

(Continued from last month)

## DR RALPH ENGEL'S TALK AT THE ILLINOIS TURFGRASS CONFERENCE, DECEMBER, 1963

### Nitrogen Studies

Results from the first year of a U.F. nitrogen fertilization study indicated a large nitrogen release approximately one month after treatment with single large applications. Second and third year results have shown similar behavior. In contrast to the surge from single, heavy applications of ureaformaldehyde we have obtained uniform growth from small, repeat applications. For those turfgrass growers in our area, smaller and more frequent applications are suggested rather than a single, heavy treatment if the maximum uniformity of stimulation is sought. Also, we have considered the tendency for ureaform to give less total growth. This led us to study the fate of this material after application. After three years of treatment with ureaform and various fertilizer materials, the total N near the surface of the soil was measured. Higher quantities of nitrogen were found where ureaform had been used the three previous seasons. This gave a moderate delayed growth effect the following season, but the quantity of this carry-over was not great enough to appreciably reduce the need for additional fertilizer. While some of our newer forms of fertilizer are very useful, it is my opinion that we still have not found the ideal type of slow release nitrogen.

Nitrogen has very great effects on turf other than to increase top growth. It tends to increase leaves more than roots. In some cases, excessive use of nitrogen decreases the total quantity of roots. Rhizomes are less abundant on Kentucky bluegrass that

is grown with a high level of nitrogen. This fact along with several others appears to discourage survival of high nitrogen Kentucky bluegrass turf in very hot, dry weather. Our work to date suggests September and October are the best months for Kentucky blueclimate. Test plots have shown that summer survival of bentgrass becomes far more difficult with increased grass fertilization. This may not be true for your use of nitrogen. Very light and more frequent nitrogen fertilization seems most appropriate on bentgrass fairways in our section.

With fear that my statements on new developments and New Jersey procedures may lead to their indiscriminate usage, I wish to give a bit of philosophy on new items and techniques. What are some of the guide lines to wise adoption of new developments?

1. First, observe experimental and trial results on turf on every occasion. This is the best type of proof.

2. Evaluate each item for your situation. This will continue to be as necessary as ever. We are in a day and age when we cannot delay the use of everything new until all the facts are in. Also, some of the untested which should not be marketed will be around. To some degree this is the fault of Experiment Stations and Turf Superintendents as well as the seller.

3. Read on the new subject. This will give you information and stimulate critical thinking which will help you choose.

4. Ask if the new item fits your turf situation with regard to grass type, soil, maintenance, etc.

5. Separate facts from your feelings.

6. Weigh possible value versus risk and cost.

7. Begin use of the new conservatively.

Thank you.

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