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TRAPPING GROUND SQUIRRELS AS A CONTROL METHOD

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ABSTRACT: Trapping of ground squirrels could be conducted following the use of fumigants or rodenticides to further reduce populations. Trapping should be considered as an alternative to the other methods of control in cases where other controls have not worked or would not be prudent to use. Trapping can be conducted during a longer period of the year than the other methods. The type of trap used, whether live trap or one of the kill traps, can be selected as to the environmental concerns of the trapper as all traps can be effective.

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INTRODUCTION

The California ground squirrel *(Spermophilus beecheyi)* is one of the most serious pests of rangeland in California. It is also a major pest in other crops such as grain and nut crops. Almonds are particularly hard hit by ground squirrels burrowing under and through the roots, sometimes killing the tree or weakening it to the extent that it falls over with a strong wind storm. They will also strip or girdle the bark, eat the leaves and take the almonds when they are still green. In addition, many orchards have gone to drip irrigation to conserve water, ground squirrels will gnaw through the plastic pipe, interrupting water deliveries, requiring the grower to spend much time and resources repairing the damage.

The most common control tools currently used to manage ground squirrel populations in almond orchards are fumigants and rodenticide treated grain baits. Fumigants can be very effective in controlling ground squirrels, however they are limited to times of the year when most of the squirrels are active and when there is adequate soil moisture to retain the gases within the burrow system (Salmon 1984). Fumigants are not effective when squirrels are hibernating or estivating, because the squirrels plug their burrows internally with soil, and gases would not reach them.

Rodenticide baits are widely used in California to control ground squirrels. Usually they are well accepted by squirrels, and good control is achieved. Occasionally, in almond orchards poor acceptance occurs with only moderate reductions in the population being achieved. Almonds are eaten by ground squirrels when they are still green. When squirrels are accustomed to eating almonds, it can sometimes be difficult to get them to accept an alternate food source. Also, ground squirrels normally don't accept grain baits until May or June, at which time they are firmly fixed on almonds.

Trapping should be considered as a good tool to further reduce ground squirrel populations following a fumigating or rodenticide baiting program. Trapping should also be considered as an alternative method of control, if conducted in a methodical manner. As with the other methods, the larger the area treated, the slower the population will return to problem proportions.

Trapping is most efficient when there is good squirrel activity, such as the spring and early summer, and in the fall. Trapping can be conducted at other times of the year, however poor percentages of trap catches could discourage the trapper.

TRAPS

The most popular traps are the live catch traps, the modified gopher box trap and the conibear trap. Live catch traps are baited with a suitable attractant such as nut meats. An advantage of Iiv6 traps is that nontarget species can be released unharmed. A problem is presented on how to dispose of the ground squirrel. Because ground squirrels can carry plague and other diseases and are agricultural pests, it is illegal (Fish and Game Code, Section 2118) to release them on someone else's property. Therefore, the trapped animal must be destroyed by shooting, drowning, fumigating or some other method.

The modified gopher box trap is lethal to the animal. It works by a spring loaded bar that catches the ground squirrel by the neck or across the ribs. These traps must be baited, usually with nut meats, and set near ground squirrel burrow entrances or in areas where damage is occuring. These traps are usually placed baited, but unset for several days to allow the squirrels to become accustomed to them. After the squirrels become accustomed to the traps they are rebaited and set. A description on how to construct these traps is found in the Vertebrate Pest Control Handbook (Clark 1983). These traps have been used in southern California for many years, and have been fairly effective. These traps are usually set as double traps, set back to back with hardware cloth connecting them, this serves as the baiting area.

The other lethal trap is the conibear 110 body trap, it is a spring trap of approximately 4 1/2 inches on each side. These traps are normally used unbaited. Traps are set directly over the burrow opening with the spring pointing either horizontally or vertically, either way will work. However, setting traps vertically usually requires less modification to direct the squirrel into the trap. The trap should fit directly over the entrance and not allow the squirrel to get around the edge of the trap. Sticks, rocks or dirt clods can be placed next to the trap to direct squirrels into it. These traps need to be staked down, because once a squirrel has been caught, it is very attractive to predators, which could potentially drag the trap away. The trap may be secured with a 3/8 inch

spike, 10 to 12 inches long that can be pushed or hammered into the soil. Place a washer that is at least a 1/2 inch in diameter onto the stake so that it secures the trap chain, but does not allow the ring at the end of the trap chain to slip off.

STUDY

The author conducted a study to evaluate the efficacy of the conibear 110 on an almond ranch in Stanislaus County. The study consisted of setting 30 conibear 110 traps over burrow entrances in May for a period of ten days, for a total of 300 trap days. Traps were placed unbaited, directly over the opening of burrows which appeared active, other burrows in the vicinity were covered with soil. Inactive burrows normally had cobwebs across the entrance.

RESULTS AND DISCUSSION

During the course of the study, 60 squirrels were trapped. This gave an average daily trap catch of 20 %. Based on this study it is estimated that an experienced individual in an eight hour day could set 200 to 300 traps in an area of high infestation. In a study conducted in Montana to compare the efficacy of the live trap, box trap and conibear trap (Edge 1990), all traps were comparable in efficiency. Each trap type showed a reduction in squirrel populations of 40% to 42% versus the control plots, after a four day trapping period. Edge noted that the box trap required at least one day to become effective at catching ground squirrels. Traps should be serviced daily to prevent predators from removing the carcasses and pulling up the traps. Staking down the traps reduces the number of missing traps. Dogs, coyotes and hawks have all been observed feeding on carcasses.

CONCLUSION

Trapping should be considered an important tool in any integrated pest control program for ground squirrel population reduction, especially in high value crops. It is a good clean up tool following major control programs such as toxicant baiting or fumigating, to further reduce the population. Also, with the loss of registration of several of the major toxicants and restrictions on the use and transportation of some fumigants, trapping should be viewed as an excellent tool.

Lethal traps are inherently dangerous, so care must be taken in setting the traps. Lethal traps should not be used in areas where pets, children or irresponsible individuals could be harmed. Non-target animals could be protected to a degree by determining what non-targets are in the vicinity and safeguarding them by placing only over burrows of 4 inch diameter or less. Removing traps at dusk would protect nocturnal animals.

According to an almond grower near Turlock, in Stanislaus County, he protected his 40 acre ranch with just a dozen traps. After a four month period he reported taking over 300 squirrels and only had to deal with squirrels invading from adjacent pasture land.

SUPPLIERS OF TRAPS

Northern Fur & Sport Co.
9191 Leavitt Road
Elyria, Ohio 44035
(1-800-523-4803)

Victor Conibear #110-2	$44.95/dz.
BMI #110 Body Trap	$34.95/dz
Duke #110 Body Trap	$34.50/dz

Krofick Outdoor Supply
30 Lightcap Road
Latrobe, Louisiana 15650
(412) 537-7923

Victor Conniber #110-2	$42.95/dz
Northwoods #100	$39.95/dz
BMI #110	$33.95/dz

P-W Manufacturing Company
510 High Street
Henryetta, Oklahoma 74437
(918) 652-4981

DK-2 Redwood Box Trap	$ 5.00/ea

LITERATURE CITED

CLARK, J. P. 1986. Vertebrate Pest Control Handbook, Sacramento, CA. pp 625 - 1-5. EDGE, W. D., and S. L. OLSON-EDGE. 1990. A comparison of three traps for removal of Columbian ground squirrels. Proc. 14th Vertebr. Pest Conf. 14: 04-106. SALMON, T. P., and R. E. LICKLITER. 1984. Wildlife pest control around gardens and homes. Univ. California Coop. Ext. Serv. Publ. 21385. 90pp.