

COMPLETED PROJECT REPORT

Project Title: Phosphine exposure to personnel and others associated with application of zinc phosphide artichoke bract bait for meadow vole control in artichoke fields

Research Agency: University of California - Cooperative Extension

Principal Investigator: T. Salmon

Budget: \$54,879

Background: Zinc phosphide bait is broadly used in agricultural production, right-of-ways, and urban areas for control of rodent pests. The use of zinc phosphide on fresh plant material as the bait carrier is less common than the use of grain baits.

Extensive damage to artichoke plantings occurs from meadow mice (*Microtus californicus*). The anticoagulant chlorophacinone is the only toxicant registered for use on fresh artichoke bracts.

However, control has been less than expected because the mice have likely developed a resistance to the chlorophacinone. In light of a suspected resistance to chlorophacinone, zinc phosphide on fresh artichoke bracts would be the alternate bait for control of the mice. Fresh artichoke bracts are the only effective bait carrier for this unique vole damage situation.

The primary reason for this pro-active worker safety study is to provide a safe working environment for personnel using this method of control. To our knowledge, there have been no such studies conducted on this bait material

Objectives:

1. Determine the extent of phosphine gas exposure, if any, occurring under field conditions in artichoke production, for employees who mix, load, act as bait runners and applicators during regular annual meadow vole baiting.
2. Compare the use of Draeger Pac III monitoring devices with Draeger low level phosphine badges as monitoring tools for phosphine gas.

Summary:

This project was terminated by California Department of Food and Agriculture (CDFA) effective December 30, 2006. The Environmental Protection Agency has stopped accepting research dealing with human/pesticide exposure. Until their issues and the concerns raised about human/pesticide exposure studies are met, we deemed it impossible to continue this project. The expenditures already made were for developmental work and for some material and supplies. Most of these remain available for use although some have expiration dates that have passed. If CDFA decides to pursue the zinc phosphide/phosphine exposure studies, we will submit a follow-up proposal that uses and incorporates as much of the material and supplies already purchased as possible.

Last Updated:

01/30/09