gard to the role of soil microorganisms in determining the rates of simazine breakdown, persistence, and accumulation in soil are desirable.

SUMMARY AND CONCLUSIONS

The activity of simazine persisting in two Florida soils was studied over the period from 1957 to 1960 using corn, cabbage, oats, and several other triazine-sensitive indicator crops. In order to determine the rate of dissipation of this residual activity, 1, 2, 4, 8, and 16 pounds per acre of simazine were applied initially to Leon fine sand, and 2, 4, 8, 16, and 32 pounds per acre were applied to Everglades mucky peat. Activity loss and build-up were also studied using both annual and semiannual applications of 1, 2, and 4 pounds per acre of simazine on the sand and 2, 4, and 6 pounds on the peat. Crop plantings were made twice each year. Crops and weeds were rated for stand and development, and fresh plant weights were recorded for several of the plantings to determine the chemical activity as reflected by plant response.

Among the characteristic responses were the following:

1. Sweet corn on both soils was injured by 8 or more pounds of simazine during the first crop season after application. Definite injury to corn attributable to simazine residues was restricted to the organic soil and occurred only during the second season six months after treatment.

2. Cabbage on sand grew normally after six months where 1 and 2 pounds of simazine were applied, after one year where rates up to 8 pounds were applied, and after two years where 16 pounds were used. On peat six months after treatment, cabbage showed no significant visible evidence of simazine activity from application rates up to 16 pounds per acre. After 1½ years, cabbage in the 32 pound organic soil plots no longer showed toxicity.

3. The first time oats were planted during the fall of 1958, they grew without evidence of injury in all plots, except those freshly treated. This included simazine treatments on mineral soil ranging from 1 to 16 pounds per acre incorporated one year earlier and up to 4 pounds sprayed six months before. On organic soil there was no activity against oats from treatments as high as 32 pounds incorporated 18 months before and up to 6 pounds sprayed six months before.