PROCEEDINGS OF THE
THIRD
BRITISH WEED CONTROL
CONFERENCE
1956

Norbreck Hydro, Blackpool
England

NOVEMBER 6th, 7th and 8th, 1956

The Conference was organised by the British Weed Control Council, Cecil Chambers, 86 Strand, London, W.C.2, from whom the proceedings may be obtained at two guineas each.
BRITISH WEED CONTROL CONFERENCE, 1956

ORGANISED BY

THE BRITISH WEED CONTROL COUNCIL

THE COUNCIL

President:
SIR JAMES A. SCOTT WATSON, C.B.E., LL.D.

Chairman:
*DR. E. HOLMES, Association of British Insecticide Manufacturers.

Joint Secretary/Treasurer:
MR. W. A. WILLIAMS, Association of British Insecticide Manufacturers.

Joint Secretary:
MR. S. A. EVANS, Ministry of Agriculture, Fisheries and Food, N.A.A.S.

Members:
*DR. R. de B. ASHWORTH, Ministry of Agriculture, Fisheries and Food, Plant Pathology Laboratory.
DR. E. E. CHEESMAN, Agricultural Research Council.
COL. J. F. CRAMPHORN, National Association of Corn and Agricultural Merchants.
*MR. C. V. DADD, Ministry of Agriculture, Fisheries and Food, N.A.A.S.
MR. A. T. DAVEY, Association of British Insecticide Manufacturers.
MR. M. N. GLADSTONE, Association of British Insecticide Manufacturers.
MR. A. D. HARRISON, Ministry of Agriculture, Fisheries and Food, N.A.A.S.
DR. R. G. HEDDLE, Department of Agriculture for Scotland.
MR. D. COLUMBUS JONES, Ministry of Agriculture, Fisheries and Food, N.A.A.S.
*MR. R. E. LONGMATE, British Agricultural Contractors Association.
MR. H. C. MASON, National Farmers Union.
MR. F. W. MORRIS, British Agricultural Contractors Association.
PROFESSOR J. MORRISON, Ministry of Agriculture for Northern Ireland.
MR. D. RHIND, Colonial Office.
DR. R. E. SLADE, National Farmers Union.
*DR. E. K. WOODFORD, Agricultural Research Council and Association of Applied Biologists.

* Members of the Conference Organising Committee.

Conference Treasurer: MR. W. A. WILLIAMS. MISS G. ROGERS acted as Treasurer during MR. WILLIAMS' absence.
Conference Secretary: MR. S. A. EVANS.
Programme Secretary: DR. E. K. WOODFORD.
Editor of Proceedings: MR. L. KASASIAN.

(47011)
In order to make the best use of the short time available for presentation and discussion of the large number of research reports that were submitted, they have been grouped into three categories:

1. Reports of special merit or interest. These were presented to the conference by the author and time allowed for discussion.

2. Reports which dealt with the same topic and could be grouped together. These were introduced by one person and time allowed for discussion.

3. Reports which could not be presented by the author or which did not seem to warrant special allocation of time for discussion. These were circulated to conference members, but not presented. They are included in the programme either in the appropriate session where they are marked with an asterisk (*) or at the end of the programme.

**Tuesday, November 6th**

<table>
<thead>
<tr>
<th>President's Opening Remarks</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are weedkillers being developed and used to ensure efficient food production?</td>
<td>1</td>
</tr>
</tbody>
</table>

**Chairman: The President**

'Veed control: a record of striking progress'.
Sir John E. Russell, F.R.S. ........................................... 3

'Chemical weed control and farming methods'.
Dr. R. E. Slade, Farmer: .................................................. 13

'Veedkiller usage in England and Wales: information from surveys of farm practice'.
Dr. D. A. Boyd, Rothamsted Experimental Station. (Read by Mr. E. R. Bullen, National Agricultural Advisory Service). ........................................... 17

Discussion introduced by Mr. J. R. Macdonald. ........................................... 22

**Chairman: Mr. R. E. Longmate**
(President of the British Agricultural Contractors Association)

'Factors influencing the farmer's acceptance of new techniques'.
C.P. Hirsch, Agricultural Economics Research Institute, Oxford. ........................................... 27

Short papers dealing with points raised in Mr. Hirsch's paper.
1. J. Rhys Thomas, Farmer.
2. A. J. Cannon, Farmer and Spraying Contractor. ........................................... 35

Discussion led by Mr. F. R. Scovell. ........................................... 37
### WILD OATS

**Chairman: Mr. F. R. Horne**  
(Director, National Institute of Agricultural Botany)

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>'The field problem'</td>
<td>43</td>
</tr>
<tr>
<td>C. V. DADD, National Agricultural Advisory Service</td>
<td></td>
</tr>
<tr>
<td>'Chemical methods of wild oat control'</td>
<td>49</td>
</tr>
<tr>
<td>DR. R. K. PFEIFFER, Fisons Pest Control Limited</td>
<td></td>
</tr>
<tr>
<td>'Experiments to control wild oat using ( \alpha )-chloro-( N,N )-diallylacetamide (CDAA) and 2-chloroallyl diethyldithiocarbamate (CDEC)'</td>
<td>55</td>
</tr>
<tr>
<td>R. D. BLACKETT, Monsanto Chemicals Limited</td>
<td></td>
</tr>
<tr>
<td>'Experiments with TCA for the control of wild oats in peas. Progress Report 1955'</td>
<td>65</td>
</tr>
<tr>
<td>HELEN M. HOLMES, F. GREGORY and J. M. PROCTOR, Fisons Pest Control Limited and Pea Growing Research Organisation</td>
<td></td>
</tr>
<tr>
<td>'Further experiments on the control of wild oats in peas. Progress Report 1956'</td>
<td>69</td>
</tr>
<tr>
<td>J. M. PROCTOR and W. A. ARMSBY, Pea Growing Research Organisation</td>
<td></td>
</tr>
<tr>
<td>The control of wild oats with TCA, propham (IPC) and related compounds'</td>
<td>79</td>
</tr>
<tr>
<td>HELEN M. HOLMES and R. K. PFEIFFER, Fisons Pest Control Limited</td>
<td></td>
</tr>
</tbody>
</table>
| The results of laboratory tests with herbicides for pre-emergence use in sugar beet, with particular reference to *Avena fatua*.  
C. PARKER, Norfolk Agricultural Station                               | 95   |
| Discussion led by MISS J. M. THURSTON, Rothamsted Experimental Station, and DR. R. D. BLACKETT, Monsanto Chemicals Limited | 109  |

**Chairman: Mr. N. F. Pine**  
(Vice-President, National Association of Corn and Agricultural Merchants)

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Developments in the design of ground crop spraying equipment during the last two years'</td>
<td>115</td>
</tr>
<tr>
<td>H. R. HERRIDGE, E. Allman and Company, Limited</td>
<td></td>
</tr>
<tr>
<td>'Hydraulic spray nozzles'</td>
<td>119</td>
</tr>
<tr>
<td>A. WESTERMAN, G. Bray and Company Limited</td>
<td></td>
</tr>
<tr>
<td>Discussion.</td>
<td>130</td>
</tr>
<tr>
<td>'The merchant's place in handling weedkillers'</td>
<td>135</td>
</tr>
<tr>
<td>COLONEL J. F. CRAMPHORN, National Association of Corn and Agricultural Merchants</td>
<td></td>
</tr>
<tr>
<td>Discussion.</td>
<td>138</td>
</tr>
</tbody>
</table>
Wednesday, November 7th

Chairman: Professor G. E. Blackman
(University of Oxford)

'Weed control research and development in Sweden'.
DR. E. ÅBERG, Institutionen för Växtodlingslära, Uppsala. 141

Discussion introduced by Dr. W. LINKE. 162

'Weed control and weed biology in Canada'.
DR. C. FRANKTON, Weed Investigation Section, Science Service, Ottawa. 165

'The application of herbicides in the U.S.S.R.',
N. A. SHIPINOV and G. A. CHESALIN, All Union Institute of Plant Protection, Leningrad and All Union Institute of Manures, Moscow. 175

Chairman: Dr. E. Holmes
(Chairman British Weed Control Council)

WEED ECOLOGY

'The evolution of weeds in relation to resistance to herbicides'.
J. L. HARPER, Department of Agriculture, Oxford. 179

'Preliminary studies in the comparative ecology of Papaver species'.
I. McNAUGHTON, Department of Agriculture, Oxford. 189

'Studies on the ecology of some species of the genus Rumex'.
PATRICIA CHANCELLOR, A.R.C. Unit of Experimental Agronomy, Oxford. 197

Discussion. 204

'Biology, ecology and control of wild onion and yellow rattle'.
S. HÅKANSSON, Institutionen för Växtodlingslära, Uppsala, Sweden. 207

'The establishment and growth of wild onion (Allium vineale L.) from aerial bulbils'.
A. LAZENBY, School of Agriculture, Cambridge. 211

Discussion introduced by DR. E. ÅBERG. 221

WEED CONTROL

(1) ANNUALS

(a) Pre-emergence

'A new method of selective weed control for related plants, in particular broad leaf weeds in beet'.
W. E. RIPPER, Fisons Pest Control Limited. 225

Discussion. 233
(b) Annual Grasses

"The effects of some newer herbicides on annual grasses'.
K. HOLLY, A.R.C. Unit of Experimental Agronomy, Oxford. ........................................... 235

"Preliminary trials on the chemical control of blackgrass in grass seed crops'.
R. S. L. JEAVER, Plant Protection Limited. ................................................................. 247

Discussion. .................................................................................................................. 252

(ii) PERENNIALS

(a) Bracken

"Chemical treatment of bracken'.
ELSIE CONWAY and J. D. FORREST, Glasgow and West of Scotland Agricultural College. ........................................... 255

"Chemical treatment of field bracken'.
ELSIE CONWAY and J. D. FORREST. .................................................................................. 261

Discussion. .................................................................................................................. 267

(b) Perennial Grasses

"The chemical control of grasses in lucerne'.
J. O. GREEN, T. A. EVANS and J. G. ELLIOTT, Grassland Research Institute and A.R.C. Unit of Experimental Agronomy. ................................................................. 269

"Chemical control of couch grass in fallows'.
P. F. Le BROCO and C. R. BEECH, Plant Protection Limited. ............................................. 279

"Value of dalapon'.
L. J. MATTHEWS, Department of Agriculture, Wellington, New Zealand. ......................... 285

Discussion introduced by DR. E. K. WOODFORD. .......................................................... 289

(c) Rushes

"The susceptibility of rush species to the growth regulator herbicides 2,4-D and MCPA'.
J. G. ELLIOTT, A.R.C. Unit of Experimental Agronomy. .................................................... 293

Chairman: Mr. J. A. McMillan
(National Agricultural Advisory Service)

CHEMICALS

(i) DINITROPHENOLS

"The evaluation of 2,4-dinitro-6-isopropylphenol as a selective herbicide'.
G. E. BLACKMAN, Department of Agriculture, Oxford. ....................................................... 303

Discussion. .................................................................................................................. 311

(47011)
<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors affecting the susceptibility of peas to selective dinitro-herbicides</td>
<td>O. R. DEWEY, P. GREGORY and R. K. PFEIFFER, Fisons Pest Control Limited.</td>
<td>313</td>
</tr>
<tr>
<td>Experiments with dinitro compounds for weed control in peas, 1954/55</td>
<td>J. D. REYNOLDS, Pea Growing Research Organisation.</td>
<td>329</td>
</tr>
<tr>
<td>A contribution to the question of the effect of leaf scorch by contact herbicides on the yield of cereals</td>
<td>F. GREGORY, Fisons Pest Control Limited.</td>
<td>341</td>
</tr>
<tr>
<td>Comparison between the action on fibre flax and weeds of nitrocresols (DNC-preparations), MCPA and mixtures between them</td>
<td>K. FRÖIER and H. ZIENKIEWICZ, Flax Laboratory, Swedish Seed Association, Svalöf.</td>
<td>351</td>
</tr>
</tbody>
</table>

### (ii) PHENOXYBUTYRICS

#### (a) Weeds

- The relative toxicity of MCPA, MCPB, 2,4-D and 2,4-DB to weeds.
  J. D. FRYER and R. J. CHANCELLOR, A.R.C. Unit of Experimental Agronomy. 357

- The control of Juncus effusus using the butyric homologues of MCPA and 2,4-D.
  J. DAVIES and T. HUNT, National Agricultural Advisory Service. 379

#### (b) Cereals

- Early spraying of spring cereals with MCPA (potassium) and MCPB (sodium).
  T. C. BREESE, Plant Protection Limited. 383

- Comparison of early applications of MCPB and low rates of MCPA on cereals.
  F. R. STOVELL, Shell Chemical Company, Limited. 391

- The effects of MCPB and 2,4-DB on cereals.
  J. G. ELLIOTT, A.R.C. Unit of Experimental Agronomy. 399

- The relative toxicity of MCPB, 2,4-DB and MCPA to cereals.
  K. CARPETER and C. WILSON, May and Baker Limited. 417

- A contribution to the question of the effect of 2,4-DB and MCPB on the yield of cereals in different development stages.
  C. BAKER and R. K. PFEIFFER, Fisons Pest Control Limited. 423

Discussion introduced by MR. J. G. ELLIOTT. 428
### (c) Clover and Lucerne

- "The effect of MCPB on the establishment of clover leys".
  - Page 433

- "The role of MCPB and 2,4-DB for the control of weeds in undersown cereals, young leys and established pasture".
  W. OCHILTREE, Plant Protection Limited.  
  - Page 445

- "The effects of MCPB and 2,4-DB on seedling and established clovers".
  J. G. ELLIOTT, A.R.C. Unit of Experimental Agronomy.  
  - Page 465

- "The effects of MCPB and 2,4-DB on established legumes".
  - Page 477

- "Investigations on the effect of different rates of MCPB, 2,4-DB, MCPA and 2,4-D on red and white clovers for seed".
  R. M. DEAKINS and J. F. ORMROD, National Agricultural Advisory Service.  
  - Page 487

  Discussion introduced by DR. H. P. ALLEN.  
  - Page 495

### (d) Peas

- "Studies with phenoxybutyric herbicides in peas, 1955-56".
  - Page 499

- "The effect of MCPB on the yield and maturity of vining and picking peas".
  - Page 515

- "Weed control in peas with dinoseb and phenoxybutyric acid derivatives".
  - Page 523

  Discussion introduced by MR. K. CARPENTER.  
  - Page 530

### (e) Vegetables and Fruit

- "The response of vegetable crops to applications of some phenoxybutyric acids".
  H. A. ROBERTS, National Vegetable Research Station.  
  - Page 533

- "The tolerance of fruit crops to certain selective and pre-emergence herbicides".
  L. C. LUCKWILL and A. I. CAMPBELL, Long Ashton Research Station.  
  - Page 539

  Discussion introduced by MR. H. A. ROBERTS.  
  - Page 543
Chairman: Professor R. L. Wain  
(Wye College, University of London)

'Factors influencing the relative toxicity of phenoxybutyric acids and their corresponding phenoxyacetic acids.'  
DR. K. HOLLY, A.R.C. Unit of Experimental Agronomy.  
Discussion  

'The place of MCPB and 2,4-D in British agriculture.'  
MR. J. D. FRYER, A.R.C. Unit of Experimental Agronomy.  
MR. S. A. EVANS, National Agricultural Advisory Service.  
Discussion  

Thursday, November 8th

RESEARCH REPORTS

Chairman: Mr. M. N. Gladstone  
(Chairman, Association of British Insecticide Manufacturers)

APPLICATION TECHNIQUES

(1) VARIABLE DOSAGE SPRAYING

'The Chesterford logarithmic sprayer.'  
(Read by MR. R. C. AMSDEN).

'A small scale logarithmic sprayer.'  
J. D. FRYER, A.R.C. Unit of Experimental Agronomy.

Discussion.

(11) NOZZLE PERFORMANCE

'Physical factors affecting the retention of spray droplets on leaf surfaces.'  
R. T. BRUNSKILL, Fisons Pest Control Limited.

'Performance of spray nozzles.'  
K. HOLLY, A.R.C. Unit of Experimental Agronomy.

NEW HERBICIDES

'Chemistry and herbicidal properties of triazine derivatives.'  
H. GYSIN and E. KNÜSLI, Geigy Company, Ltd. Basle, Switzerland.

Discussion introduced by DR. B. J. HEYWOOD.
RESEARCH REPORTS

Chairman: Dr. R. A. E. Galley
(Director, Colonial Products Laboratory)

CROPS

(1) ROW CROPS

'Some preliminary observations on the assessment of weed control in row crops'.
J. K. A. BLEASDALE and H. A. ROBERTS, National Vegetable Research Station.

'Application of pentachlorophenol emulsions for pre-emergence weed control'.
J. L. HUNT, Shell Chemical Company, Limited.

'Pre-emergence weed control in row crops and the importance of rainfall'.
K. A. HASSALL and C. A. JEWELL, Reading University.

'Farm trials with 2,4-DES alone and in combination with other herbicides for the control of weeds in horticultural crops'.
P. BRACEY.

Discussion introduced by MR. J. L. HUNT.

'The use of 2,4-DES (sodium 2,4-dichlorophenoxyethyl sulphate) to control weeds in strawberries'.
F. A. ROACH, National Agricultural Advisory Service.

(47011)
(II) BULBS

'Experiments with pre-emergence weedkillers on beds of narcissus and tulip, 1953-56'.
J. WOOD and S. J. HOWICK, Kirton Experimental Husbandry Farm.

Discussion.

(III) FORESTRY

'Experiments in forest nurseries with some recently developed weedkillers'.
J. R. ALDHOUS, Forestry Commission.

'Weed control by white spirit and white spirit plus turpentine in Norwegian forest nurseries'.
T. VIDME and A. BYLTERUD, Statens Plantevern, Vollebekk, Norway.

'Experiments on the chemical control of Rhododendron ponticum'.
G. D. HOLMES, Forestry Commission.

'Chemical weed control in Norwegian ornamental nurseries'.
A. BYLTERUD, Statens Plantevern, Vollebekk, Norway.

Discussion introduced by MR. J. R. ALDHOUS and MR. G. D. HOLMES.

CROP DESICCATION

'Experiments on defoliation of clover seed crops'.
J. F. ORMROD and R. M. DEAKINS, National Agricultural Advisory Service.

Discussion led by MR. G. W. G. BRIGGS.

Research Reports not Presented

'Control of hormone resistant weeds in cereals'.

The control of weeds in kale by spraying with sulphuric acid. Interim report of field experiments'.

Conclusions of experiments on the effects of the selective weedkiller 2,4-D on the vegetation of roadside verges'.
OLIVE E. BALME, Nature Conservancy.

Further developments in the control of mosses in sports turf with calomel (mercurous chloride)'.
V. V. BLANDY, Tilgate Research Station, F. W. Berk & Co. Ltd.
Effect of copper sulphate on aquatic weeds.
H. S. FOSTER and W. PLANT, British Sulphate of Copper Association Limited.

The breakdown of MCPA, 2,4-D and CIPC in soil.
J. HOLROYD, Ministry of Supply.

Experiences with mixtures of herbicides, insecticides and nutrients for the control of plant diseases, pests and weeds.
H. I. PETERSEN, Statens Ustrupforsorg, Skovlunde, Denmark.

The toxicity of certain weedkillers to trout.
J. S. ALABASTER, Ministry of Agriculture, Fisheries and Food.

BUSINESS MATTERS

Minutes.

Treasurer's report.

Constitution.

Report on the dissemination of information.

List of delegates.

Glossary of abbreviations. Inside back cover