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Opening Address
VIII International Symposium on Biological Control of Weeds

The Reorganisation of Research and Development in New Zealand, and the Evolution of Weed Biological Control

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Distinguished visitors, colleagues, friends and guests, it is my pleasure to welcome you to this *VIII International Symposium on Biological Control of Weeds*, the eighth in a highly successful series of Symposia, and the most important international forum for the exchange of ideas and information in this field.

The very first *Symposium* was held in Délèmont, Switzerland, and had 22 participants. For this eighth *Symposium* there are over 180 people from 21 countries and 50 organisations. This is an increase of some 50% on the Rome *Symposium* in 1988. This is only the second time the *Symposium* has been held in the Southern Hemisphere; Brisbane 1980 was the first. New Zealand is clearly a favoured place to visit, but the fact that the *Symposium* has so many participants this year rather more reflects a growing recognition world wide of biological control as an effective, safe and established method of weed control.

New Zealand has a long history of research in biological control of weeds. However, the activity only developed in a substantial way from about 1980. We now have a comprehensive programme involving several major weeds of natural and modified environments and a suite of control agents has been introduced or planned against each target species. This programme is only now moving into a major phase in which impact is being evaluated across the range of distribution of each of these weeds.

The increased public acceptance of biological control, as a component of an increasing thrust worldwide towards minimal use of pesticides, is reflected in the participation at this meeting. You will no doubt have noticed that over 13 organisations have shown sufficient confidence in the future of biological control in New Zealand that they chose to join in sponsorship of the *Symposium*. These are largely the organisations with which the Department of Scientific and Industrial Research (DSIR) Plant Protection has developed a thriving extension network in its biological control of weeds programme. We welcome representatives of those organisations to this symposium, and you will hear more of the extension network during the meeting.

If you visited New Zealand about two years ago, you would have found a number of Universities, the Forest Research Institute at Rotorua and a substantial research and development capability in agriculture and horticulture in the Ministry of Agriculture and Fisheries (MAF) throughout the country, all engaged in Crown-funded scientific research. The DSIR had just completed an internal restructuring, to reduce its 26 Divisions to 10. New Zealand's Meterological Service (Met) was a distinct entity. In the past five years or so, a major reorganisation of New Zealand's science has been taking place. The main elements are as follows. The New Zealand Government first evolved a body to control science funding, the Foundation for Research, Science and Technology (FRST) and funding is now managed through an annual, peer reviewed,

contestable bidding process. A separate body, the Ministry of Research, Science and Technology (MORST), was established to provide advice on science policy and science priorities that government requires.

These functions (funding, policy advice and science priorities) were previously operated through the science Departments (DSIR, MAF, Ministry of Forestry–MOF, and Met). It was perceived that fulfilling these functions and providing science, might be in conflict.

Now, the role of these science Departments is clearly focused on the provision of science; indeed the jargon refers to them as "science providers."

To complete a reshaping of New Zealand's public sector science, a reorganisation of the science providers has been underway for some time, and had been suggested for some years, by successive governments. The basic reasons for this change include:

- perceived duplication and competition in science;
- lack of clear sector/resourcPe focus;
- deficiencies in the commercial powers available to current science organisations;
- the need to better target scarce research dollars; and
- the need to develop science as a basis for New Zealand's economic recovery.

The outcome of the reorganisation, which has been developed quickly, mostly efficiently, and by a wide consultative process, is the formation of 10 new Crown Research Institutes (CRIs) that will be set up as companies. By 1 July 1992 the 10 Institutes will be fully operational and from that date they are the bodies with whom you will deal.

The CRIs are comprised from former DSIR, Ministry of Agriculture and Fisheries Technology (MAFTech) and MOF elements. Bodies which are sector-focused now (like DSIR's Grasslands and Crop Divisions) move into the relevant CRI almost unchanged.

Discipline-based bodies like DSIR Plant Protection however, are widely split, in the interests of achieving "vertical integration" in the recipient CRIs.

The new Landcare Research NZ Ltd is of special interest to this *Symposium.* It brings together in one CRI all of the elements that are required in a truly comprehensive weed biological control programme: biological control specialists, botanists, taxonomists, and ecosystem modellers. All of these disciplines can contribute to both establishing well-structured programmes, and carrying them through in the long-term to an effective conclusion that includes thorough evaluation of impact of the biological control agents . This is one case where the reorganisation demonstrably enhances current projects.

John Stocker, the Chief Executive Officer of Australia's Commonwealth Scientific and Industrial Research Organisation has expressed surprise that New Zealand is doing away with internationally-known and respected organisations like DSIR and MAF, and discussed a number of his concerns for the future. But how the reorganisation will really work out overall, could take a decade of operation of the new CRIs. There may yet be further evolution of New Zealand's research effort, in particular if a CRI proves not to be a financially-viable, profit-making, tax-paying entity, as it is charged to be.

Overall, the process of change to New Zealand's science will reach a key point in July 1992. By then all of the component parts will be in place, including:

- ***Making decisions.*** Government, through its Cabinet Committee on Education, Science and Technology, and the Minister of Research, Science and Technology will serve this role.
- ***Developing policy advice to government and funding science.*** MORST interacts both with the Royal Society in providing policy advice, and with FRST in the latter's funding role.
- ***Providing science and technology.*** Defined, sector- and resource-focused, vertically-integrated companies, called CRIs will lead the way in providing science and technology.

I'd like to comment briefly on weed biological control, but I'm conscious that Dr. Richard

Groves will shortly address the topic *Biological Control, Past, Present and Future.*

Biological control is operated internationally to very high, self-imposed standards. In various countries there is increasing public concern that the natural environment should be protected, and in some cases there are specific concerns from those likely to be disadvantaged by effective biological control.

In Australia and New Zealand, the approaches may be different in initiating weed biological control programmes, but the end is the same: there is consideration of the target of biological control, and there is consideration of the biological control agent, in particular its host-specificity. The process is managed by the designated regulatory authority, and there is appropriate public and peer input. In the United States, I understand, the process is similar.

It is perhaps a signal for the future, for the many countries that may not have such systems, that this has now been considered internationally, by the Food and Agriculture Organization (FAO) of the United Nations expert consultation on guidelines for the introduction of biological control agents (Rome, September, 1991).

The consultation arose because in many countries these systems were outdated, or there were no regulations for biological control agent introduction. Thus authorities may not know what procedures to follow.

The *Code of Conduct* that has now been developed provides the basis for a common system of good practice for all scientists to abide by, world-wide, whether or not the *Code* has the force of law. FAO is now circulating this unofficial *Code of Conduct* for ratification by contributing countries and it will be discussed further at the next FAO technical meeting in May 1992 in Rome.

Weed biological control has an excellent history both of success and of safety. This *Symposium* has an excellent programme, and is very wide-ranging, from theory to application to evaluation of impact, even to deriving lessons by which we may operate more successfully. The composition of the programme in general reflects the very wide range of habitats in which weed biological control is attempted. Insect biological control by contrast is largely dominated by control of insects of production crops. Perhaps weed biological control is more concerned with control of exotic plants in natural environments.

From the topics presented here, and indeed from the title of the *Symposium* title one can conclude that biological control of weeds is being practised widely and with spectacular success in some cases. However, the discipline largely features what one might call classical biological control, and there are few signs that this is being developed within a context of integrated weed management. Perhaps in this regard it is significant in New Zealand, not only that biological weed control tends to focus more on the natural environment, and chemical control and management of weeds on the agricultural and horticultural environments, but that biological and chemical control of weeds will continue in different CRIs.

It is encouraging to see papers describing the application of new technologies to the discipline of weed biological control. In the coming years I'm sure that this will increase. I refer to recombinant DNA technology as an aid to species definition, perhaps also genetic manipulation to produce more effective mycoherbicides. I'm sure that there will be many other applications of this technology.

Weed biological control must continue to evolve. In my view this means within an overall context of integrated weed management, and where possible; by the adoption of relevant new technologies.

Weed biological control is a long-term activity. It deals with the complex interaction of agent and target, and a successful programme, which includes target definition, agent selection, evaluation, introduction, and release, and importantly evaluation of impact, may take many years.

Where successful target control depends upon a suite of complementary agents we may be talking of decades rather then just years. There is no doubt that the direct intrinsic benefits to both natural and modified environments from successful weed biological control are very important and often of considerable economic value. The benefits accruing from biological control in terms of reduced herbicide use are considerable, too.

My conclusion is that weed biological control has a commendable record of significant successes and a very bright future ahead BUT administrators and fundors must realise the complex and long-term nature of the activity and provide secure funding for a commensurate period. By "long-term," I mean significantly longer than just one or two years.

I hope you have a most enjoyable *Symposium*, in these excellent conference facilities, made available by Lincoln University.

Ladies and gentlemen it is my very real pleasure to declare this *Symposium* open, and to ask our Chairman to introduce tonight's opening speaker.