

TRIAL OF POISONOUS GASES AND BAITS AGAINST PORCUPINES

by

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Summary

Phostoxin used at the rate of 2-3 tablets in hills and 5 tablets in plain areas per burrow gave 100% mortality of porcupines. Cyanogas A-dust applied at the rate of 225 grams in hilly areas and 450 grams in plains gave 50% kill of porcupines hence required 2-3 repeated treatments for complete control. Potassium cyanide applied to apples in cuts at the rate of one gram also proved very effective. Poison baits prepared with Zinc phosphide, Sevin and Recumin were not eaten at all.

Introduction

Porcupines have always been of major economic importance throughout the forest world. The Indian porcupine, *Hystrix indica* is quite abundant all over Pakistan causing severe damage to our forests. They live in pairs in extensive burrows which are provided with several holes, and are marked by mounds of earth.

The porcupine food consists mainly of roots and bark of succulent plants and is often a destructive pest of agricultural crops like gram, maize, sugarcane, tuber crops and vegetables. Plant species killed by debarking includes shisham, bakain, siris, agave etc. while Sanathi and perennial grasses in scrub forests form substantial part of their food particularly in the absence of agricultural crops. It damages trees directly by stripping off the bark (Fig. I & II) and by pulling out freshly planted shisham stumps.

No work has ever been carried out in Pakistan on this problem. In view of its economic importance and a rapid increase in incidence of its damage in the irrigated plantations, studies on trial of poisonous gases and baits were undertaken by the authors and results are presented in the following pages.

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Review of Literature

Being an old problem, porcupine has been subject of study continuously for foresters and economic biologists. Browne (1968) reported this species in India and Pakistan upto an altitude of 1700 m; living in burrows and producing 2-4 young ones in main chamber of the burrow. He also reported it as a pest of vegetable crops, sugarcane and trees in plantations. Krefting et al (1962) reported that 534,000 acres suffered heavy porcupine damage in the lake states in 1960. Van Deusen et al (1962) reported 2% complete mortality and 7.3% permanently damaged trees of *Ponderosa pine* in the black hills during 1962.

Mc Donald (1927) recommended the use of Cyanogas A-dust blown inside porcupine burrows with the help of a gas pump while Faulkner et al (1962) claimed destruction of porcupines in New England by using Sodium arsenite and sugar granules applied to apples.

Method and material

Trial of various poisonous gases and baits were conducted in Kundian Plantation, Mianwali and Sohawa Scrub forest in Jhelum Forest Division. Stock maps of porcupine dens were prepared in the area under trial and all burrows were closed a day before treatment to verify the presence of porcupines in their places of abode. The burrows opened on the following day or two days after were treated with various poisons while unopened burrows for two days were discarded being uninhabited.

Cyanogas A-dust, which gives off HCN gas, was applied in doses of 112, 170, 225, 336 and 450 grams per burrow. Phostoxin tablets, containing Hydrogen phosphide gas, were tried in doses of 2, 3, 4, 5, 10 and 15 tablets (of 3 grams each) per burrow. Plastic envelopes containing Cyanogas A-dust were emptied deep in the burrow with a long stick and phostoxin tablets were thrown in the burrows as far as possible before closing the burrow openings with earth. Prebaiting trials were conducted with potatoes, guavas, apples and curcubit vegetables to note their preference for these fruits and vegetables. Potassium cyanide, Zinc phosphide, Racumin and Sevin were applied to apples and guavas in powder form in cuts given with knife and solution form with the help of an injection syringe.

Observations on the effect of various dose of poisonous gases were recorded upto 15 days and were mainly based on the reopening of treated burrows. The surviving porcupines reopened their burrows within a day or two. The mortality of porcupines due to poison baits was confirmed by physically finding the dead bodies in the surrounding of baits.

RESULTS AND DISCUSSIONS

Effect of Gases

All porcupine dens treated with 112, 170, 225 and 336 grams per burrow and 50% treated with 450 grams each were opened by the surviving porcupines on second day of

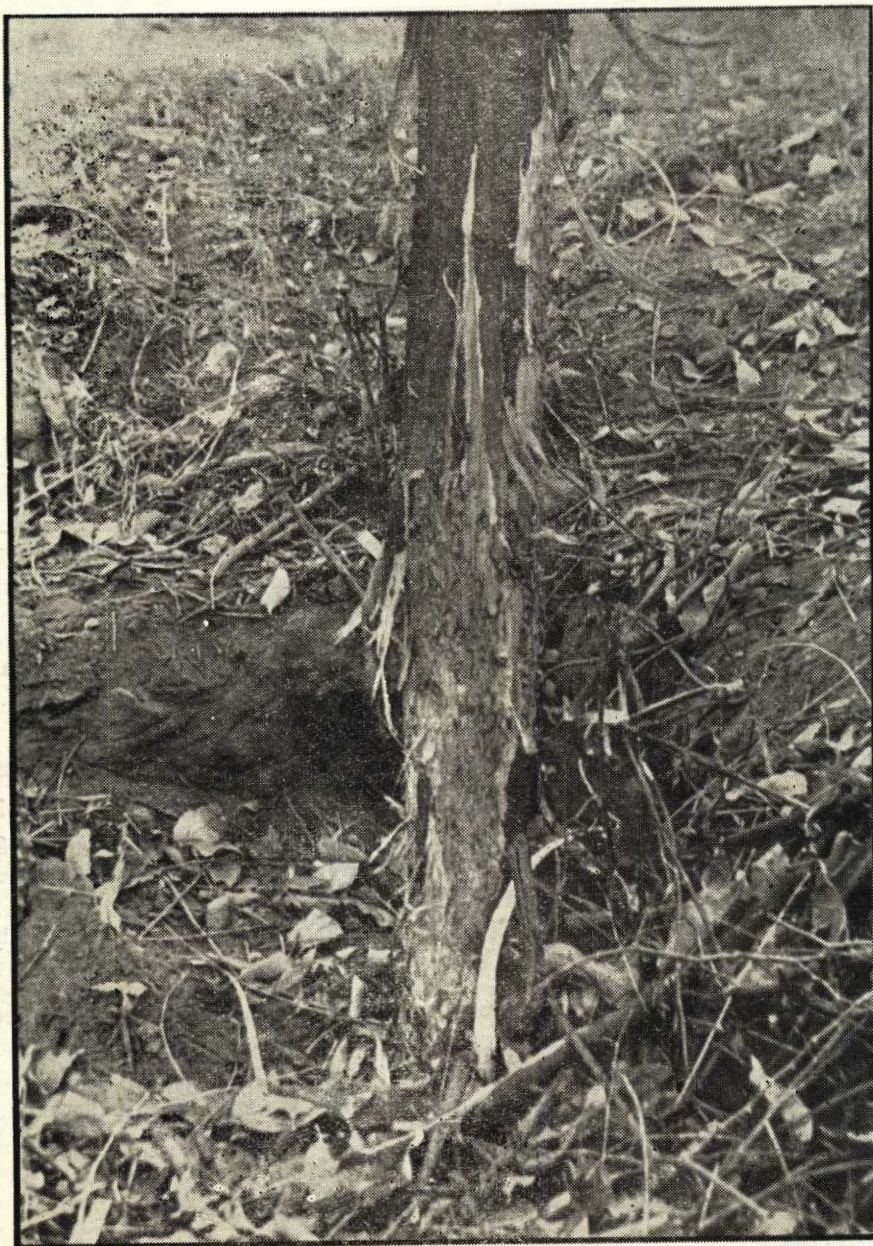


Fig. 1. Bakain tree completely debarked by porcupine.



Fig. 2. Mulberry tree partially debarked by porcupine.

treatment at Mianwali. In scrub forests at Sohawa in Jhelum a dose of 225 grams per burrow gave 50% mortality of porcupines while rest of them reopened their burrows. Due to better workability in sandy loam soil at Mianwali than in stony soil in foot hills, the porcupine burrows were more extensive and spacious from within at Mianwali hence required more gas to bring about good results.

In case of Phostoxin 5, 10 and 15 tablets per burrow tried at Mianwali and 2, 3 and 4 tablets per burrow tried at Sohawa showed cent percent kill as none of the treated burrows reopened. To verify the mortality of porcupines inside the treated dens, some of the burrows were dug out. The pungent smell of dead animals was noticed but the dead bodies could not be located due to deep and long galleries in Mianwali and stony soil in Sohawa.

Effect of Baits

In food preference trial apple was liked more than guavas and nothing else was eaten. The apples injected with poison solutions and Sevin and Recumin applied apples were not eaten.

The poison baits prepared with Potassium cyanide and apples were completely eaten and those prepared with Zinc phosphide were eaten very cautiously by avoiding the poisoned portions. The dead bodies of porcupines near the Potassium cyanide baits kept in thick forest were not traceable but those around the baits placed in open areas were found lying about 50 yards away from the baits.

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