

SESSION 10.

ORGANISATION OF WEEDS RESEARCH AND EXTENSION IN AUSTRALIA

1. Victoria

The main weed research in Victoria is carried out by the Department of Crown Lands and Survey, Department of Agriculture, the State Rivers and Water Supply Commission, and several commercial firms. Other Government Departments such as the Victorian Railways and the State Electricity Commission have lesser research programmes on weed control. Extension work is carried out by both the Department of Lands and the Department of Agriculture.

2. Western Australia

The Weeds and Seeds Branch of the Department of Agriculture is responsible for weeds research and the major portion of the weed control extension service in Western Australia. In addition to the Officer-in-charge there are two graduates on the Head Office staff and five district weed control officers (non-graduates) located at different centres.

The weeds research is under the control of the trained staff and the field officers of the branch undertake advisory and inspectorial work. Some advisory work is also carried out by technical field officers of other branches in consultation with the weeds and seeds branch. The branch staff referred to above is also associated with seed production, certification and inspection.

3. Tasmania

Research on methods of weed control is the responsibility of the Agronomy Division of the Department of Agriculture. The general direction comes under the Chief Agronomist at Hobart. There is a Senior Agronomist at Launceston, (part time on weed research), an Agronomist at Burnie, (part time on weed research), and an Assistant Agronomist at Hobart (full time on weed research). Nearly all experimental work is on weeds of agricultural importance but a small amount has been commenced on roadside growth for the Public Works Department, by the Agronomy Division.

Extension work on weed control is primarily the responsibility of the Extension Service of the Department of Agriculture. There are thirteen districts, each with a District Agricultural Officer, and of these, eight have also an Assistant District Agricultural Officer. These Officers answer farmers' enquiries, using information supplied by the Agronomy Division in the form of Journal articles, roneoed sheets, correspondence or verbal advice. New weed problems

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and plants for identification are forwarded to the Chief Agronomist together with particulars of the infestation. When requests for information are received by the Agronomy Division from farmers directly, a copy of the reply is sent to the appropriate District Agricultural Officer or if of general interest, to the Chief Extension Officer.

Extension work on proclaimed noxious weeds is also carried out by municipal inspectors. They are advised by the Chief Agronomist who is also Chief Inspector of noxious weeds in Tasmania. The municipal inspectors are also advised on the application of The Noxious Weeds Act. Regular contact with the forty-nine Municipal Inspectors is maintained through Agronomists stationed in three regions, North Western (Burnie), Northern (Launceston), and Southern (Hobart).

4. Queensland

Research and extension work on weeds in Queensland is carried out by the Department of Agriculture and Stock, the Department of Public Lands and the Bureau of Sugar Experiment Stations. Some work on particular problems is also undertaken by the Forestry Department and the Main Roads Commission.

The Noxious Plants Consultant Sub-committee of the Stock Routes Co-ordinating Board meets every three months to discuss current weed problems and advise the Board on plans for weed control programmes and experiments and declarations of new plants as noxious. This sub-committee consists of representatives from the Department of Public Lands, the Department of Agriculture and Stock, the Department of Local Government and primary producers organisations.

Department of Agriculture and Stock:

Within the Department of Agriculture and Stock, the Botany Section is responsible for identification of weeds, advice on control measures and field experiments on the control of certain species. The Government Botanist is a member of the Noxious Plants Consultant Sub-committee of the Co-ordinating Board and it is his responsibility to advise on the potentialities of any plants which might become weeds in this State. Ecological studies on weeds are also handled by the Botany Section. The section is also carrying out experimental work on aerial spraying of brigalow and treatment of eucalypts with hormone weedicides.

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Officers of the Horticulture Branch carry out field experimental work on weeds of vegetable and horticultural crops including pineapples, bananas, citrus and other fruits. Field officers of this branch are also active in extension work on weed control by directly advising farmers.

Officers of the Agriculture Branch carry out field trials on weeds of arable land and of improved pastures. This work includes studies of narrow leaved carpet grass, blady grass, bracken fern and weeds in grain crops. Officers of the branch give direct advice to farmers on weed problems and also maintain close contact with the Botany Section.

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Department of Public Lands:

The Biological Section of the Department of Public Lands is wholly concerned with weed control by chemical and biological agencies, including surveys to determine the distribution and importance of particular weeds. Its work is carried out on behalf of both the Department of Public Lands and the Stock Routes Co-ordinating Board.

Co-ordinating Board:

Through the Stock Routes and Rural Lands Protection Act, the Co-ordinating Board, operating through Local Authorities, possesses full legislative powers to proclaim plants noxious and to enforce their destruction on rural lands in Queensland. Furthermore, it is empowered to make arrangements with City and Town Councils and with Government bodies for the control of weeds in cities and towns and on land held by Crown instrumentalities.

Destruction of noxious plants on all stock routes and reserves fenced out of holdings is carried out by Local Authorities, the expenditure being met from the Stock Routes and Pests Destruction Fund. The term "Stock Routes" includes broadly all roads outside town and city areas. Furthermore, this Fund incurs the expenditure of supervisors employed by Local Authorities to superintend control of noxious plants by landholders.

The Board supplies Local Authorities with spray equipment for destruction of noxious plants on roads and reserves. Through Local Authorities, it sells at cost price or rents spray equipment to landholders.

The Board is empowered to appoint officers to carry out weed surveys and all necessary experimental work. Experimental and weed survey investigations are undertaken for the Board by the Biological Section of the Department of Public Lands.

The major attack on noxious plants is made under Simultaneous Destruction Schemes, in which defined areas are declared in the Government Gazette whereby simultaneous action must be taken to destroy one or more specified noxious plants on individual properties by landholders and on roads and reserves by Local Authorities. Supervisors are appointed to superintend the work of landholders. Supplies of hormone weedkillers and of knapsack sprays are made available at local centres for sale to landholders at cost price. In addition, in certain areas power spray plants are supplied to Local Authorities for hire to landholders. Many Simultaneous Destruction Schemes are in operation in various parts of the State for the destruction of such weeds as Noogoora burr, Groundsel Bush, Hemlock and Clockweed.

Another objective of the Board is the eradication of newly established weeds of potential danger. In this connection active operations are under way to eradicate infestations of Sneezeweed (Helenium tenuifolium), Burr Ragweed (Franseria sp.), and Artichoke Thistle. Other projects of this nature are under consideration.

On the question of biological control, the Board has introduced and established the Stem Gall Fly of Crofton Weed, the actual operations having been carried out by the Biological Section.

Pamphlets have been issued on control measures advocated for specific noxious plants. Results of experimental work on weed control are supplied to Local Authorities from time to time.

Bureau of Sugar Experiment Stations:

The Bureau of Sugar Experiment Stations, which is no longer a branch of the Department of Agriculture and Stock, carries out specialised research and extension work on the control of weeds in sugar cane.

Forestry Department and Main Roads Commission:

The Forestry Department has done some work on the control of eucalypts and on mistletoe. The Main Roads Commission has co-operated in C.S.I.R.O. experiments on mistletoe control.

5. New South Wales.

In New South Wales research and extension on weed problems are principally the responsibility of the Department of Agriculture. The Department of Agriculture has one full time Weeds Officer engaged mainly in extension and administration. There are two agronomists who spend part of their time on weeds research, one field assistant who does both research and administration and 32 District Agronomists who include advice on weed control as part of their extension activities and who also do some field experiments on weed control.

The Prickly Pear Commission is mainly an administrative body, but does some advisory work on prickly pear control.

The N.S.W. Forestry Commission have one or two research officers engaged part time on weed problems associated with silviculture.

6. C.S.I.R.O.

C.S.I.R.O. is concerned only with research and its policy is to investigate weeds of major importance in more than one State. Biological Control, the ecology and physiology of weeds are of major interest.

7. South Australia.

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ORGANIZATION OF WEEDS RESEARCH AND EXTENSION IN SOUTH AUSTRALIA.

A. RESEARCH.

1. Project Initiation:

State-C.S.I.R.O. Weeds Co-ordination Committee	State Noxious Weeds Advisory Committee	Advisory Committee, Country Research Centres (Dept. of Agriculture)
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2. Conduct of Project:

State Department of Agriculture (Agriculture Branch, Weeds Section)
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3. Co-opted Organisations:

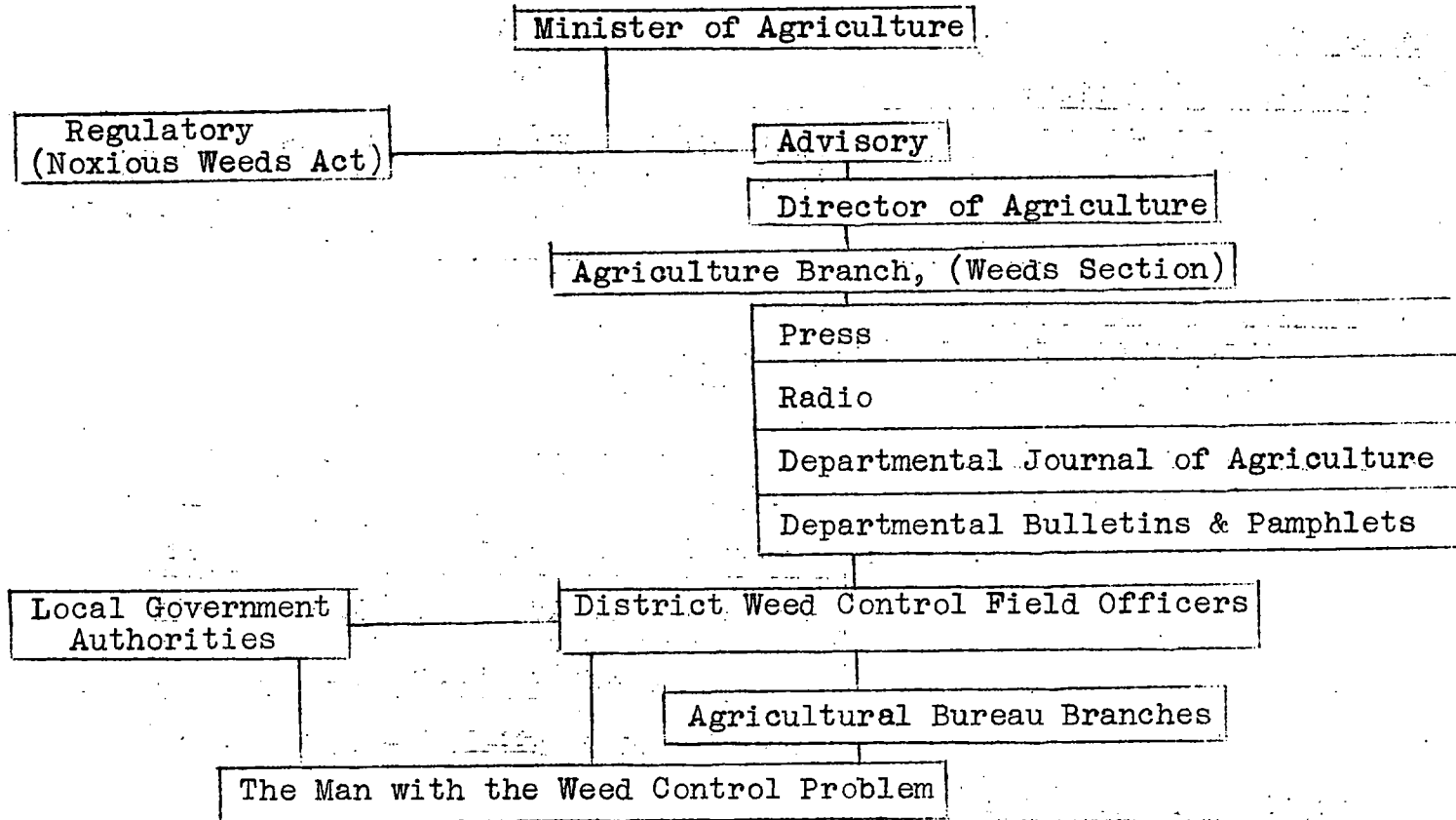
C.S.I.R.O.
Commercial Interests
University of Adelaide (Waite Institute)
Roseworthy Agricultural College
Other State Government Departments

4. Location of Projects:

Departmental Re- search Centres	Public Utilities	Landowners	Local Government Authorities
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Results to Extension Field

B. EXTENSION.



SUMMARY OF RESEARCH INVESTIGATIONS:

WEEDS SECTION, DEPARTMENT OF AGRICULTURE, STH. AUST.

1. Skeleton Weed (Chondrilla juncea) Control Trial.

A rate-of-application trial comparing different hormone-like weedicides. Results to date inconclusive.

2. False Caper (Euphorbia terracina) Eradication Trial.

Project in second season; results to be confirmed by further work; mixed 2,4-D/Sodium chlorate sprays show promise.

3. Wild Tomato (Solanum ellipticum) Eradication Trial.

Trial only in first season; regrowth observations necessary to confirm apparent success of butoxyethanol ester 2,4-D formulations.

4. Wheat Variety Tolerance to 2,4-D and M.C.P.A.

Commenced 1953-54 season with ten leading varieties grown in South Australia; varieties sprayed at six different growth stages. Indications that tolerance varies with variety. 1954-55 trial includes all varieties currently grown at Departmental Research Stations for seed wheat production and observation.

5. African Daisy (Senecio pterophorus, var. apterus) Control Trial.

Competing pastures, cereal cropping and chemical methods are being tested. Project entering second season; further season's work necessary to facilitate assessment of results.

6. Soursob (Oxalis pes-caprae) Control Trial.

Results show possibility of economic elimination of soursob growth from established lucerne oversown with barley using sprayed solutions incorporating hormone weedicide 2,4-D and sodium chlorate. Observations in subsequent seasons necessary to determine permanency (if any) of kill of soursob.

7. Spiny Emex (Emex australis) Eradication Trial.

Chemicals employed gave insignificant control of spiny Emex; pasture species suffered more damage than weed. Further work necessary.

8. Cape Tulip (Homeria spp.) Eradication Trial.

Various hormone-like weedicides under test. Observations on growth of weed on trial site during 1954-55 and subsequent seasons necessary to determine success of treatments.

9. Tall Fescue (Festuca arundinacea) Eradication Trial.

Trial indicated tall fescue can be eliminated with sprayed application of TCA. Further work necessary to determine:-

- a. comparative efficiency of TCA, sodium chlorate and ammonium sulphamate ("Ammate"),
- b. economics of application of chemical treatment when compared with mechanical removal of tall fescue.

Project to be expanded to include Lower South East areas of infestation in trials.

10. Blackberry (Rubus fruticosus) Eradication Trials.

Test chemicals incorporating non-volatile esters of 2,4,5-T are being compared with commercially-available 2,4,5-T formulations in this project. Project commenced December-January period this season; no results yet available.

11. Chemical Control of Channel Weed Growth.

Various formulations of hormone-like weedicides based on esters of 2,4-D are under test. Some treatments show promise, and chemical eradication of bulrush (*Typha angustifolia*), economic under certain conditions appears possible outcome of trials.

12. Sand Rocket (Diplotaxis tennifolia) Eradication Trials.

Various hormone-like weedkillers, cultivation methods and competing crops are being tested. Trials commenced 1954-55 season.

13. State-wide Weed Incidence Survey (General Reconnaissance Survey).

Involves recording occurrence of weed species in all districts, work being carried out in course of general duties.

Information collected is supplied to specialist officers undertaking periodic revision of "Flora of South Australia", to weed control research officers of C.S.I.R.O., Canberra, and to commercial interests (weed control contractors and herbicide manufacturers and retailers).

General Extension Work Relating to Weed Control.

Routine weed control advisory services are available in all districts. Sizes of districts allotted weed control Field Officers renders it impossible for personal attention to be given to weed problems of more than a few individual land holders; through the medium of the Agricultural Bureau Branches, however, the volume of enquiries is reduced to within manageable limits.

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