

SUMMARY

A short-term study was conducted on the impact of two short-lived insecticides, diazinon and Sevin, upon the soil macro-invertebrate community. Density and biomass were used to assess the insecticide impact.

In view of the past studies mentioned and the present study, it is difficult to make generalizations about the ecological impact of an insecticide. There are not only differences between chemically unique insecticides, but also there are differences between the effects of the same insecticide. Factors influencing the toxicity and persistence of an insecticide are numerous (Edwards, 1966; Harris, 1964, 1966, 1967). They are as varied as the site of application, the method of application, the level to which the insecticide is applied (i.e., soil vs. foliar), and the rate of application. All of these factors and many others influence the insecticide's effect upon a population of macro-invertebrates and plant species.

The results showed:

1. Only a trend toward macroscopic invertebrate inhibition by the insecticides was seen when total density/ m^2 and total biomass/ m^2 were calculated. Diazinon caused the greatest reduction in density.

2. Where the treatment effect could be tested, it was not significant. The taxa most suspected of being influenced by the Sevin treatment, Hemiptera and Homoptera, were not. This is believed due to the fact that the soil and not the herb-stratum community was sampled. The majority of the other taxa were not significantly affected by Sevin. Likewise, many of the taxa were not significantly affected by the diazinon treatment. Certain taxa showed significance, but only at a single time period and in only one hectare.

3. Significant plant biomass differences resulted from the diazinon treatment with hedge bindweed (C. sepium) being inhibited. Three other plant species were also significantly affected by the diazinon treatment, and all had greater biomass contents on the treated plot. These stimulatory effects may be due to the absence of hedge bindweed.