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fact sheet

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May, 2014

# Managing ratoons & volunteers

## Winter war on weeds starts now

As anyone who has tried to kill cotton will know, controlling unwanted plants goes from being difficult with small plants, to almost impossible with larger plants. However it is a skill all cotton growers need to know.

### Controlling volunteer cotton

Volunteer cotton plants occur wherever cotton trash is left following a crop. Cotton trash and volunteer plants are inevitable in-field following a crop, but also occur wherever bales or modules are placed, along the roads frequented by module trucks and in channels and drains where trash accumulates.

Volunteer seedlings that emerge over winter are likely to be killed by frosts, but seedlings that emerge later in the year are likely to establish and grow, whether they occur in a channel, in what is now a wheat paddock or a cotton field, or anywhere else. These unwanted seedlings are a major weed problem for the industry and need to be controlled before they become a host for pests and diseases, compete with other crops or cause other problems.

Like most cultivated crops cotton has little hard-seededness, meaning that most volunteer cotton seedlings will emerge as soon as conditions become favourable in spring, although in wet winters, much of the seed may die before spring and relatively few volunteer seedlings are likely. Volunteer problems are most problematic following dry winters, with potentially very large numbers of seedlings emerging



PHOTO COURTESY MURRAY SHARMAN

*It is important to get on top of ratoons and volunteers early. Lack of control increases resistance risks as well as serving as a reservoir for pests and diseases.*

following spring rains or irrigation.

There are a number of herbicides registered for controlling volunteer cotton seedlings, as listed in the *Cotton Pest Management Guide 2013-14* (Table 34, page 119), with most chemicals being effective in controlling four to six node seedlings. These registrations give growers a range of options that can be effective for controlling cotton seedlings in a range of situations.

However, the emphasis is on seedlings, with no registrations for seedlings beyond nine nodes of growth. Even within the label window, it is highly recommended that growers target smaller seedlings wherever possible, as 100 percent control is

unlikely on larger seedlings under less than ideal conditions, such as moisture stress or cold stress. For all these herbicides, best results will occur from using a double-knock strategy, such as using a registered herbicide to control volunteer seedlings prior to crop emergence followed up by an early inter-row cultivation to remove any survivors. When volunteer plants get beyond this growth window, there are no registered herbicides for controlling these weeds and cultivation is the most cost-effective and efficient option.

### Controlling ratoon cotton

Ratoon cotton occurs when a plant survives over winter and then regrows from the old root stock. This is not an unexpected outcome where plants are not disturbed, as cotton is a perennial plant, and has the potential for plants to grow over many years, becoming progressively larger and more difficult to manage over time.

Hence, cotton has to be managed post-harvest to prevent the problem of ratoon cotton.

It is almost impossible to control a ratoon plant with herbicides in spring/summer, because of the relatively small leaf area on a ratoon plant compared to its very large root system. In practical terms, it is rarely possible to get ratoon plants to take up enough chemical through their leaves to kill the roots. Even above-label rates of herbicide are very unlikely to be effective on ratoon cotton.

When applied at high rates, a herbicide is more likely to kill the leaf material before much is translocated to the roots, so given the small amount of leaf material and large root system on ratoon plants, it is a given that a rate sufficiently high to kill the roots will almost certainly kill the leaves before it gets translocated, and so will not be effective at doing anything more than defoliating the plants.



*Cultivating to control volunteer cotton.*

The simplest and most cost effective way of controlling ratoon cotton is to prevent it occurring by carrying out effective root cutting or root pulling after picking, in conjunction with an effective pupae-busting cultivation.

Where ratoon plants do occur, it is a sure sign that there is a problem in the system, and is best addressed by using a heavy cultivation to remove the plants.

Dryland growers may be reluctant to use heavy cultivation to manage ratoon cotton, but it is the only cost-effective option, and the moisture lost through cultivation pass will be less than the moisture lost through the ratoon plants that can easily dry down the profile to a metre or more. A precisely placed tyne every one or two metres (depending on the row configuration) can eliminate this problem with minimal soil disturbance and loss of moisture.

### For more information:

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- *Cotton Pest Management Guide 2013-14*, available online at [www.crdc.com.au](http://www.crdc.com.au).