

STUDY TITLE:

A field test of rodenticides for pocket gopher (*Thomomys* spp.) control.

PROJECT LEADER:

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EXECUTIVE SUMMARY

Strychnine has historically been the most effective toxicant used for pocket gopher management, but pocket gophers can develop resistance to the product if repeatedly exposed. Furthermore, supplies of strychnine are currently limited in the U.S., thereby minimizing the availability of this management technique. Other toxicants that are currently registered in the U.S. (chlorophacinone, diphacinone, and zinc phosphide) have not proven effective for pocket gopher control, so an alternative to strychnine would be very useful. Recent research with baits coated with cholecalciferol + diphacinone proved effective for California vole (*Microtus californicus*) control, and preliminary laboratory research with cholecalciferol + anticoagulant toxicants proved similarly effective

with pocket gophers. Therefore, we established a study to test these cholecalciferol + anticoagulant combinations for pocket gopher management in an agricultural field setting.

1. Although initial applications of strychnine were not significantly $> 70\%$, the mean efficacy ($\bar{x} = 79\%$) did indicate a substantial reduction in pocket gopher population size after a single application. We observed 100% efficacy across all three strychnine treatment sites after the second application.
2. The cholecalciferol combination products were less effective after the initial application ($\bar{x} \leq 59\%$), but efficacy from C+D ($\bar{x} = 83\%$) and C+B2 ($\bar{x} = 75\%$) were significantly $> 70\%$ after a second application. Efficacy for C+B1 did not differ from 70%, but further testing of this combination may be warranted given the high mean efficacy of this product ($\bar{x} = 85\%$).

The use of strychnine for pocket gopher management appears to still be the best option of the rodenticides tested to date. However, cholecalciferol + anticoagulant products also appear to have real potential for pocket gopher IPM programs.