

CONTROL OF SISAL HEMP (*AGAVE* SPP.) IN NATIVE BUSHLANDM. J. Foley¹ and M. P. Bolton²

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Abstract. Sisal hemp, *Agave sisalana*, related species have become naturalised in many parts of Australia after the abandonment of commercial fibre production, and widespread planting as ornamentals. These species spread slowly, but form dense infestations which prevent the regeneration of trees and exclude understorey species in native bushland. Sisal hemp is becoming recognised as a weed of conservation reserves, other amenity situations, and pastures. Other workers have had little success with overall spraying of sisal hemp, except where the herbicide carrier was diesel.

A series of trials were performed on two species of sisal hemp, *Agave sisalana* and *A. vivipara*, on two North Queensland Islands. A range of herbicides, carriers and application techniques were trialled. Low volume methods and sea water as a carrier were of particular interest to land managers for logistic reasons.

Herbicides which were effective (90% kill or better) when applied neat to the cut growing tip or cut stump of mature plants were 5.4 g glyphosate, 6.3 g triclopyr + 0.5 g picloram, 3.8 g fluroxypyr, and 5 g amitrole + 4.4 g ammonium thiocyanate. Hexazinone (1.5 g) was effective on cut stumps. This method is suitable for killing isolated plants.

Effective high volume overall sprays (on whole mature plants) were 6 g fluroxypyr/L of diesel, 0.12 g metsulfuron-methyl/L of freshwater, and 12.8 g triclopyr + 0.6 g picloram/L of freshwater, seawater or diesel. When plants were slashed with a brush hook, 8.64 g glyphosate /L of fresh water or seawater, and 5.8 g triclopyr /L of diesel became effective, also.

Metsulfuron-methyl (1.2 g/L of freshwater or seawater, plus 5 ml/L Pulse® wetting agent) applied with a spinkler sprayer (100 L/ha spray volume) was effective on whole (unslashed) mature plants, whereas fluroxypyr in diesel gave only 20% kill. Using the sprinkler sprayer, it was possible to spray infestations quickly and easily, reaching out over plants to avoid their spines. The sprinkler sprayer was easy to manoeuvre through dense bush, to the target plants. At the herbicide concentrations used, sea water did not appear to degrade herbicide performance. In a management situation it was not necessary to carry freshwater on boats for herbicide application; granules were easier to carry than liquid herbicide concentrates.