Is N208 available Thursday 20th Sept. 1.30 3.00 pm. J. Newman

Jim Sigala

Peter Michael

THE WEED SOCIETY / OF NEW SOUTH WALES

P.O. Box K287, Haymarket, N.S.W., 2000

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JULY, 1979

NOTICE OF SYMPOSIUM

THURSDAY 16TH AUGUST : 2.00 P.M. - 6.00 P.M.

ROOM N208, WOOLLEY BUILDING,
UNIVERSITY OF SYDNEY

SYMPOSIUM ON "Direct Drilling and No-Till Farming in N.S.W. - Present Situation, Potential, Problems and Possible Consequences"

Programme Details

1.30 - 1.50 pm Registration
1.50 - 2.00 pm Opening of Symposium

2.00 - 3.30 pm Prof. F. Crofts - University of Sydney

- "Some Experiences with Direct Drilling in North Western N.S.W. and the U.S.A."

W. Felton and B. Scarsbrick - N.S.W. Dept. of Agriculture

- "The No-Till Fallow and Direct Drilling Project Teams in North and South N.S.W."

Mr. D. B. Jones - Division of Plant Industry, C.S.I.R.O., Canberra.

- "The C.S.I.R.O. Experience with Direct Drilling on the Southern Tablelands"

3.30 - 4.00 pm AFTERNOON TEA

4.00 - 5.30 pm Peter Desborough - N.S.W. Dept. of Agriculture

- "Direct Drilling on the North Coast of N.S.W. with Special Reference to Soybeans and Spray Additives.

David Marston - Soil Conservation Service.

- "A Soil Conservationists Viewpoint of Direct Drilling and No-Till Farming".

Farmer

- "No-Till Farming and Direct Drilling - A Farmer's Viewpoint"

Mike Barrett - I.C.I. (Aust.) Ltd.

- "Direct Drilling of Rice and Winter Cereals in Southern N.S.W."

5.30 - 6.00 pm Panel Discussion on

- "Problems and Future Possibilities of Direct Drilling and No-Till Farming"

6.00 pm SYMPOSIUM ENDS

REFRESHMENTS AND DINNER ARE AVAILABLE AT THE UNIVERSITY STAFF CLUB.

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INTERNATIONAL WEED SCIENTISTS FOR LOCAL CONFERENCE

Three leading international weed scientists will be in Western Australia in September to attend a major weeds conference being organised by the Weed Society of Western Australia.

The Conference will be held at Muresk Agricultural College from September 3 to 6, 1979.

The international speakers are two Englishmen and a Canadian.

Dr. J. Newman from ICI (Plant Protection Division) in England, will give the keynote address at the conference, on herbicides and the environment.

Mr. I. Logan, also from ICI (Plant Protection Division) in the United Kingdom is an ex pert on spraying equipment.

Dr. C. W. Lindwall is an authority on minimum tillage techniques of crop establishment from the Canadian Dept. of Agriculture.

The theme of the conference is weed control - a key to agricultural progress. It is expected to attract 150 farmers, research workers, advisors and industry representatives from throughout Australia.

An important field day at Avondale Research Station has been organised in conjunction with the Dept. of Agriculture for Wednesday, September 5 as part of the conference. Trials and demonstrations have already been laid down to illustrate conference papers. The field day will also feature the historic machinery museum at Avondale and demonstrations of the most modern weed spraying equipment.

The Weeds Conference is being held as part of the State's 150th year celebrations. A Government grant from the 150th year committee is being used to fly in the international speakers.

Conference delegates will be accommodated at Muresk. A conference dinner will be held at El Caballo Blanco.

The all inclusive cost of the week's conference varies between $75 and $100 depending on the accommodation needed.

Everyone interested in attending the Weeds Conference should contact the Secretary of the Weed Society, Mr. Peter Rutherford, at the Department of Agriculture for a registration form.

Mr. Rutherford said numbers would be limited and early registration was desirable.

PROPOSED FIELD TRIP TO WAGGA - COWRA AREA IN LATE SEPTEMBER, 1979

It is proposed that a field trip to inspect weeds and weed control trials in winter growing crops in the Wagga-Cowra area be held in late September.

It is envisaged that the Field Trip will start at Wagga at approximately 10.00 am and finish at Cowra the next day around 4.00-5.00 pm. This will allow people who are travelling by plan from Sydney time for plane connections. Some spaces are available in Departmental cars for people coming by plane.

Sites for inspection will include

- herbicide variety trials in wheat
- weed control trials in rapeseed and lupins.
- crops established by direct drilling and no-till farming methods.
- weed control in cherry and prune orchards at Young.
- Edgell's vegetable growing area near Cowra.
- and other areas as arranged.

Would persons interested in going on this field trip contact either Andrew Leys, Wagga (069) 23 0999 or Jack Burke (02) 428 1966 so we can get an idea of the actual numbers likely to be involved.

Accommodation would be available in Wagga.

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PART 1 OF GLOSSARY OF TERMS IN WEED SCIENCE PREPARED BY EXPERT COMMITTEE ON WEEDS, CANADA.

Acid equivalent (ae)	The theoretical yield of the parent acid of a herbicide in a formulation.
Active ingredient (ai)	The agent in a formulated product that is responsible for herbicidal effects (would include derivatives of acids).
Acute oral LD_{50}	In toxicity studies it is the single dosage fed to test amimals that will kill 50% of them. See LD_{50}.

Antagonism	Opposing action of different chemicals such that the sum of the effects is less than the total effect of the two chemicals used alone.
Antidote	An immediate or first aid treatment or remedy to offset the effects of a toxic pesticide chemical or other poison in the body. Also applies to remedies for overcoming pesticides in the soil.
At-cracking	Application of herbicide at a time when the soil is beginning to crack, from the emerging crop seedlings.
At-emergence	Treatment applied when the specified crop or weed is emerging from the soil.
Band treatment.	The herbicide is applied in bands over or between the rows rather than over the entire field.
Basal bark treatment	Treatment applied around the trunk of a tree at and just above the ground level.
Biosssay	Determination of the concentration of a herbicide (or metabolite) by use of a sensitive indicator plant or other biological organism.
Biological control of weeds	Reduction of a weed problem by the manipulation of one or more organisms, the weed or the environment.
Brush control	Control of woody plants such as trees, shrubs and vines etc.
Calibrate	To measure or determine volume of spray mixture or dust being applied over a given area.
Carrier	A liquid, solid, or gas used to facilitate the application of a herbicide to a plant.
Chemical name	The name given to each herbicide based on its chemical structure. Example: the chemical name of 2,4-D is 2,4-dichlorophenoxy acetic acid ($C_8h_6C_{12}O_3$).
Chlorosis	Abnormal condition in plants characterised by loss of green color.
Chronic toxicity	Deleterious effects from long term exposure to low levels of pesticide chemical on an organism.
Contact herbicide	A herbicide that is toxic only to the plant tissues on which it lands as opposed to a translocated herbicide.
Defoliant	A chemical which causes leaves to drop from a plant.
Degradation	A general term applied to the breakdown of a

	complex chemical by the action of microbes, water, air, sunlight or other agents.
Dessicant	A chemical used to accelerate the drying of plant tissues.
Diluent	Any usually inert gas, liquid or solid material used to reduce the concentration of a herbicide.
Directed spray	A spray directed onto the weeds or soil in such a manner as to avoid contact with the crop.
Dormancy	State of inhibited germination of seeds or growth of plant organs. A state of suspended development.

WEED CONTROL DEMONSTRATION UNIT

A weed-control-demonstration unit has been set up by the Department of Agriculture at Orange. The aim of the unit is to do simple on farm screening and demonstration trials which do not clearly fit into either research or extension programmes. Immediate problems facing farmers can often be answered by relatively simple on-farm adaptive research. It may involve chemical screening, a simple comparison of different techniques of the bringing together of several findings into a management system that can be tested on the farm.

Current projects include -

* Alternative herbicides to 2,4,5-T for use on blackberries.
* Control of spiny burr grass by pasture improvement.
* Control of ground cherry.
* Control of silver leaf nightshade.
* Control of polymeria.
* Control of coolabah seedlings.

Personnel engaged in the project are Brian Scarsbrick (extension) Bruce Auld (research) and Barry Milne (field assistant). Projects are generally set up in conjunction with District Agronomists or Weeds Field Officers.

Finance for the project comes from a Commonwealth Extension Services Grant.

DISTRIBUTION, DISPERSON AND REGENERATION OF JOHNSON GRASS

By Noeline Monaghan,
Agricultural Research Centre,
Forest Road,
ORANGE. N.S.W. 2800

The biology and control of Johnson grass (Sorghum halepense (L.) Pers.) have been studied extensively especially in the U.S.A. Herbicides, for example glyphosate and tetrapion, are available for its control. New methods of herbicide application such as the recirculating sprayer and the weed roller offer selective control in crops on the basis of height differences.

However, some information that may be useful in co-operative control programmes is not available. Apart from herbarium specimens there was previously no record of the extent and distribution of Johnson grass in New South Wales. It is not known which infested situations are most likely to be sources for spread to uninfested areas. Although some possible agents for dispersal, for example river flow, are suspected no evidence has been collected to indicate actual agents for dispersal. No comparison has been made of the costs of Johnson grass infestations with the cost of its control. A project, conducted at the Agricultural Research Centre, Orange, aims to provide some information on the extent and distribution of Johnson grass and agents for its dispersal.

Replies to a questionnaire sent to all Local Councils indicate that there are 78,722 ha agricultural land, 19,781 km roadsides, 761 km railways and 313 km riverbanks infested in this state. Johnson grass is most common in northern New South Wales especially the Northern Slopes. Some small areas mainly irrigation and roadsides are infested in southern shires.

Riverflow and grader movement as agents for dispersal are being studied. Low numbers of seed have been trapped in the Bell River near Wellington although none was trapped in the main channel of the Buddah Lakes Irrigation Scheme at Narromine. Viable rhizomes were found in a stockpile of earth moved in roadside grading. The stockpile was in a previously clean area 3 km from the graded site.

Evaluation of repeated slashing with and without broadcast sowing of other species as a means of control is being carried out at Neurea near Wellington. At present the effective control of Johnson grass is almost totally dependent on herbicides.

The role of rhizomes and seeds in the regeneration of established infestations is also being studied. Results to date indicate that the majority of spring shoots arise from rhizomes and that 75% of seed produced is lost from some sites.

DIRECT DRILLING AND REDUCED CULTIVATION IS "ON THE MOVE" IN N.S.W.

In 1978 a total of 80 farmers sowed 4,000 hectares of wheat using direct drilling or reduced cultivation techniques.

This year as fuel costs skyrocket, interest is running high and it is anticipated that 160 farmers will sow 12,000 hectares of wheat using the new techniques.

During 1978 a co-operative project team consisting of extension and research personnel from the Department of Agriculture and I.C.I. Australia was formed to co-ordinate the demonstration trails and provide technical backup to district agronomists.

A total of 19 demonstration trials were established by 9 district agronomists and A. McNeill, with farmer co-operators from Mudgee in the north to Albury in the south.

The trials compared a 5-10 ha block of conventional cultivation with reduced cultivation (one cultivation, spray and sow) and/ or direct drilling.

The project was funded by the Wheat Research Committee who purchased the Sprayseed (R).

I.C .I. (Aust) took a very responsible approach by appointing Mr. M. Barrett and Mr. E. Lloyd as members of a N.S.W. "ICI Sprayseed Team", to work exclusively with direct drill clients. The chemical Sprayseed (R) is not available "off the shelf" and can only be obtained after a property visit by a member of the "Sprayseed Team".

Hoechst Aust. Ltd., donated all Hoegrass (R) used in the trails.

Data on yields, weed control and soil conditions were collected on standard sheets by district agronomists.

Field days were held on most trial sites with the project team providing speakers where necessary. The wet season stimulated considerable interest in direct drilling techniques and most field days were well attended.

Wheat Yields

The average yields from the 16 trials harvested were:

Conventional Cultivation	3.90 tonnes/ha
Reduced Cultivation	3.98 tonnes/ha
Direct Drilling	3.50 tonnes/ha

It is apparent that high yields of wheat can be obtained using the new techniques and these yields are not significantly different to those obtained from conventional cultivation.

Brian Scarsbrick,
Special Agronomist (Weeds)
Orange.

NO-TILL FALLOW AND DIRECT DRILL PROJECT - NORTH WESTERN NEW SOUTH WALES

Alternative methods of land preparation in southern wheat areas have received attention for some years now. However, the techniques of minimum tillage which are used in the south are not feasible in the north because of the need to store fallow moisture. Traditionally clean cultivation from wheat harvest in December to sowing in the following May, June or July is used by all farmers in the North.

Growing costs have escalated substantially in recent years because of the rise in labour, fuel and capital investment costs. To look at an alternative means of fallowing and sowing wheat, a project team consisting of representatives from Research, Extension and Commercial organisations has been formed. At a meeting in Tamworth in December, 1978 the broad objectives of no-tillage were determined. These being:-

(i) To reduce production costs
(ii) To improve soil structure and reduce erosion
(iii) To maintain crop yields (compared to conventional methods) in the short term and possibly increase them in the long term.
(iv) To increase the cropping phase
(v) To improve timelinesss of operations
(vi) To reduce the weed problem because of minimum soil disturbance.

At a January meeting of the project team it was decided to evaluate the problem areas and the merits of no-till fallow and direct drilling at ten unreplicated observation sites throughout the North-West. These sites consist of approximately 10 hectares and are to be continued for

3 years. In the first year the major objective is to determine if a weed free fallow can be maintained by the use of herbicides at a commercial rather than an experimental level. The economics of the particular spray programmes are considered of minor significance for this season at least. The no-till fallow and direct drill sites in all cases are adjacent to conventionally ploughed areas.

There is also to be one site of no-till grain sorghum.

From the information derived from the observation sites it is envisaged that more detailed experiments will be undertaken.

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AN IMPORTANT NEW SERIES OF BOOKS ON WEED CONTROL METHODS

Series Editor, Edward O. Gangstad B.S., M.S., Ph.D. Botanist, Office of the Chief of Engineers, U.S. Department of the Army Corps of Engineers, Washington, D.C.

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