

WEED MANAGEMENT OF DIRECT SEEDED CROPS IN THE VICTORIAN WIMMERA

A.Y.N. Postlethwaite and T. Postlethwaite

Cloverlea Farms, 37 McMahon Street, St. Arnaud, Victoria 3478, Australia

INTRODUCTION

Cloverlea Farms comprises 1575 hectares in the Victorian Wimmera and specializes in grain growing. The soil is predominantly self-mulching grey clay with about 500 hectares of hard setting red duplex soils. The entire area is sodic and the surface horizon has a pH of 8.5–9.0. The annual mean rainfall is about 400 mm with 300 mm falling between April and October. No livestock are run except as a tool for crop production.

CROPPING OBJECTIVES

The entire farm is cropped every year to a range of crops. Cereal crops include wheat and barley, oilseeds crops grown comprise canola, linola and safflower, and of the pulses, chickpeas, lupins, faba beans and lentils are grown.

All crops are direct seeded into crop residues left from the previous crop. Since 1984 stubbles have not been burnt and no cultivation has taken place. Cereal and oilseed crops are sown on 355 mm drill rows and pulses on 710 mm drill rows. Narrow points, 12 mm wide, are used in all crop establishment on sowing rows only to keep soil disturbance to a minimum. No cultivation or soil disturbance is carried out between drill rows as no covering harrows or prickle chains are used, so weed emergence from between the crop rows following crop sowing is not stimulated.

WEED MANAGEMENT STRATEGIES

Effective weed control is essential in any profitable cropping program. However, for weed control to be effective in a continuous cropping program management must look beyond the current crop being produced to prepare the way for effective weed control in following crops.

Various techniques are used at Cloverlea Farms to control weeds, to delay the onset of herbicide resistant populations and to overcome resistance that may develop. Management strategies for weed control include:

1. Rotation of herbicide groups, with regard for the effect of herbicide residues on future crops.
2. Use of non-selective herbicides wherever possible, before seeding.
3. Delayed seeding of paddocks most likely to have or to develop herbicide resistant populations.
4. Rotation of crops to control diseases and to enable effective weed control.

5. Selecting varieties with vigorous early growth where possible to compete with weeds.
6. Deep-banding fertilizers to give crops an advantage over weeds.
7. Ensuring crops have adequate nutrition to compete with weeds.
8. Use press wheels to improve seed soil contact and enhance crop emergence.
9. Sanitation of fencelines and crop borders.
10. Ensure that crop seed for planting is free of weed seeds.
11. Chickpea crops are lightly grazed to reduce seedset of escape weeds following herbicide application. Wider row spacings facilitate this.
12. Drill rows are swept clear of residual herbicides to ensure maximum crop growth.

OPTIONS FOR THE FUTURE

1. Use of non-selective herbicides between crop rows.
2. Green manure crops.
3. Chemical fallow where necessary.
4. Use of transgenic crops.

There is no simple solution to herbicide resistance and management of herbicide resistant weeds and weeds in general must use every possible strategy that any particular season permits.

CONCLUSION

Successful farmers of the future will be those who are able to adapt the tools provided by science to suit the environment on their own farm.