Good Management Controls Pollution Danger Atrazine

Proper management should eliminate potential pollution in using atrazine to control weeds in cornfields, according to Dr. Jon K. Hall and associates of the Agricultural Experiment Station at The Pennsylvania State University.

The Penn State soil scientists recently completed 6 years of experiments to determine possible losses of atrazine from a corn field with an average slope of 14 per cent. Atrazine was applied at the recommended rate of 2 pounds per acre for surface application.

In a season when rainfall was above normal, loss of atrazine from "washoff" averaged only 5 hundredths of a pound per acre--a negligible figure.

The experimental site was planted in a manner to induce as much chemical loss as possible. The corn was planted up and down the slope instead of across the slope as recommended. The slope of 14 per cent was rather steep, giving a drop of 14 feet for every 100 feet.

Even in a year with intense rainfall early in the season, loss from "washoff" was only 9 hundredths of a pound per acre. Dr. Hall claimed such losses would have to be considered minor due to the nature of the site and the soil and crop management practices used.

It is obvious, Dr. Hall affirmed, that various chemical, biological, and non-biological forces in the soil and in the corn crop act to degrade the original herbicide.

Soil core studies revealed that the atrazine was broken down in the soil at a moderate rate. Also, more than half of the chemical reacted with the topsoil and was held there. Measured one month after application, atrazine had dissipated to 39 per cent of the amount applied at the 2 pounds per acre rate of surface application. Three months later the atrazine was down to 9 per cent of its original amount.

Dr. Hall said the flood conditions of 1972 created only slightly over 5 hundredths of a pound per acre "washoff" of atrazine.

"Herbicide losses in the total studies were not as serious as losses of water and soil which were considerable at times. The results speak strongly for sound soil and crop management practices to combat erosional problems," he affirmed.

The slight loss of atrazine was reduced considerably more in 1972 by adding a broadcast planting of oats adjacent to the corn at the bottom of the 14 per cent slope. This small block of oats further reduced chemical loss by 87 per cent. Furthermore, no atrazine toxicity symptoms were detected in the oats.

In addition to atrazine, the studies included two experimental s-triazine herbicides. Losses for one of these experimental herbicides, related to atrazine, were equally slight.

The Penn State soil scientists also examined the effects of an experimental s-triazine herbicide applied to alfalfa. Runoff water was very slight, no sediment was ever collected, and the concentration of herbicide was extremely small.

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(Number four of a series)

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The Old Timer

"It's a great pity there isn't a pesticide available for controlling the litterbug."