OFFICIAL PUBLICATION OF THE GOLF COURSE SUPERINTENDENTS ASSOCIATION OF NORTHERN CALIFORNIA

OCTOBER 1988

GCSANC THRU THE GREEN

FERTILIZERS MAY BECOME VICTIMS

Fertilizer's in California may soon fall victim to the same type of regulatory restriction's that now hinder the use and registration of pesticides, if various environmental groups and some state legislators have their way.

Anti-fertilizer advocates often charge nitrate and phosphorus fetilizers with being a major source of water pollution. Research studies through the years however would tend to disput the assertion that fertilizers when properly applied to turfgrass are a significant source of water pollution.

Phosphorous, for example, is transported to surface waters by three mechanisms;1) in solution by leaching, 2)in solution by runoff and 3)in sediments carried by runoff (Zobriski et al., 1971). Only small amounts of phosphorus are lost via leaching, however, with surface water being the major transport route.

"One of the most striking characteristics of native soil phosphorus and fertilizer phosphorus is immobility. Practically all phosphorus applied in soluble form is converted to water insoluble compounds within a few days. Furthermore, phosphorus adsorption by soil solids and uptake by plants and microorganisms tend to restrict the downward movement of phosphorus in percolating waters." (Edward and Harold 1970).

Since phosphorus is primarily by surface runoff, dense well-managed turf will provide a cover which will slow water movement, reduce soil loss, and also prevent soil compaction while the extensive root system funnels the water into the ground. (Barnett, et al., 1972).

A study of particulate phosphorus collected from a variety of urban land uses in Madison, Wisconsin, showed highest particulate phosphorus levels were found at actively eroding construction sites. One reading was taken after sodding a construction site and the phosphorus level fell dramatically. (Cowen and Lee 1976).

Therefore, well maintained turf should not be a contributer of phosphorus to surface water erosion and runoff are minimized.

Nitrogen is potentially more dangerous since plants available nitrate nitrogen can be leached from the upper surfaces of the soil profile in addition to the possibility of being moved over the surface in runoff waters. Research by Diete and Ellis (1970), on fertilzed Michigan soil showed that nitrate derived from slow-release nitogen fertilizers were not significantly leached into lower soil layers, and therefore reduced any pollution hazard. Another factor which greatly reduces the possibilty of nitrates leaching into the deeper soil layers is the extensive root systems of a well maintained grass lawn. It has been estimated that in one cubic inch of soil beneath a bluegrass sod it is possible to have (con't. page 3)

(con't. from page 1)

nearly one mile of root systems. It would appear quite improbable that a root system such as that would allow significant quantities of nitrate to leach beyond it when they selectively absorb this form of nitrogen. Also, research has shown that leaching of nitrates to the eight foot depth was less in the fertilized plots than the greater plant growth utilized more of the nitrogen. (Edwards and Harrold, 1970).

This information combined with other grass studies would make it appear quite improbable that the proper use and application of turf fertilizers is a major source of water pollution.

Article contributed by Chuck Dal Puzo

Bibliography

Zubriski, J.C., W.C. Dahnke and D.A. Torkelson, 1971: Phosphorus as a Pollutant in Surface Waters. North Dakota Farm Bureau.

Edwards, Wm. and L.L. Harrold, 1970. Agricultural Pollution of Water Bodies. Ohio J. Sc. 70(1): 5056.

Barnett, Ap, Ed Beaty, A.E. Dooley 1972. Runoff and soil losses from closely grazed fescue; A new concept in grass management for the southern piedmont. J. Soil and Water Conservation. July-August; 168-170.

Cowen, W.F. and G.F. Lee 1976. Phosphorus availability in particulate materials transported by urban runoff. J. Water Pollut. Control Fed. 48 (3): 580-591.

Diete, P.E. and B.G. Ellis, 1972: Nitrogen Fertilization and Nitrate Movement under Turfgrass. Lawn Care, Mich. State Univ. Ext. Bulletin.

SIGGA FUND UPDATE

There will be 3 gifts of equal value given to 1) golf course personnel and superintendent, 2) commercial categories. Stay tuned for further details.

REGISTRATION REMINDER

If you send in card for meeting and do not cancel (either with the office or the host superintendent), you will be billed for the meal.

MEMORIAM

Jerry Gordon formally the Best Products representative in Northern California and more recently with Robinson Fertilizer recently passed away.

Jim Andrews, retired from Sunnyvale Municipal and Sunken Gardens (1985), suffered a fatal heart attack September 15. Our deepest condolences to family and friends.

SEPTEMBER SPEAKER HIGHLIGHTS

Mr. Carey Krefft, provided an educational speech for our association during the September 12 meeting at Del Monte GC.

He spoke of "SPRAYER CALIBRATION AND STATE OF THE ART SPRAYER CONTROLLERS".

The topics he discussed are ones that are sometimes taken for granted. Topics like: Pesticide usage and its increasing focus by the public; The importance of controlled-calibrated chemical application; Sprayer nomenclature; Sprayer calibration techniques and state-of-the-art sprayer calibration accessories.

A speech outline and more information are available by calling Mr. Krefft's office at (415) 483-7394.

CHANGE OF BUSINESS NAME

Steve Pasalich is changing the name of Pasalich Trucking to Bay Counties Sand and Gravel at Dillon Beach.

GOLF COURSE SEMINAR

There are still openings in the Golf Course Construction Techniques and Management Seminar. This 2 day seminar held at the Pleasanton Holiday Inn is sponsored by the Golf Course Superintendents Assoc. of Northern California and the GCSAA.

Date: October 19-20

Call: 800-472-7878