STUDY TITLE:

Chlorophacinone Efficacy Feeding Studies Using 0.01% Chlorophacinone Artichoke Bract for Controlling California Meadow Voles *(Microtus califomicus)*

PROJECT LEADER:

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EXECUTIVE SUMMARY

Artichoke growers in Castroville are currently using a chlorophacinone rodenticide (0.01% Rozol oil artichoke bract bait), to control their primary agricultural pest, the California meadow vole *(Microtus californicus).* In late 2002 the Rozol oil manufacturer will drop the Federal registration, creating a need for a replacement material. The suggested replacement is a mineral oil-chlorophacinone powder mixture that forms a 0.28% chlorophacinone suspension. The chlorophacinone suspension is blended with a specified mass of artichoke bracts to make 0.01% finished chlorophacinone artichoke bract bait.

In order to test the new solution as an effective replacement for Rozol oil (0.28%), we performed a series of bract bait feeding trials where efficacy of the product was measured. These trials consisted of three different types; cage trials conducted in the laboratory under controlled conditions, outdoor pen trials, and trials in commercial artichoke fields near Castroville, California.

Summary of field trials-
The final step in testing the efficacy of the new formulation was to conduct chlorophacinone bract bait field trials in Castroville artichoke fields. Conducting feeding trials in artichoke fields is difficult because population size is large and variable over time. Determining the actual number of animals is nearly impossible. In order to assess the efficacy of the new formulation we looked at vole activity before baiting and compared it to vole activity after baiting. We sampled areas where fresh vole damage was seen and in these areas bracts were put out and marked by flags. Total percent of bracts eaten was used as an index for activity. In the August field trial there was an 86% decrease in % bracts eaten/flag following treatment of the artichoke field. In the September trial, there was a 90% decrease. We cannot assume that the % decrease in bract chewing represents the actual decrease in population. However, the decrease in activity suggests that vole numbers were decreased by a significant amount.

Overall Summary-
The newly formulated 0.28% chlorophacinone/rnineral oil suspension performs in a very similar manner to the original 0.28% Rozol chlorophacinone oil. While the manufacturing process is somewhat different, the use of the finished bait remains the same. In looking at efficacy of the new material in the laboratory and field, the overall efficacy appears substantially the same as the Rozel oil. The proposed change in the manufacturing process should have no negative impact on the overall efficacy of the 0.01% Chlorophacinone treated artichoke bracts.

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