Pesticide Fate in Turf—

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munity intercepts all pesticide applications and absorbs a fraction of each application. Plant absorption is one mechanism of pesticide transformation since most plants attempt to transform pesticides into more water soluble compounds through biochemical reactions. The extent of plant absorption of various pesticides by turfgrasses has not been well studied, and thus the magnitude of this pathway of pesticide removal is not known.

Another means of pesticide degradation that is difficult to quantify is photodecomposition, which is the degradation of compounds by light energy. This is difficult to study under natural conditions because it is difficult to tell whether degradation is due to light, microorganisms, volatility or other factors. The dinitroaniline herbicides (e.g. benefin, trifluralin, pendimethalin, and prodiamine) are known to be susceptible to photodecomposition; however, once they are watered into the soil, they are assumed to be safe from photodecomposition.

Microbial degradation is the most common means of pesticide degradation. Microorganisms are extremely efficient at degrading a wide variety of organic compounds. Microorganisms degrade pesticides by two different processes. Microorganisms which can use a pesticide as a food source are said to metabolize the pesticide. This method of degradation leads to a fairly rapid disappearance of the pesticide. Some microorganisms will alter the structure of the pesticide but are unable to gain any energy from the reaction. This process is called cometabolism. A pesticide degraded by a cometabolic process would tend to persist in the soil for a longer period of time. Microorganisms are extremely diverse and capable of degrading a wide range of organic compounds. Degradation by microorganisms is desirable because it usually results in the detoxification of the pesticide.

This discussion has attempted to identify the major pathways by which pesticides are transported or transformed in the environment. The issue of pesticides in ground or surface water and public exposure to pesticides will continue to be a major concern for our industry. Understanding the issues and concerns of pesticide use can only benefit our industry.

1) R. Doll and R. Peto. 1981. J. Natl. Cancer Inst. 66, 1192.

2) Watschke, T. L., S. Harrison, and G. Hamilton. 1988. Movement of nutrients and pesticides in runoff from turfed slopes. Agron. Absts. 157.

Former Researcher Joins GCM As Technical Editor

David M. Bishop has joined *Golf Course Management* (GCM) magazine as technical editor according to Clay Loyd, publications director for the Golf Course Superintendents Association of America (GCSAA).

GCM, the monthly journal for golf course superintendents and turfgrass managers, is the association's official publication.

Bishop comes to GCSAA from UAP Special Products in Fremont, Neb., where he served since 1985 as technical services manager/agronomist. Previously he spent five years with the University of Nebraska extension service specializing in turfgrass integrated pest management.

"GCSAA will be able to further expand the technical editorial content of *GCM* for the benefit of its readers, especially member golf course superintendents, with the addition of this newly created full-time position," Loyd said. "David Bishop brings to the magazine the background, contacts, skills and talent to help in that effort."

Bishop holds a master's degree in horticulture, with a minor in entomology, from the University of Nebraska, Lincoln. His research focus at Nebraska was the distribution and life cycle of the black turfgrass beetle, ataenius.

Colleen Smalter Pederson, GCSAA director of education, had been serving as technical editor in addition to her regular duties. Pederson will continue to concentrate on GCSAA's growing educational programs and other new program assignments.

Want Information About An Employee Right-To-Know Video and Another On Pesticide Use?

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7308 Aspen Lane North, Suite 144
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For more about information, MGCSA President Kerry Glader invites you to call him at 612/253-5250.