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ANTICOAGULANT BAITING FOR JACKRABBIT CONTROL

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INTRODUCTION

The jackrabbit, *Lepus californicus*, is properly called a hare rather than a rabbit, because the young are born fully furred and with eyes open. Hares differ from rabbits in anatomy and in the lack of burrowing, although individual hares often have a more or less regular retreat or "form" at the base of a bush or clump of grass. Jackrabbits rely upon speed and dodging to escape enemies. They live chiefly in open places, seldom inhabiting dense brush or woods.

Black-tailed hares or jackrabbits are classed as game mammals by the California Fish and Game Code, but when found to be injuring growing crops or other property may be taken at anytime or in any manner by the owner or tenant of the premises. They also may be taken by employees of the Department of Food and Agriculture or by county employees when acting in their official capacities pursuant to the provisions of the California Food and Agriculture Code pertaining to pests.

In recent years large roving populations of jackrabbits on airports have created serious problems to approaching aircraft. One such problem occurred at the Hayward Municipal Airport in Alameda County when jackrabbits caused a traffic hazard to approaching aircraft. The problem was compounded by domestic dogs chasing rabbits across the runways and dead rabbits being fed upon by scavenger birds such as gulls and turkey vultures.

DESCRIPTION OF STUDY AREA

The Hayward Municipal Airport requested assistance from the Alameda County Agricultural Commissioner's Office to suppress the jackrabbit population. Agricultural commissioner personnel surveyed the 350 acre airport complex for jackrabbit activity. Visual counts with binoculars from ground level and the airport tower revealed a jackrabbit population of approximately 300 animals. The airport property was surrounded by an industrial complex and a golf course.

There was one area adjacent to a major runway where sweet corn, tomatoes and oats had been planted. Native annual grasses and forbs grew in strips between the unpaved runways and taxiways. Some of these strips had drainage ditches that extended the length of each runway. These ditches were frequently used by rabbits as trails to and from the golf course and nearby agricultural crops.

METHODS

In the spring after our initial survey of jackrabbit activity we met with airport authorities to discuss a jackrabbit control program. It was agreed that the most effective and economical method of rabbit control on the airport would be population reduction with the anticoagulant Diphacinone.

Bait preference tests with several clean grain baits indicated that jackrabbits preferred rolled barley. No pre-baiting with clean rolled barley was done prior to the exposure of toxic baits.

Bait Mixing - The Diphacin 110-A formula used in this control program was as follows: .005% Diphacinone Formula

Rolled barley	100 pounds
Lecithin-mineral oil (warm)	106 ounces
Dye (DuPont Oil Blue A)	5 ounces
Diphacin 110-A (2.0%)	4 ounces

One hundred bait stations were placed at approximately 100 foot intervals along the edge of runways, taxiways, and around the agriculture crop periphery. Each station was supplied with two pounds of .005% Diphacinone treated rolled barley. Stations were checked daily and the supply replenished as needed. Dead rabbit carcasses were picked up daily.

RESULTS AND DISCUSSION

Jackrabbit acceptance to .005% Diphacinone treated rolled barley began on the second day of bait exposure, with sick and dying rabbits observed four days later. Numerous bait stations at this time had a large amount of bloody fecal droppings. In several instances it appeared that dying rabbits tried to seek shelter as they were often found dead in their forms or under objects. The majority of the dead rabbits were found within a 100 yard radius of each bait station.

After five days of bait acceptance, 215 pounds of treated grain had been consumed by jackrabbits. Bait acceptance dropped off noticeably by the tenth day. The control program was terminated on the sixteenth day, with the remaining bait removed from the 100 stations.

A total of 344 jackrabbits were recovered and buried during the control program. Others may have escaped detection in the agriculture crops or tall grass between the unpaved areas next to the runways and taxiways. Jackrabbits consumed 437 pounds of .005% Diphacin treated rolled barley during the control program. No bait shyness was observed during the program. Post observations of the airport

complex two weeks after the control program revealed no rabbits in the area. The cost of materials, labor, and equipment in this jackrabbit control program was as follows:

.005% Diphacin 110-A, 18 ounces @ \$14.20/pound	\$ 16.02
Rolled barley, 437 pounds @ \$4.50/75 pound	26.22
Material cost	<u>\$ 42.24</u>
50 hours labor @ \$6.62/hour	\$331.00
1 truck, 180 miles @ 15¢/mile	25.20
Labor and equipment cost	<u>\$356.20</u>
Total trial cost	\$398.44

CONCLUSION

1. .005% Diphacinone was an effective toxicant for jackrabbit control on the Hayward Municipal Airport.
2. Program cost for jackrabbit control on the 350 acre airport complex was \$1.14 per acre including toxicant, grain, labor and equipment.
3. The average cost per jackrabbit killed was \$1.16 based on the trial expenditures. This figure drops to \$.12 per rabbit if only the grain and toxicant costs are considered.

LITERATURE CITED

CLARK, D.O. 1975. Vertebrate Pest Control Handbook, Sacramento, California. pp. 518-1.