

COMPLETED PROJECT REPORT

Project Title: Field efficacy of rodent bait chlorophacinone treated grains used in bait stations to control the California ground squirrel

Research Agency: Genesis Laboratories

Principal Investigator: J. Baroch

Budget: \$84,000

Background:

Background information is not available.

Objectives:

1. To determine the field efficacy of 0.005% chlorophacinone treated grain in bait stations for the control of California ground squirrels (*Spermophilus beecheyi*).
2. To determine the potential hazard to nontarget wildlife from the chlorophacinone grain bait in bait stations.
3. To measure the concentration and stability of the active ingredient, chlorophacinone, before and after field application.

Summary:

The study protocol was finalized and the study was initiated on March 22, 1995. The experimental start date was May 26, 1995. The experimental termination date was Nov. 28, 1995. The study completion date was Jan. 11, 1996.

The test site was on 2 adjacent ranches in the plant-oak woodland zone of Madera County, Calif. The test substance was applied to 2 plots ranging in size from 15.5 to 16.9 ac.

Ground squirrel activity on a central area of approximately 2 ac in each plot was evaluated before and after application of the test substance. In addition, 3 untreated control plots of 1.4, 2.0, and 3.7 ac were censused. A direct activity index, visual counts, and an indirect index, active burrow counts, were used to evaluate the bait efficacy.

The test substance was presented in plastic PVC bait stations for 24 days starting immediately after the pre-treatment censusing. Bait stations were checked every third day and bait was replenished as needed to maintain a continuous supply. The bait was applied at a rate of about 2

lb/bait station. Bait stations were placed at about 75 ft intervals near active burrows. Consumption on the treated plots varied from 16.9 to 18.8 lb/ac, or 0.0088 to 0.0098 mg chlorophacinone / sq ft, respectively.

Regular carcass searches were conducted on the treated plots. An area extending 225 ft beyond the treated plots was also searched during the post-treatment census period for carcasses. Carcasses of ground squirrels were collected. Whole carcass tissues of 10 ground squirrels retrieved from plots were analyzed for chlorophacinone residues.

Squirrels were exposed to the test substances for 24 days between pre-treatment and post-treatment activity counts. Bait efficacy was 93.3 to 100% according to the visual index and 89.4 to 90% according to active burrow counts. Squirrel activity changed little on the control plots during the same period.

Twenty-five dead ground squirrels were found on the treated plots. Carcasses of 5 other rodent, avian, and herptile species were also found. No secondary poisoning cases were observed. Turkey vultures (*Cathartes aura*) were commonly seen near the plots.

Analysis of whole carcass tissue residues in recovered squirrels found mean residue loads of 0.163 mg of chlorophacinone in squirrels exposed to the 0.005% bait (n = 10).

The bait was analyzed and found to be within certified limits before being applied in the field. Analysis of test substance samples showed the bait was stable when exposed to field conditions inside a bait station for 24 days.