

COMPLETED PROJECT REPORT

Project Title: Norway rat laboratory feeding study.

Research Agency: National Wildlife Research Center

Principal Investigator: G. McCann

Budget: \$9,380.00

Background:

Study Protocol QA 426 was written by the Study Director and approved by the Director, NWRC. The study was designed to furnish efficacy data required by the EPA for the reregistration of 1.0 and 2.0% zinc phosphide grain baits (EPA SLN no. CA-890026 and 890027, respectively).

Summary:

March 1999

The NWRC evaluated 1.0% and 2.0% zinc phosphide oat groat grain baits for control of albino Norway rats in the lab. For each bait, 60 white rats (20 control and 40 treated) were placed on a 3-day, 2 choice feeding study. Control rats received duplicate dishes (40 g each) of the Office of Pesticide Programs (OPP) rat and mouse challenge diet; whereas, the treated rats each received a dish containing 40 g of the treated bait and a second dish containing 40 g of the OPP rat and mouse challenge diet.

After 24 hours exposure to the 1.0% bait, 34 (85%) treated rats died; after 48 hours 2 (5%) additional rats died. The 4 animals (10%) that survived consumed a sublethal dose of zinc phosphide on Day 1 and were non-eaters of the treated bait on Days 2 and 3. No control rats died. The difference between consumption of the 2 bait types was not significant ($p=0.2983$) for the females but was significant for the males ($P=0.0873$). The mean zinc phosphide intake on Day 1 for the 36 dead rats was 48.52 mg/kg, ranging from 2.0 to 118.4 mg/kg.

After 24 hours exposure to the 2.0% bait all 40 treated rats died, with no control rats dying. On Day 1, the 40 treated rats consumed an average of 1.18 g of bait and 1.62 g of OPP challenge diet. Differences in consumption of the 2 bait types were not significant (females $P=0.4208$, males $P=0.1929$). The mean zinc phosphide intake for both sexes on Day 1 was 109.68 mg/kg, ranging from 1.61 to 274.45 mg/kg.

The 90% mortality for the 1.0% bait and the 100% mortality for the 2.0% bait both exceed the minimum efficacy standard of 70% established by the EPA for rodenticides.

Two final reports (one each for 1% and 2% zinc phosphide) were completed. They were submitted to the Registration Dept. of the Product Development Section for review, and then sent to CDFA .

Last Updated:

02/06/09