

Can you fight parkinsonia with fire?

John McKenzie, Shane Campbell and Tony Grice

People are asking if parkinsonia can be controlled with a planned burning program. At this stage scientists at the Tropical Weeds Research Centre (TWRC) in Charters Towers, north Queensland, are not sure. However, along with CSIRO they are researching the effects of fire on parkinsonia infestations.

John McKenzie, rangeland weeds officer at TWRC says that he has heard from landholders that burning gives mixed results. In some areas there has been virtually no mortality following what appeared to be fairly intense fires, whereas some—but by no means all—cooler low-intensity fires, lit during breaks in the wet season, resulted in fairly good kill rates.

CSIRO scientist Dr Tony Grice monitored survival of parkinsonia following a dry season fire in the Charters Towers region. He found that 50 per cent of plants of a range of size-classes were killed even though the fire was of relatively low intensity.

Current research is examining the responses of parkinsonia to different seasons and intensities of fire in order to identify burning regimes that will cause maximum parkinsonia mortality. The research is being undertaken at Fletchervale, which is located near Charters Towers and has a fairly dense infestation of parkinsonia growing on an alluvial basalt soil.

- ▶ A fire trial underway at Fletchervale, near Charters Towers, Queensland



John McKenzie

- ▶ Scientists of NRM&E's Tropical Weed Research Centre are continuing fire trials in collaboration with CSIRO



John McKenzie



This experiment should give us a sound understanding of how differently sized plants handle fire, how fires affect parkinsonia density, and whether fires kill seeds in or on the soil. Researchers are recording the characteristics of each experimental fire, and the condition of plants at the time of burning, so that reliable recommendations can be made to landholders.

The effects of intensity are being evaluated through comparisons between fast moving head-fires (burning with the wind) and slow moving back-fires (burning into the wind). Four different seasonal burns are being studied: early dry season, late dry season, early wet season and mid wet season.

John said that preliminary results suggested that the seeds sitting on the soil surface might be damaged by fire, and that in some treatments already implemented, a number of plants appear to be dead or dying.

This research is in its early stages and recommendations will be published as results become available. It will then be possible to determine what role fire has to play in parkinsonia management, either as a stand-alone treatment or as a component of an integrated approach.

