fit together?

Biosecurity is defined as the protection of the economy, environment and human health from negative impacts associated with pests, diseases and weeds.

It includes measures to:

- prevent new pests, diseases and weeds entering and establishing;
- manage established pests, diseases and weeds to eradicate where feasible or contain and mitigate impact;
- ensure appropriate preparedness and response capacity which is internationally recognised and meets our trading obligations and international treaties; and
- maintain or improve the status of Australia's biosecurity system.

The Australian Biosecurity System for Primary Production and the Environment is designed to maintain or improve the nation's biosecurity status. It brings together all activities in this area being undertaken by the Australian Government, States and Territories, as well as industry, landholders and other key stakeholders. It establishes a policy framework for greater national collaboration on biosecurity issues both within and across jurisdictions and with key stakeholders in the primary production and natural resource management sectors. It builds on the specific industry and pest based strategies, legislation and operational procedures that are already in operation.

Protecting the favourable health status of Australia's agricultural industries and the environment is of prime importance to the nation. Australians place a high value on preserving our unique environment and biodiversity for future generations.

Australian agriculture is strongly export focused, and our health status is crucial to maintaining and developing our overseas markets. Until recently, Australian biodiversity has also evolved in isolation, and is particularly vulnerable to the impacts of exotic invasive species. For these reasons, successive Australian Governments have maintained a conservative approach to the management of biosecurity risks. World trade continues to expand rapidly, the movement of people and goods is becoming quicker and easier, and there is an increasing demand from domestic and international consumers for production systems that produce safe food that respects environmental and welfare concerns. While these changes offer Australia opportunities, they also present new challenges including increased risks from exotic pests and diseases, an increasing incidence domestically and overseas of new and re-emerging diseases, and heightened concerns about national security.

Everyone benefits from good biosecurity systems. It provides protection for Australian businesses and jobs in primary production and related industry sectors such as eco-tourism, hospitality, travel and tourism. It also protects our unique native flora and fauna along with our individual quality of life.

The Biosecurity System has five key objectives:

1. Prevent the entry and establishment of identified target exotic pests, diseases and weeds that pose a major biosecurity threat to Australia.
2. Cost effectively minimise the likelihood of entry and establishment of other new incursions of exotic pests, diseases and weeds in Australia.
3. Eradicate where practicable, or contain and control and mitigate, the impact of established invasive organisms that have a major economic, social, health or environmental impact, and including established 'sleeper' organisms that have the potential for major impact.
4. Manage the impact of, or contain and control at jurisdictional, regional, industry sector or local levels other pest, disease pathogens and weeds that have established in Australia.
5. Mitigate adverse impacts of exotic species introduced for production and other beneficial purposes.

These objectives mesh well with existing national plant health objectives that are delivered through the provision of:

1. Pre-border policy and border activities undertaken by Biosecurity Australia and the Australian Quarantine and Inspection Service in keeping disease risks off-shore.
2. Emergency response preparedness activities coordinated through Plant Health Australia, governments and industry sectors and codified in Industry Biosecurity Plans.
3. Emergency response implementation, including early intervention capacity and capability, which is delivered largely by government with the guidance of the national emergency response plan for plant pests (PlantPlan) but increasingly in partnership with the relevant industry or environment sector.
4. Research, development and infrastructure to manage, contain and control pests already in Australia with a view to foster long-term, sustainable production. Fostered by shared funding arrangements and delivered through many agents, including universities, CRCs, state government, industry organisations and the private sector.
5. New technology in optimising disease management and prevention, including biotechnology and other breeding advances, biological control and development of technological tools for rapid pathogen diagnoses and remote surveillance.

Future challenges

Plant biosecurity, in its broadest sense, is a shared responsibility. We all have a stake in the biosecurity of Australia and we all contribute to it. The Office, and the Chief Plant Protection Officer, provide a vehicle to coordinate

a national focus on Australia's plant health needs and the infrastructure to support them in the future.

I encourage all plant pathologists to look closely at themselves and the obligation they have to Australia in ensuring that our current plant health status is not compromised through carelessness in handling plant pathogens, or failing to advise when something new is found. I also encourage APPS members and colleagues to ensure our profession is given the recognition it deserves in supporting Australia's vast plant resources for future generations. I invite you to draw a metaphorical box around what you do in your work and then challenge you to take a step outside that box. Think about what it is you do and then about why you are doing it. What is your contribution to both the discipline and to achieving the specific work outcomes you are seeking? How does it fit with what your colleagues, managers, organisations are contributing and their objectives? How does it fit with the objectives of your clients or those that benefit from your contribution?

The ultimate challenge for Australia is to improve its plant biosecurity status for the future health, wealth and wellbeing of our children and grandchildren. Plants underpin nearly all our primary production exports and are a major factor in all that is unique about Australia's flora and fauna. Australia must enhance its capacity and capability to sustain these resources. To be successful, all plant health practitioners must work together, within and through their organisations and networks.

What can you do?

1. Register your plant health expertise on the Plant Health Australia Expertise Register. Details can be found on the PHA website.
2. Remember this number – 1800 084 881. It is the number to call if you find a new pest or disease and will immediately initiate appropriate local and/or national action within the emergency response framework. Remember that an early response provides the best chance for eradicating a new incursion.
3. Be vigilant in handling and containing pathogens that could compromise Australia's biosecurity status.
4. Keep up-to-date on national plant health initiatives by subscribing to the OCPPO newsletter or following the links to plant health on the Department website (www.daff.gov.au). Email: ocppo@daff.gov.au for details.

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