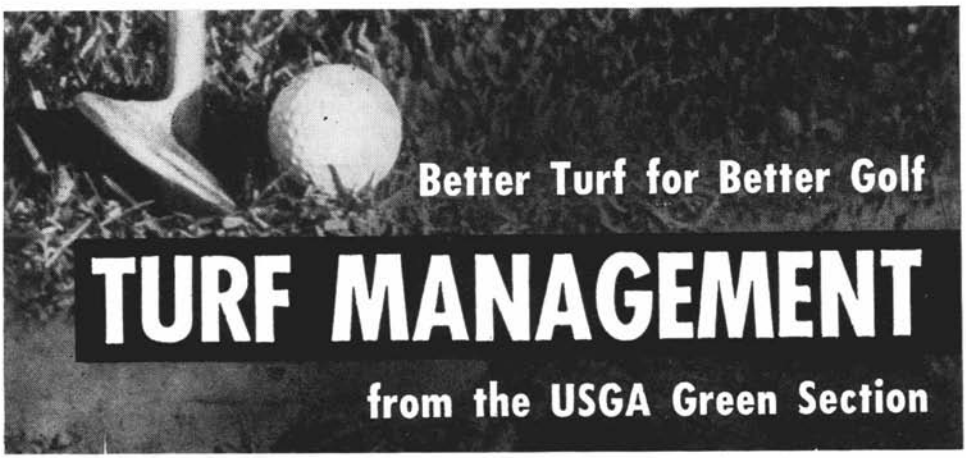

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WHAT ABOUT LIQUID FERTILIZERS?

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More and more one hears of golf clubs using liquid fertilizers, and of sales forces directing their attention to the clubs. Keeping pace with these developments presents a challenge which some green committee chairmen and greenkeepers fail to meet. We feel obliged to take a hand to help to set the record straight.

The Green Section has not conducted any tests on the use of fertilizers in solution. A great deal of research is going on, however, on the use of these materials on other crops. It is a known fact that plants are able to absorb nitrogen and some of the other fertilizer elements through their leaves. Thus of necessity the plant does not absorb all its mineral nutrients through the roots. It may be argued that this ability on the part of the plant may afford a saving in the use of fertilizer elements because there is no opportunity for leaching from the soil.

It is rather generally agreed, however, that the best way to provide plant food is through the soil, so that roots may absorb the mineral nutrients in the normal manner. It would be an extremely difficult job to provide all the nutrients required by the grass plant in liquid form in exactly the correct proportions and at the right time to be absorbed by the leaves.

A claim made by some manufacturers is that their products provide vitamins and trace elements or minor elements. There is no scientific basis for the claim that vitamins have any effect on the growth of grass. A number of years ago the Green Section conducted some tests on vitamins. All of these tests produced negative results. Many of the mixed fertilizers and most soils provide all of the minor elements which the plant needs. Only in rare instances may additional benefit be derived from their application in liquid form.

In summarizing this discussion thus far we may conclude that liquid fertilizers have no place on the golf course. This, however, is not the case. There are some special cases in which fertilizer in liquid form may be decidedly beneficial.

Sometimes conditions of poor aeration, water-logging, shallow roots, or the prevalence of a thatched condition on a green may be such that grass roots do not function normally and do not respond to fertilizer treatments. Under

such conditions the use of liquid fertilizers which could be absorbed through the leaves may be justifiable. However, a correction of the factors creating such conditions probably would be the wiser move.

In early spring, when the ground is cold, nitrification usually proceeds slowly and plant roots are relatively inactive in the uptake of nutrients. Fertilizer response is notably poor under such conditions. This is another condition under which the use of liquid fertilizer may be justified.

Many greenkeepers are hesitant to apply fertilizers in midsummer because they would cause the grass to become lush and susceptible to disease. Some greenkeepers have found that liquid fertilizer can provide a good color without the accompanying lush growth. Thus we have made a case for the use of liquid fertilizers under certain special conditions. However, the primary question still remains: Is it a good value?

How the Costs Compare

A comparison of costs should be made by anyone who contemplates the use of liquid fertilizers. Conventional fertilizers containing 20 percent of actual nutrients will cost from $40 to $75 a ton. A ton of such fertilizer contains 400 units of plant food.

To purchase an equal amount of plant food in some of the widely-advertised liquid fertilizers would cost more than $1,000. Some of the brands have 30 cents of plant food to the gallon based on sulfate of ammonia at $80 a ton, phosphate at $50 and potash at $100. It makes water an expensive filler at $3.70 a gallon.

We should hasten to add that not all manufacturers of liquid fertilizers charge such exorbitant prices. It behooves the buyer to figure out how much he is paying per unit of plant food. A dealer who is offering his material at a fair price will not object to such a comparison.

It has been said that economy of application more than offsets the increased cost of liquid fertilizer. It is within our province to question this statement. Obviously, a ton of fertilizer can be applied in any manner for less than the differences in cost which have been mentioned.

To date we know of no research work that has been sponsored by liquid fertilizer manufacturers. Some such research is needed badly so that we may know the facts about these products so far as turf is concerned.

In the absence of research data, the Green Section feels that it is obliged to offer this advice:

Don't pay more for liquid fertilizer than you would for conventional fertilizers unless you are faced with a condition that demands feeding through the leaves. If you are confronted with such a condition, it may be cheaper to correct it than to use liquid fertilizers to bypass the condition. Don't be outfigured by a clever salesman. Get competent advice from your state experiment station or from the Green Section.

Note.—The authors are indebted to Mr. R. S. Tufts, Mr. H. Alfred Langben, Dr. George N. Hoffer, Prof. H. B. Musser, Mr. O. J. Noer, and Dr. Hugh Gauch for reviewing foregoing statements.

COMING EVENTS

Nov. 27-29: Oklahoma Turf Conference, Stillwater, Okla. R. S. Dunning.

Jan. 3-5: Northeastern Weed Control Conference, Hotel New Yorker, New York.

Jan. 11-12: Mid-Atlantic Conference, Lord Baltimore Hotel, Baltimore, Md. E. N. Cory, College Park, Md.

Jan. 22-26: Rutgers One Week Turf Conference, New Brunswick, N. J. Ralph Engel.

Jan. 28-Feb. 2: 22nd Annual Turf Conference and Show, Hotel Sherman, Chicago, Ill. A. M. Brown, P. O. Box 106, St. Charles, Ill.

Feb. 12-14: Texas Turf Conference, College Station, Texas. James R. Watson, Jr.

Feb. 26-Mar. 1: Pennsylvania Turf Conference, State College, Pa. Prof. H. B. Musser.

Mar. 5-8: Midwest Turf Conference, Purdue University, W. Lafayette, Ind. W. H. Daniel.

Mar. 8-9: Massachusetts Turf Conference, Amherst, Mass. L. S. Dickinson.

Mar. 13-14: Northwest Turf Conference, Pullman, Wash. E. G. Schafer.

Apr. 30-May 1: University of California, Los Angeles. V. T. Stoutemyer.