

## AERIAL RABBIT CONTROL

by

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### LOCAL SITUATION

To date in Western Australia control of the rabbit population has been confined completely to ground methods. These include laying baited trails, fumigating, trapping, ripping and filling in warrens, and shooting. These methods however are laborious, and, unless a concentrated operation is mounted effectiveness is doubtful as is shown by annual mortality counts.

In the Department's case rabbit baiting is of utmost importance in the year of establishment of plantations. The problem is multiplied in the steeper areas of the Blackwood Valley where the country is often too inaccessible for effective ground control at an economic price when assessing pine mortality.

Because of the widespread range of the rabbit throughout State Forest and private property, total control is virtually impossible by existing techniques. However to allow for pine seedling establishment we are aiming at a severe set back in the local population. Most literature consider a 90% kill is required to cause enough shock to the population that it takes a long time to recover. A 50% kill will allow the rabbits to rebuild to their former numbers in a few months.

In the Blackwood Valley conventional ground methods of rabbit control do not appear to have given satisfactory results in all cases. Some years rabbits are held in check and pine mortality counts show damage at less than 5%. Other years deaths may reach 15% and even higher. Since deaths tend to occur in patches the problem is magnified.

A satisfactory level of control should be somewhere in the region of 1-2% pine deaths due to rabbits. This is the scale of control achieved by A.P.M. Forests and the Forests Commission in Victoria using aerial baiting techniques.

In the Blackwood Valley plantations, non-commercial thinning down to 300 stems/acre is being carried out under Silviculture 70. It can be argued therefore that a rabbit damage of 10% (which is a high figure) would be of value rather than

detrimental, and that we should offer little resistance. However this is not so and rabbits are an important problem for many reasons, namely -

- a) deaths due to rabbits follow attempts to control them, no control could be disastrous,
- b) rabbit damage tends to occur in patches,
- c) a high stocking is required for future selection,
- d) if the market for first thinnings pick up, non-commercial thinning may be discontinued,
- e) we must undertake some form of rabbit control as part of our obligation as land holders,

#### AERIAL TECHNIQUE

For many years now Victoria has been tackling their vermin problem (rabbits, wallabys and rats) using aerial baiting methods. They have switched to aerial methods because -

- a) it costs far less (in their case \$1.00/acre for three flights i.e. approx. \$0.33/acre/flight),
- b) a better coverage is obtained especially in steep and inaccessible country,
- c) less time-consuming,

Literature on aerial baiting claims a 98% (or better) kill and this appears to be a valid claim as both the Forests Commission and A.P.M. Forests consistently report rabbit damage in the order of only 1-2%, a figure that would make us envious.

Many types of baits are suitable using ground control methods, for example, oats, carrots and apples. To date however aerial control has used only carrots as a bait. This is because carrots are known to be high quality bait and they are also fairly cheap in Victoria. Apples and oats could also be tried from the air, although they are of lower specific gravity and apples would tend to deteriorate fairly quickly. A manufactured pellet of an oats, bran and pollard mixture has been developed in Victoria for use either in place of carrots, or when carrots are in short supply. Literature quotes this to be as effective, if not more effective than carrots. This "Barastoc" pellet can be landed in Nannup at 6.5 cents/lb. (corresponding to \$0.30/acre) and at that price could compete favourably with carrots. It has not been used too widely to date but is definitely worth a trial.

In Victoria the application technique used by A.P.M. Forests and the Vic. Forest Commission is as follows:

1. three flights are planned about 3 days apart. The first two flights are "free" feeds (non-poisoned carrots) and the third feed is poisoned with 1080 (sodium fluoroacetate),
2. carrots are washed and delivered to the airstrip under contract at \$35/ton,
3. a mechanical cutter dices the carrots into sections of about  $\frac{1}{2}$ " cubes,
4. the diced carrots are bagged, poisoned (if the third flight) and loaded into the aircraft hopper. This is simply a super spreading hopper and for a Piper Pawnee will hold  $\frac{1}{3}$  ton and distribute at approximately 1.3 tons/hour,
5. the aircraft drops the bait on a 2 chain swathe width at a rate of 5lb/acre/flight (A.P.M. Forests use  $7\frac{1}{2}$ lb./acre). Over three flights this constitutes a drop of  $\frac{2}{3}$  ton/100 acres. (1 ton/100 acres for A.P.M. Forests),
6. this operation costs \$1.00/acre in Victoria and is carried out in a) May prior to planting.  
b) September following planting.  
and c) May-June twelve months after planting.

A cost is split up and is given as follows (total for complete operation of three flights) :

carrots to airstrip @ \$35/ton (contract)	= \$0.35/ac.
aircraft hire (based on \$54/hour and 15 minutes turnaround)	= \$0.40/ac.
labour	= \$0.10/ac.
1080 poison (\$8.00/ton over 300 acres)	= \$0.03/ac.
Total	= \$0.88/ac.
Contingencies	= \$0.12/ac.
Total	= <u>\$1.00/ac.</u>

It must be remembered that these costs are only applicable in Victoria.

## APPLICATION IN W.A.

Since the method has proved effective in Victoria and because it is cheaper and less time consuming than our present methods there is every chance that it will be applied in those planting areas in this state where rabbits are a problem.

In getting such a scheme off the ground however there are certain difficulties to overcome.

1. Firstly it would be the first time in W.A. any body has undertaken this form of control. The Agriculture Department has not attempted it as yet and would no doubt be interested. We would therefore be "feeling our way" to a degree.
2. Not being geared to large quantity supply of carrots from a local outside sources we would have to initially grow carrots in large quantities. To cover the 2,500 acres/annum planting programme between the Nannup and Kirup Divisions a total of 25 tons of carrots would be required. This will be no problem to raise but lifting a large quantity in a short time (carrots don't keep too long) would present economic problem unless it can be mechanised and for this reason the possibility of using a potato digger is envisaged.
3. Dicing the carrots will require a mechanical cutter as the aircraft is capable of distributing 1.3 tons/hour.

These problems will be overcome however and it is conceivable that aerial rabbit control will be part of our operations in the near future. It could be envisaged however that we would carry out the operation only twice on an area, prior to planting and the spring following planting. The pine should have beaten any rabbit problem within twelve months.

## SUMMARY

Rabbits will always be a problem for pine establishment and some form of control will always be required. As in most operations the cheapest or the most effective method will take over eventually. Therefore on present indications from Victoria aerial baiting appears to have a future particularly in our steeper country.