

PESTICIDE RESISTANCE: Prevention and Management Strategies 2005

Editors:

N.A. Martin, Crop & Food Research, Auckland

R.M. Beresford, HortResearch, Auckland

K.C. Harrington, Massey University, Palmerston North

with assistance from S.M. Zydenbos, Christchurch

***Published by the New Zealand Plant Protection Society Inc.
Hastings, New Zealand***

© The New Zealand Plant Protection Society Incorporated 2005

The New Zealand Plant Protection Society Incorporated
The Secretary - Sonja Reid, c/- Pipfruit NZ, PO Box 11094, Hastings,
New Zealand. Email: secretary@nzpps.org

Details about the New Zealand Plant Protection Society and its publications
are available at www.nzpps.org

CATALOGUING IN PUBLICATION

PESTICIDE resistance: prevention & management strategies 2005 / editors
N. A. Martin, R. M. Beresford, K. C. Harrington. - Hastings, N.Z. : New
Zealand Plant Protection Society, 2005.

ISBN 0-473-10441-5

1. Pesticides. 2. Pesticide resistance. I. Martin, Nicholas A. II. Beresford, R.
M. III. Harrington, K. C. IV. New Zealand Plant Protection Society
Incorporated.

DDC 632.95 PES

All rights reserved. No part of this publication may be reproduced, stored in a
retrieval system or transmitted in any form or by any means, electronic,
mechanical, photocopying, recording or otherwise, without the prior written
permission of the New Zealand Plant Protection Society (Incorporated).

The New Zealand Plant Protection Society (Incorporated) is not responsible
for statements or opinions advanced in this volume. While reasonable skill,
care and diligence have been exercised in reviewing the information in this
publication, the Society shall not be liable for the commercial performance of
any products or any losses arising from the use of the information contained
herein.

Printed by Wickliffe Printfast, PO Box 299, Christchurch, New Zealand

Managing picolinic resistance in Onehunga weed

(November 2004)

K.C. Harrington

Massey University, Private Bag 11-222, Palmerston North, New Zealand
Email: K.Harrington@massey.ac.nz

Background

Clopyralid (sold as Versatill) has been used routinely in many turf situations to control Onehunga weed (*Soliva sessilis*). Biotypes of Onehunga weed have now been identified in Northland that have developed a resistance to clopyralid (Harrington et al. 2001). Clopyralid is a picolinic herbicide and there is also cross-resistance to the other picolinic herbicides on the market, namely picloram and triclopyr. Thus Tordon Brushkiller and Tordon Gold, which contain both of these active ingredients, will not control this resistant biotype either.

Resistance management and prevention strategy

Phenoxy herbicides such as MCPA and 2,4-D have never given very good control of Onehunga weed. However, herbicides from other families still give good control. Bentazone (sold in products such as Basagran) and bromofenoxim (often sold each spring in garden centres as Faneron) will control both resistant and susceptible biotypes if applied before plants become too mature. Mixtures of several active ingredients have also controlled the resistant biotype, such as Axall (mecoprop + ioxynil + bromoxynil) and Salvo (MCPA + mecoprop + dichlorprop + dicamba). It is assumed that a mixture of MCPA + mecoprop + dicamba would also work. This is a common turf herbicide but no trials have been conducted with this mixture.

The management of this problem is helped by the resistant biotype having leaves slightly different in shape to those of the normal susceptible biotype (Harrington 2004). The leaflets tend to be narrower and less branched. If after spraying Onehunga weed with a herbicide such as clopyralid or Tordon Gold some plants fail to die, look to see if they have this different appearance. If so, try to ensure they are not permitted to set seed by killing survivors with another herbicide type.

The build-up of resistance in the population will be avoided or greatly reduced by not relying every year on use of picolinic herbicides for weed control. Alternate with products such as Axall or a MCPA/mecoprop/dicamba mixture.

Acknowledgements

The assistance of colleagues in reviewing this strategy is gratefully acknowledged, especially Trevor Patterson.

References

- Harrington KC 2004. Onehunga weed.
<http://weeds.massey.ac.nz/weeds.asp?pid=86> (19/11/04).
- Harrington KC, Ward AJ, Wells DM 2001. Herbicide resistance in black nightshade and Onehunga weed. *New Zealand Plant Protection* 54: 152-156.