

# factsheet

## Weed eradication program:

### branched broomrape



branched broomrape

### The Problem and History

Branched broomrape (*Orobanche ramosa* L.) is a parasitic weed of a range of broadleaf crops, but can grow on broadleaf weeds and native plants too. It grows underground on the roots of a broadleaf host plant for about 6 weeks before emerging in late spring or early summer. Broomrape will then, within two weeks, flower and set seed - up to 500 000 per plant, the size of dust particles with a dormancy of up to 10 years.

Branched broomrape was first identified in Australia in 1911 at Glenelg. The infestations and actions taken are outlined in Table 1.

### The eradication program

#### Trace back

Landholders in the quarantine zone were asked to fill in a questionnaire about the movement of vectors such as livestock, farm machinery and soil from their farm. This information was used to identify links (movements of a potential vector of branched broomrape seed). As it was not known if each potential vector had come into contact with branched broomrape seed, all vectors leaving an infected property were included. Links were found across South Australia and Victoria and in two seasons 484,000 ha was surveyed by ground. However, all infestations found through the trace back program were within 70 km of the quarantine area.

**Project:** National eradication program of the parasitic weed, branched broomrape, *Orobanche ramosa* L.

**Participants:** Animal and Plant Control Commission, Grains Research and Development Corporation, CRC for

Australian Weed Management, Rural Solutions SA and local farmers.

**Location:** Murray Bridge area, South Australia.

**VET sector resource:** RDT5402A *Develop a strategy for the management of target pests.*

Table 1. The history of identified branched broomrape infestations and the action taken.

Year	Location	Action
1911	First identified at Glenelg	Died out within a few years
1992	Population identified in Bowhill area	Detected plants eradicated with methyl bromide fumigation
1993-1997	Plants found at 6 more sites on original and adjoining properties	Detected plants eradicated with fumigation and manual control
1999	Plants found at a further 16 sites within 15 km of original infestation	Wide scale surveys – a total of 137 infestations over 1344 ha.
Current	Large surveys have confirmed branched broomrape present north east of Murray Bridge area only, infesting 4800 ha.	National eradication program developed and implemented in the quarantine zone

#### Field survey

Branched broomrape will germinate in the field only when a suitable host plant root is within a few millimetres. Although some paddocks have pulses and medic pastures the highest density of broadleaf plants is around the perimeter of paddocks where weeds are generally not controlled. Teams of two people trained in weed identification visually inspected the paddock perimeter. Then they inspected three transects across the paddock. They targeted areas where

broomrape was more likely to grow: in obvious sandy areas; and areas where host plants appeared to be growing in high densities.

#### Quarantine

Protocols were established for the movement of grain, machinery, soil, horticultural produce and livestock. These were developed into a code of practice in consultation with industry representatives. A suitable decontamination chemical was identified for use.

## Challenges facing the eradication program

### Identifying the weed

Identifying the presence of broomrape was itself a challenge. The presence of branched broomrape was being masked because it is palatable to stock, and many herbicides in the cereal production system effectively suppressed it.

Farmers in the quarantine area (and across the Australian grain belt) had to be told why branched broomrape was such a threat (**relevance**) and what to look for (**knowledge**). Fact sheets were distributed to grain growers with colour photos and information about branched broomrape's growth habit and weed status world wide.

The privacy policy inhibited the program as utility services, local contractors and other concerned authorities could not be informed where infestations were. This meant that they were unable to take precautions to avoid spreading the weed.

### Nature of the weed

The ability of branched broomrape to set extremely high numbers of very small seeds in such a short time frame posed a major challenge. It is also relatively short (10 to 30 cm) compared to broadleaf crops and weeds in late spring. The use of perimeter inspections



addressed these problems in part, making it much easier to carry them out on a regular basis and more likely to be successful in spotting plants prior to seed set. However, this was still very time consuming and expensive, with teams surveying up to 250 ha per day.

### Farmer participation

The relatively small economic impact on the farmers directly involved (lack of relevance) made the active participation in the eradication program very difficult. A number of difficulties are still hindering the eradication program. Shortcomings in the legislation meant on the spot fines could not be issued; introduction of a quality assurance program was difficult; and lack of a national compensation formula. Compensation for farmers in the quarantine zone, whether the cost is real or perceived, was unavailable. The

farming community felt they were protecting industries not present in their area.

### Managing human resources

Managing a large number of staff to carry out field surveys for short periods of time was a challenge in itself, with government structure being unable to handle it. In addition, short term national funding made it difficult for the program to obtain and retain staff for critical positions.

### Trace back program

A number of landholders required assistance to fill in the questionnaire and only 60% responded leaving large gaps in the data.

### The future

The continued success of the Branched Broomrape Eradication Program is highly dependent on continued funding and support from government for:

- appointment and retention of experienced staff in key positions;
- an employment manager to oversee short term employment of large numbers of casuals;
- development of a formula for compensation to improve compliance of a program which primarily relies on farmer good will; and
- continuing the education and awareness program in other regions to ensure early detection.

For further information visit the Weeds CRC's website: [www.weeds.crc.org.au](http://www.weeds.crc.org.au)

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**Reference:** Jupp, P., Warren, P. and Secomb, N. (2002) The branched broomrape eradication program: methodologies, problems encountered and lessons learnt. In 'Proceedings 13th Australian Weeds Conference, Perth' pp270-273.

**Farmer Alert** available at [www.affa.gov.au](http://www.affa.gov.au)



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