CONTROL OF GROUND SQUIRRELS WITH GROUND SPRAYS OF DIELDRIN²

The thirteen-striped ground squirrel, *Citellus tridecimlineatus*, and the Franklins ground squirrel, *Citellus franklinii*, have been serious pests for many years to some experimental plantings of sweet corn on the Illinois Agricultural Experiment Station Horticulture Farm in Urbana. Prior to 1956, small plots of corn have been usually completely destroyed, and 20 to 40 rows of corn around the edge of larger plantings partially destroyed. Depredation by rodents usually began a day or so after the corn seed was planted and continued until the seedlings were 8 to 10 inches tall. Efforts to poison the rodents or their burrows with strychnine or gas proved fruitless in past years owing to the extremely heavy and well-established population.

On March 29, 1956, shortly after signs of ground squirrel activity appeared in the spring, a border 100 feet wide was sprayed with dieldrin around an irregular 30-acre experimental field. The field was bordered with permanent bluegrass sod, and a sandy, terraced knoll planted with fruit trees extended along one edge of the field for some distance. The insecticide was applied to the bluegrass area with a horizontal boom sprayer at a dosage of three pounds of dieldrin in 50 gallons of water per acre.

The first planting of sweet corn was made in the experimental field on May 8, 1956. At that time wildlife technicians found only two burrows were active in the treated bluegrass area. Poison bait was applied by hand to one of the burrows but inhabitants of the other burrow disappeared without additional treatment. Beginning with the first planting of corn and extending through the last planting on June 14, 1956, not one hill of corn was known to be lost to the ground squirrels. The border treatment with dieldrin was 100% effective in protecting the valuable experimental plantings. Fresh burrows or signs of re-establishment were visible at only two locations seven months after treatment.

The manner in which the dieldrin produced mortality was not determined, but it is assumed that dermal contact with the contaminated surface of the soil and grass furnished sufficient opportunity for fatal intake of poison by the rodents. No observations were made on the effects of the treatment on other vertebrates but immediately following treatment, dieldrin at three pounds per acre is toxic to many animals including some farm animals. Indiscriminate use of this poison could affect beneficial wildlife temporarily.—WM. H. LUCKMANN, Associate Entomologist, Illinois Natural History Survey, Urbana, Illinois.

² Received Nov. 27, 1956.