HILLSTON WEED SURVEY

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Background

The weed spectrum of many areas in the Australian cotton industry is not well documented. In addition, there is very little information known about the weed species present in the Hillston area and which of these weeds will present a problem to the expansion of cotton growing in the area. To address some of these issues, a weed survey was undertaken on three farms in the Hillston area on November 21 and 22 2001, just prior to first cultivation of many of the fields. The fields surveyed covered a range of production systems including conventional cotton, RoundUp Ready® cotton on two metre beds, twin row conventional cotton planted on two metre beds, and RoundUp Ready® cotton planted on UNR beds. Assessments were conducted along transects from the tail ditch to the head ditch and weeds assessed in both rows and furrows on a number of transects (the actual number was dependent on the field size).

The weeds found and the implications

A total of 37 species were common in the cotton fields surveyed. Of these species, 29 were broad leaf species, seven were grasses and one lily species was found.

The top ten weeds encountered by number were

1. Volunteer cotton
2. Wide leaf bladder ketmia (*Hibiscus trionum* var. *vesicarius*)
3. Narrow leaf bladder ketmia (*Hibiscus trionum* var. *trionum*)
4. Bathurst burr (*Xanthium spinosum*)
5. Australian bindweed (*Convolvulus erubescens*)
6. Three medic species (*Medicago* spp.)
7. Turnip weed (*Raphistrum rugosum*)
8. Two barnyard grass (*Echinochloa* spp.)
9. Plains spurge (*Euphorbia planiticola)*
10. Paddy melon (*Citrullus lanatus*)

The following species were also encountered in some number

1. Annual ryegrass (*Lolium rigidum*)
2. Milkthistle/Sowthistle (*Sonchus oleraceus*)
3. Goosefoot (an *Erodium* species)

A number of other species were observed. Although these other species occurred in lesser numbers on the fields surveyed, they are more common in the more northern cotton growing areas. These weeds included devil's claw (*Ibicella lutea*), summer grass (*Digitaria ciliaris*), raspweed (a *Haloragis* species), cudweed (*Gnaphalium pensylvanicum*), variegated thistle (*Silybum marianum*), wild oats (*Avena fatua*), dwarf amaranth (*Amaranthus macrocarpus*) and blow-away grass (*Chloris trucata*). While these weeds were low in number they need to be included in weed management programs to prevent seed increase and eventually a potential problem.

The volunteer cotton found would have been removed by cultivation, a shielded application of glyphosate in a conventional cotton crop, or an over-the-top application of RoundUp Ready® herbicide in a RoundUp Ready® cotton crop. RoundUp Ready® cotton volunteers will not be controlled by RoundUp Ready® herbicide and other methods of control need to be investigated in these fields. Both bladder ketmia and sowthistle are considerable problems throughout the Australian Cotton industry. The Cotton Research and Development Corporation (CRDC) are currently funding a research project on bladder ketmia to understand how to better control this weed. A number of other species like Bathurst burr, the medic species and even the ryegrass indicate that weeds, or even volunteers from previous pasture systems, still need to be controlled in cotton farming systems. A brief outline of the best bet management regimes for the control of many of the major weeds can be found in WEEDpak.

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