



WINTER WAR ON WEEDS STARTS NOW

REPORTS FROM RESEARCHERS IN THE FIELD SUGGEST THAT WITHOUT GOOD MANAGEMENT OF PEST AND DISEASE HOSTS OVER AUTUMN AND WINTER, IT COULD ONLY BE GOOD LUCK THAT SAVES THE INDUSTRY FROM CROP FAILURES NEXT SEASON.

Carry over cotton from previous seasons (ratoons and volunteers) is a major concern for industry researchers and technical specialists. The frequency of cotton plants surviving on farms from one season to the next is already high and increasing at an alarming rate.

“The ability for plants in and around cotton fields to harbour pests and diseases from one season to the next cannot be underestimated and the impact of this cannot be understated,” says Susan Maas, the Cotton Industry D&D Team’s Senior Technical Specialist Disease, IPM and Biosecurity.

Surveys tell story

Information on the occurrence of volunteer cotton was collected during the annual disease surveys and was based on visits to 21 farms in Queensland and 54 farms in NSW during November and December 2012 (Table 1). This data has been collected and collated as part of the NSW and Qld Disease Surveys.

In NSW the percentage of farms that had volunteer cotton in the channels/roads/fence lines; fallow/rotation fields; and in current cotton early in the 2012/13 crop compared to that determined in spring 2011 has increased from 71 to 81.5 percent while in Queensland there was an increase from 52 percent to 71 percent for the same period.

“Unfavourable weather conditions in several districts pushed out picking in the 2011/12 season and this may have hindered attending to the removal of volunteer cotton,” Susan said.

“However, the importance of removing volunteer plants cannot be over emphasised as the presence of volunteer plants surviving over from the previous season enables pests and pathogens such as aphids, mealy bugs and cotton bunchy top to overwinter and initiate new outbreaks in the spring.”



Cotton bunchy top threat

DAFF Qld Virologist Murray Sharman told *Spotlight* he had seen high numbers of cotton plants infected with cotton bunchy top virus (CBT) growing alongside this year's crops. CBT is a plant virus spread by cotton aphid and causes stunting of plants, reduced leaf and fruit size, reduced internode and petiole length, reduced yield as well as distinctive mottling of leaves. Its economic impacts can be sizeable.

"If conditions are right, CBT can be very damaging. In 1998/99 CBT reduced yields by 25 percent on 21 percent of the growing area, equating to a 5.2 percent loss across the whole industry at a cost of \$140/ha," Murray warns.

"Ratoons (stub cotton) are a particular source of concern.

"A number of fields had a very high number of ratoons in a row directly adjacent to the field and in one case there were 76 plants over 40 metres, where two thirds of these plants were CBT-infected.

"Often there were no CBT-infected plants in this year's crop but it is likely this was only a matter of luck that there were no aphids present to move the virus into the crop.

"If aphids were also present there may have been significant disease and yield loss.

"The dry spring 2012, masked the survival of ratoons in some fallow fields and it has only become apparent with summer rain that there were vast numbers of ratoons surviving

"The risk to future crops is very serious."

Further weed hosts identified

Recent research by Murray Sharman in collaboration with Dr Lewis Wilson and Tanya Smith (CSIRO Plant Industry) has confirmed more weed hosts in addition to the already identified CBT weed host, *Malva parviflora* (Marshmallow). These are:

Anoda cristata (Spurred anoda)

Abutilon theophrasti (Velvetleaf, American jute, Chinese hemp, Chinese jute, Chinese lantern etc)

Hibiscus sabdariffa (Rosella)

Chamaesyce hirta (Asthma plant, flowery headed spurge), Asthma plant (family Euphorbiaceae) is the only non-Malvaceae species identified as a host of CBT virus so far but this does suggest that the virus may have a wider host range than originally thought.

As the virus can only survive in living plants (ratoon/volunteer cotton is often the only obvious source of the virus nearby to crops) growers have an opportunity now to break the disease cycle by controlling these host plants, especially the volunteer and ratoon cotton.

Thanks to Karen Kirkby and Peter Lonergan (NSW DPI); Linda Smith and Murray Sharman (DAFF Qld) and Stephen Allen (CSD) for their assistance.

Further information

Industry has come up with guidelines for controlling volunteer cotton. The Cotton Pest Management Guide contains detailed information on control measures.

Spring 2012	% Surveyed farms with volunteers surviving from previous season Channels/Roads /Fences	% Surveyed farms with volunteers surviving from previous season Fallow/Rotation fields	% Surveyed farms with volunteers surviving from previous season Current Cotton Crop	% Surveyed farms with volunteers surviving from previous season Total
QLD	52.4	9.5	52.4	71.4
NSW	40.7	26.5	74.1	81.5