

NITROGEN ON SPECIAL-PURPOSE TURF

"Special purpose turf requires liberal quantities of available nitrogen at all times throughout the entire active growing season to maintain satisfactory growth and quality. The relative value of various nitrogen carriers for turf fertilization was compared over a three-year period, 1947-1949, by measuring growth rates as determined by clipping weights throughout the growing season. Nitrogenous materials compared included different urea-formaldehyde formulations, activated sewage sludge (Milorganite), tannery sludge (Pitorganite), nitrogenous tankage (Agrinite), sulfate of ammonia and urea. In 1947 and 1948 field plot experiments were located on mixed Kentucky bluegrass-fescue turf at State College. The 1949 tests were located on similar turf at State College and on mixed colonial bentgrass and creeping bentgrass turf containing small percentages of *Poa annua* and *Poa trivialis* at the Ashbourne Country Club, in the Philadelphia area.

"Rates of nitrogen applications varied from 1½ to 5 pounds per 1,000 square feet. All treatments were applied in the spring. Growth rates of the grass were measured by clipping weight determinations made at weekly intervals or oftener on each plot in the test.

"The relative availability of nitrogen from the various sources is reported as differences between clipping weight of the treated and untreated (check) plots in each experiment.

"The results were:

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1. The urea-formaldehyde formulations showed more uniform rates of nitrogen release throughout the growing season than any other material tested.

2. The growth increases produced by the urea-formaldehyde formulations, activated sewage sludge and nitrogenous tankage were adequate to maintain a good quality turf throughout the growing season with a single spring application.

3. Single spring applications of soluble nitrogen resulted in excessive growth during the early part of the season with subsequent reductions to levels no better and sometimes poorer than the untreated turf.

4. Split applications of soluble nitrogen made at monthly intervals (except July and August) gave growth responses similar to single applications of slowly available forms of nitrogen.

5. Results of these experiments and findings of other investigators, as reviewed in the cited literature, indicate that urea-formaldehyde products of the ratios tested, are satisfactory sources of slowly available nitrogen for use on turf and can be used advantageously to replace or supplement supplies of natural organic nitrogenous fertilizers."—*Urea-Formaldehyde and Other Nitrogenous Fertilizers for Use on Turf, Bulletin 542, September 1951, The Pennsylvania State College, State College, Pa., by H. B. Musser, J. R. Watson, Jr., J. P. Stanford and J. C. Harper, II.*

Editor's Note: This piece of literature is a must for every progressive turf superintendent. The work reported is a decisive step forward in our knowledge of fertilizing turf. The Green Section takes pride in pointing out that Messrs. Watson and Harper, two of the authors, were graduate students at Penn State by virtue of USGA Green Section-financed turf research fellowships.