

INTRODUCTION

The usefulness of an insecticide is based mainly upon its toxicity to arthropods. Until recently most insecticides applied to soils have been chosen not only for their toxicity, but also for their persistence. One application, if large enough, might last many seasons and thereby reduce the costs of materials and labor. However, it is this persistence that has caused some anxiety. Some chemicals last so long that repeated application causes an undesirable buildup (Edwards, 1965a). It is because of this accumulation that users have turned toward the so-called short-lived pesticides. This has led to a need for research on the impact of short-lived pesticides on the ecosystem.

In the past some research has been done on two of these short-lived pesticides, diazinon and Sevin. One extensive study of the impact of Sevin on a monoculture is that of Barrett (1968), who reported a very dramatic reduction in the total density and biomass of herb-stratum arthropods. Studies on the ecological impact of diazinon have been previously reported from the piedmont of New Jersey. Malone (1968) reported faunal simplification occurring among herb-stratum beetles and flies, but

enrichment among Homoptera with the use of diazinon. Shure (1969) reported that distinct differences between the diazinon-treated and untreated areas were lacking as far as the density of insects and spiders were concerned. Midden-dorf (1970), working with the effects of diazinon on certain macro-invertebrate populations of the soil, has shown that the densities of both arthropods and earthworms were significantly reduced.

The purpose of this experiment was to test the insecticide effects of diazinon and Sevin on the soil macro-faunal communities of a commercial monoculture. This involves testing the ecological impact of chemicals in a practical situation using recommended insecticide levels (Anonymous, 1970).