

ROTATION CROPS

Introduction

The use of rotation crops and fallows is an important part of the Integrated Weed Management strategy, as well as being beneficial for managing diseases, insects, and soil problems. Rotation crops and fallows give cotton growers the opportunity to use a different range of herbicides, and to use strategic cultivation to manage specific problems.

One of the difficulties with the use of alternative herbicides, however, is that most herbicides are not inactivated on contact with the soil. Consequently, they have residual properties and can be toxic to the following crops. This is equally true of many of the herbicides used in cotton, in fallows and in rotation crops.

One result of this problem in the cotton cropping system is that many of the herbicides that are effective in fallows and rotation crops can not be used in the cotton system because they are likely to be toxic to the following cotton crop. Weed control has been an issue in many of the rotation crops, and particularly in the broad-leaf rotation crops.

Contents:

12. Herbicides for use with Pigeon Pea Trap Crops

13. Managing Weeds in Vetch Rotation Crops

14. Managing Lucerne Strips in Cotton

12. Herbicides for use with Pigeon Pea Trap Crops

Pigeon peas are useful as a trap crop and refuge for beneficial insects.

A range of herbicides is now available for use with pigeon peas, covered by product registration (refer to the product label) and a minor use permit from the Australian Pesticides & Veterinary Medicines Authority (refer to the APVMA web site at www.apvma.gov.au for details). The products covered by the permit may only be used on pigeon peas that are not used for human or livestock consumption. These crops can only be harvested for planting seed for future trap crops.

Weeds in pigeon peas can be best managed using a pre-planting application of prometryn or Sencor and either trifluralin or pendimethalin, and post-emergence applications of prometryn as a directed spray, or Sencor, or one of the selective grass herbicides listed.

13. Managing Weeds in Vetch Rotation Crops

Vetch is being increasingly grown as an alternative rotation crop for cotton, capable of adding large amounts of nitrogen to the soil.

Weed management in vetch is problematic, with few registered herbicides for pre-planting applications, and no herbicides registered for controlling broad-leaf weeds in vetch, or for controlling vetch prior to planting cotton.

Many of the herbicide options discussed in this article are off-label. Growers wishing to make an off-label pesticide application must first obtain a minor-use permit from the APVMA for the proposed use.

14. Managing Lucerne Strips in Cotton

Lucerne strips are valuable for promoting beneficial insects in cotton and as trap crops.

Weeds can be controlled in established lucerne with diuron and prometryn and some of the grass herbicides. Bromoxynil and 2,4-DB can also be used to control small broad-leaf weeds in lucerne after cotton picking and before cotton planting.

Established lucerne can be killed with heavy cultivation or herbicides when the lucerne is actively growing. A tank mix of Grazon DS[®] + Roundup CT[®] is registered for controlling established lucerne. However, picloram, one of the components of Grazon DS, has a long plant-back period to cotton and some other rotation crops. There is also an APVMA permit to control lucerne with 2,4-D amine. Check the APVMA web site for the current permit status at: www.apvma.gov.au. None of the 2,4-D formulations can be safely used near cotton, so this herbicide option is limited to the period when no cotton is present.