

# Heli-drop – an innovative herbicide application technique for prickly acacia control

Helicopter manoeuvrability, the ability to rapidly cover large distances and high levels of visibility for the pilot have been harnessed for prickly acacia control through the development of an innovative herbicide applicator by Cloncurry Mustering Company.

The 'Weed Sniper' is fitted into a Robinson R22 helicopter and delivers measured doses of granular tebuthiuron herbicide via a chute near the right hand skid within the pilot's field of vision. The combination of the helicopter and applicator allows for rapid detection and treatment of individual plants scattered across large landscapes.



**Image 1: (left) Dan Gresham from Cloncurry Mustering Company demonstrating the mechanics of the 'Weed Sniper'; (centre and right) the 'Weed Sniper' treating prickly acacia**

## Field Trials

Field trials conducted near Richmond by the Department of Agriculture and Fisheries through the War on Western Weeds project investigated the application accuracy and cost of the heli-drop method compared to basal bark spraying and ground-applied tebuthiuron. Prickly acacia density was 35 plants/ha across all treatments with plant sizes ranging from <0.5 m to more than 4 m tall. All treatments were applied by commercial contractors to provide realistic costs.

Plant mortality using the heli-drop method was similar to other treatment methods indicating appropriate herbicide placement and application rates. Application accuracy of the heli-drop method is equivalent to ground-applied tebuthiuron, with most granules distributed within a one metre radius of the base of targeted trees (Image 2). The cost per plant of the heli-drop method (including herbicide) was similar to that of basal barking; whereas the cost of ground-applied tebuthiuron was somewhat less. The hours required to apply tebuthiuron for the heli-drop method were one sixth and one third of those required for basal barking and ground-applied tebuthiuron respectively.



**Image 2: Herbicide granules (identified by arrows) spread within a one metre radius of the base of prickly acacias**

## Advantages

- At 35 plants/ha, it is cost comparable to basal barking, but much faster
- Application accuracy equivalent to hand-applied technique
- Access to infestations isn't restricted by obstacles e.g. rough terrain, watercourses
- 'Birds-eye' view may allow for enhanced detection of prickly acacia
- Automatic provision of GPS data on infestation/treatment
- Provides a method for treating large areas of land when labour is not available

## Disadvantages

- May be more costly than ground-applied tebuthiuron, but much faster
- May miss a higher proportion of small (<50 cm tall) plants than basal barking and ground-applied tebuthiuron although these can be treated in subsequent years
- Engagement of a specialist contractor is required
- Can only be used where tebuthiuron use is permissible



**Image 3: High prickly acacia mortality following heli-drop treatment in the Southern Gulf region**

## Further information

Further information is available by contacting **SG NRM** (call 1800 676 242) or **Biosecurity Queensland** (call 13 25 23 or visit [www.biosecurity.qld.gov.au](http://www.biosecurity.qld.gov.au))