

NEWS NOTES FOR MAY

What About Those Nitrogen Losses?

Dear Sir:

The article on Nitrogen Losses from Golf Greens (January, 1977) would have been more helpful if the test conditions and procedures had been given in more detail. For example, how much nitrogen was applied? How much water was applied? What were the infiltration rates? What depth of soil, sand, or mixture was being studied? What was the nitrogen source in the 12-12-12 grade of fertilizer?

I'm wondering if the authors of the article feel that 45 days is a sufficient period for study of nitrogen leaching losses from slow release sources.

The U.S. Public Health Service recommends that NO_3 -nitrogen in potable water not exceed 10 ppm. This value may not be in accord with the 45 ppm NO_3 -nitrogen allowed by EPA but one is inclined to pay some attention to it. Assuming it to be a critical level, doesn't this change the significance of the data reported?

/s/ William H. Mitchell, Extension Agronomist

Dear Mr. Mitchell:

Relative to the concentration of NO_3 -nitrogen allowed in drinking water, EPA and the U.S. Public Health Service have a standard of 10 ppm NO_3 -N which is equivalent to 45 ppm NO_3 .

Rates of application for the various sources of nitrogen were two pounds per 1,000. Irrigation was at the rate of one centimeter of water per day between May and September and one centimeter every other day during the remainder of the year.

Infiltration rates ranged from 0.1 inches per hour on the soil mixture to over 10 inches per hour on the sand mixture. The depth of all profiles was 12 inches of soil, sand or mixture which overlaid 4 inches of gravel.

The nitrogen source in the 12-12-12 fertilizer was urea and ammonium sulfate.

The 45-day observation period was insufficient to collect all of the nitrogen from the slow-release sources of nitrogen. However, the nitrate levels in the leachate were very low for all nitrogen sources.

I hope we have answered your questions. Most of this information should have been included in the article.

Richard L. Duble,
Turfgrass Specialist

Electric Charge Boosts Pesticide Application Effectiveness

Dr. S. Edward Law, Agricultural Research Engineer of the University of Georgia, has developed a new system for pesticide applications. Under sponsorship of the University of Georgia and Cotton, Inc., Dr. Law electrically charges pesticide spray droplets which are then attracted to the plant leaf surface. The system can cut pesticide consumption by one-half at a saving of \$1 billion annually for the American farmer. The USGA Research and Education Fund is supporting Dr. Law's work as it relates to turfgrass applications.

When spraying pesticides, compressed air is used from a spray-charging nozzle to propel the electrically charged droplets toward the plant. A negative charge is usually used. As the charged cloud approaches the crop, the constraint to remain at ground voltage induces into the crop an opposite charge to that of the cloud. Thus, the negative particles are drawn down to the plants.

"Of special importance," says Dr. Law, "is the fact that not only is more pesticide deposited on the plants, but it is distributed more evenly." This means less pesticide will be needed for control and low volume spray applications will be ideal.

U.S. Patent rights were granted in January, 1977 and foreign patent applications are already filed. The equipment will be relatively inexpensive and will utilize a solid state power supply that can be run off a tractor battery. Since conventional pesticide applicators usually put only 20 percent of the material onto the target plants, Dr. Law's new technique expands agricultural scientific horizons once more.

Diseases; Insects; and Weeds—Beware!