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THE CONTROL OF DENSE BANKSIA GRANDIS UNDERSTOREY IN THE JARRAH FOREST

Reasons for control

The control of dense understoreys of *Banksia grandis* in high quality jarrah forest is considered desirable both from the viewpoint of reducing the competition with the jarrah crop and of reducing the susceptibility of the site to infection by *Phytophthora cinnamomi*

Dozing versus poisoning

The use of a bulldozer with a solid blade to flatten dense stands of Banksia has distinct possibilities. Operational costs could be lower than poisoning costs in an area where the forest floor is relatively free of old logs and tops which would hinder movement of the machine.

The alternative of poisoning will prove more attractive in many cases, particularly where work is required for a work force employed for other seasonal projects.

Poisoning Technique

Notching with Tordon 50D

Banksia can be killed effectively using the same technique as is used for thinning jarrah. This involves notching the stem at 5" intervals with a narrow bladed tomachaws, and injecting 5cc of a 1:4 dilution of Tordon 50D in water into each notch. The notching technique will prove very costly where large numbers of small stems are encountered. Overbark spraying with 2,4,5-T is recommended in this instance.

Overbark sprays with 2,4,5-T

A 4% solution of 2,4,5-T in distillate or power kerosene is used for overbark spraying. This dilution is achieved by mixing 1 gallon of 80% 2,4,5-T concentrate with 19 gallons of oil. No dye is necessary; the oil carrier in the poison mixture leaves a noticeable stain on the bark of sprayed trees.

The poison is applied as a spot spray - it is unnecessary to apply it all round the stem of the tree. Each spot is sprayed with approximately 5cc of the poison mixture. The number of spots sprayed depends on the size of the stem:-

Up to 3" dbh - 1 spot
3" - 6" dbh - 2 spots on opposite sides of the stem
Greater than 6" dbh - 3 spots equally spaced round the stem

The spray pattern should be of a width to cover as far as possible the side of the stem being sprayed. The width of the spray is controlled by the distance of the spray nozzle from the stem; holding the nozzle at the correct distance becomes easy with a little practice.

The choice of equipment for this operation has not been thoroughly investigated. All experimental work has been done with a Rega Junior Pneumatic Hand-sprayer with a capacity of approximately 2 pints. Frequent refilling would be necessary in a field operation.

It is suggested that a larger 2 gallon size Rega sprayer be used with a rubber extension tube and Sprayrite pistol.

No calibration of the poison dose is possible with either of these sprayers. However, the correct dose can be approximated by holding the spray nozzle at a distance from the tree where the spray pattern will just cover the width of the stem. Spray is then released until it begins to run off the target area. In practice it will be found that a spray jet lasting a second or so will achieve this. Where this type of approximate calibration of the poison dose is used, the number of sprayed spots per tree is amended to:-

(a) Trees up to 3" dbh - spray from 1 side only.

(b) Trees over 3" dbh - spray from 2 opposite sides.

Safety

Oil based solutions of 2,4,5-T can be both unpleasant and dangerous. The following list of safety measures should be adhered to.

(1) Spray equipment must be regularly maintained and have no leaks.

(2) Operators should wear (a) Gloves
(b) Safety glasses
(c) A plastic apron
to prevent contamination of clothing.

(3) Spray nozzles and pressures must be adjusted to give large droplets and a minimum of mist.

(4) Soap and water should be available; all operators must wash hands and face before eating or smoking.

(5) Drums for carrying bulk supplies of the poison mixture must have tight fitting lids and be kept clean. Filling should be done using a hose or funnel. The poison solution should be dispensed from the bulk drum via a tap and funnel.

Results

Yellowing leaves, showing that the poison has started to work, will normally appear within one month of application. Death will follow in 6 to 12 months. Experimental work with overbark sprays has shown that a 90% mortality or better can be expected from a well conducted operation.

Cost

The following facts are given as a guide to the costs likely to be incurred in this operation.

(a) 4% 2,4,5-T in distillate - approx. 70 cents/gallon.
(b) 1.5 to 2 gallons poison mixture per acre in dense stands.
(c) Work-rate - between 3 and 4 acres per man day (assuming 6 hours on the job.)

Research

Trials are being conducted to find the effectiveness of mixtures of 2,4,5-T in water applied as an overbark spray. Results are not yet available.