

more pounds of simazine the previous fall. At the end of one year, only the 16 pound rate left active residues sufficient to produce stunting. By the fall of 1959, after a lapse of two years, all plots which had received the initial incorporated treatments produced normal cabbage plants.

The initial treatments on the peat soil were made in the spring, followed by six months of warm weather. At the end of this time, there was some evidence of simazine activity with all treatments involving 4 or more pounds per acre. However, only the 32 pound treatment significantly reduced cabbage plant growth. Even this activity disappeared during the next year.

Residual activity from the annual pre-emergent spray treatments also was of short duration. Only once was there a clear cut effect of a spring spray application on cabbage growth the following fall. This occurred during the first year following the 6 pound spray treatment on the organic soil. On both soils, Treatments 10, 11, and 12 resulted in measurable reductions in cabbage growth as a result of fresh chemical applications.

Growth ratings and yield data for oats are given in Table 3. By the fall of 1958, oats were no longer affected by single incorporation treatments on either soil. As with cabbage, after the first year none of the sprays scheduled each spring (Treatments 7, 8, and 9) had any effect on the next crop. Each of these treatments involved applications up to 4 pounds on sand and 6 pounds on peat. In almost all cases, the yield data are in agreement with the growth ratings.

Data similar to those given for cabbage and oats were collected for several other crops during the course of these studies. To facilitate presentation of the results, crop injury indices were calculated by averaging all the tolerance ratings of the sensitive crops (corn excluded) and subtracting this mean from ten. This gave an injury index based on a 0 to 10 scale, with 0 indicating no crop injury and 10 indicating complete crop kill. These crop injury data, along with equivalent weed control ratings for each season, are summarized for the two soil types in Tables 4 and 5. Together these indices provide a concise measure of simazine activity in the soil.

For graphical presentation, a further consolidation of the data has been used, consisting of an average of the above described weed control and crop injury indices. This resulted in a total activity index, taking the observed responses of all simazine-sensitive plants into consideration.