# STUDY TITLE:

EFFECTS OF PROCESSING AND HANDLING ON ANTICOAGULANT ACTIVE INGREDIENTS AND BAIT QUALITY

# PROJECT LEADER:

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# EXECUTIVE SUMMARY

As part of the Environment Protection Agency's (EPA) re-registration process, the California Department of Food and Agriculture (CDFA) was required to submit detailed information on the manufacturing process used to produce its rodenticide baits. As part of the Ground Squirrel Best Management Practices (BMP) project, we worked with CDFA to identify the procedures and formulas used by each agricultural commissioner/manufacturer that make CDFA labeled baits. Through this process, including several site visits, it became obvious that each county has unique skills, equipment and understandings of the process. While this was not unexpected, the effects on compliance with the Confidential Statement of Formula (CSF) are significant.

The concentration of active ingredient (a.i.) and integrity of the bait is crucial for efficacious control of rodents. EPA requires that pesticides comply with the CSF within certain acceptable tolerances. For CDFA's anticoagulant baits, the a.i. limit is +- 10%. During our preliminary work on bait quality (BMP Project), we purchased anticoagulant bait from each agricultural commissioner that produced bait and from three others that sold CDFA bait manufactured by commercial interests. We tested that bait for compliance with the CSF by checking the bait carrier (grain type), the dye concentration, a.i. concentration, and the overall quality. Using HPLC (High Pressure Liquid Chromatography), we quantified the percent a.i. Through this analysis, we found that a significant number of baits were under the EPA accepted

limits or otherwise outside the CSF. This presents problems since the material sold must be represented correctly on the label. Significant deviations in formulation could lead to reduced efficacy of the bait material.

CDFA has embarked to establish an aggressive quality control program for CDFA baits produced by county agricultural commissioners and commercial companies. In addition to periodic testing for quality assurance, on-site evaluation of the bait mixing procedures is necessary to ensure compliance with EPA approved manufacturing procedures, and to help bait mixers deal with questions and concerns about the CDFA manufacturing methods. This is especially important because each mixing facility has different equipment and the scale of operation can vary greatly. This project provides background information and the initial steps to develop such a system.

Results

Eleven counties were either manufacturing rodent bait or selling CDFA labeled bait manufactured by one of 2 private manufacturers. Several problems were identified through this process (see Appendix I for details). In 2 cases, grains not listed on the CSF were used.

Active ingredient analysis indicated significant deviations from the products stated a.i. In one case, no active ingredient was detected. There were several labeling errors and most bait did not indicate a date made or lot/batch number.

Surveys from thirteen counties that made or sold private manufactured bait were analyzed. More detailed survey results for each county or entity are found in appendix II. These compare the information provided with the CDFA CSF provided to us at initiation of the project (see appendix III), and the bait formulations provided in the 1994 edition of the CDFA