

RAT BAITS INCORPORATING PARAFFIN WAX

Rats are an agricultural pest of some consequence in Papua and New Guinea and have been fairly serious in Bougainville in the last two or three years. The main crops affected have been cacao (damage to pods) coconut (damage to developing fruits) and food crops (destruction of starchy roots and tubers). Damage to coconut has not generally been so serious as is reported from many other countries.

Although a number of highly effective poisons are available, a major problem in control of rats in the field has been that of preserving baits from weather damage. Use of bamboo containers has proved successful, but is laborious. In Jamaica, this problem was attacked by the incorporation of conventional rat baits in paraffin wax and the method was reported to be highly successful (Smith 1965). Blocks of bait prepared in this way proved highly attractive to rats on first exposure, but subsequent mould growth reduced their attractiveness for a period. Later, the mould dried off and baits again proved acceptable. Careful observations showed very great reduction in rat damage to coconuts when the wax baits were scattered through palm groves.

A number of trials of this baiting technique have been made in Papua and New Guinea. Although no formal experiments have been conducted, observers have reported that baits were readily eaten by the rats and crop damage was very substantially reduced. The method can therefore be recommended as probably the cheapest available for control of rats in the field.

The following basic recipe was used for preparation of baits in most cases.

- 1 lb. 0.5 per cent. "Warfarin" (or 0.08 oz. 100 per cent. "Warfarin")
- 10 lb. wheatmeal
- 1 lb. sugar
- 7 lb. paraffin wax

Dry ingredients were mixed together and stirred into melted commercial grade paraffin wax. Temperature of the wax was kept as low as possible to avoid damage to the warfarin. The mixture was poured into trays and broken into lumps (about two inch cubes) after setting. Active ingredient in these baits was "Warfarin" (3-(alpha-acetonylbenzyl)-4-hydroxy coumarin) an anti-coagulant which causes death through internal bleeding. Apparently satisfactory results were obtained also with baits incorporating "Raticate" (containing "Shoxin": 5-(alpha-hydroxy-alpha-2-pyridylbenzyl)-7-(alpha-2-pyridylbenzylidene) norborn-5-ene-2, 3 dicarboximide) at recommended levels. This material is more expensive but could perhaps be preferred if there were any danger of other animals being poisoned by the baits ("Shoxin" is a poison highly specific to rats).

Apart from the active ingredient and use of wax to protect against weather damage, the composition of the baits is of no importance so long as they are attractive to rats. This will be influenced by the availability of alternate food sources. Any meal or crushed grain could be substituted for wheatmeal, and fish, meat or fat could be added to increase the attractiveness of the baits if necessary. Commercial prepared rat bait mixtures could be incorporated in wax for field use, if desired.

Quantities of bait required would also be influenced by the availability of alternate food sources. Rates of 5-6 blocks of bait per acre were reported to give effective protection for about two years in Jamaica coconut groves. Experience in Bougainville has indicated that at least ten baits per acre are needed in food gardens.

REFERENCE.

- SMITH, R. W. (1965). "Rat Damage" *Fifth Rep. of Res. Dept. Coconut Industry Board Jamaica*, p. 24.