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CONTENTS

	Page
TEE SHOTS	5
TURFGRASS MAINTENANCE FERTILIZATION	7
LETTERS	15
NEWS	15
PULVERISED HORTICULTURAL BARK	19
GREENKEEPERS WAGES	23
SECTION NEWS	25

Front Cover Picture

Trained earthwork collects litter. 5 h.p. vacuum sweeper with extension hose from Allen Power Equipment Limited.

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TEE SHOTS

We are pleased to learn that Mr. Leslie Barlow of Woodlands Golf Club, Mordialloc, south of Melbourne, is back in form again after a sudden illness. Leslie Barlow is President of the Victoria Curators' Association and a keen supporter of international relationships; he is also President of the Australian Turf Management Association.

Mr. John H. Madison, Jack L. Paul and William B. Davis have produced a brand new management programme for maintenance of putting greens. They had seen thatch and compaction develop progressively and worked out the alternative.

Basically they provide light frequent top dressings of sand in the 0.05—1.0 m.m. range and lace it with Bentgrass seed, herbicide, insecticide, fertiliser, Dolomitic lime and mixed minor element chelates in varying proportions. When pesticides are included, they are added as wettable powders, and depending on season, various insecticides are included to make up the recommended rate.

The application works out at about 3 cu.ft. of sand and 1½ lbs. of additives per 1,000 sq. ft. This adds about ½" of sand per year to the surface. They do no hollow tine forking to maintain weed control and add no organic matter. Grass, they claim, creates its own organic matter.

Certainly the profile of their turf after two years treatment looks a lot more homogeneous than the control treated with conventional top dressings.

Turning a flooded golf course into a championship tournament course in less than two months for this year's Canadian Open Championship was cited as one of the reasons Mississauga Golf and Country Club's golf course superintendent, Paul Dodson, was awarded a "Citation of Performance" by his professional organization, the Golf Course Superintendents Association of America (GCSAA).

In making the presentation during the tournament's closing award ceremony, Charles Baskin, president of the 3,700 member GCSAA, noted that not only had Dodson overcome the severe damage caused by flooding as late as May, but that he had provided a true test of golfing skills for the professionals, and an interesting course for the spectators. Those tournament spectators who saw 12 of the course's 18 holes under the Credit River flood waters on May 17 could appreciate what Dodson had accomplished in preparing this course for the \$200,000 prize money tournament.

When the suburban Toronto course was named as site of the Canadian Open for the sixth time, Superintendent Dodson could not have imagined the amount of work he would undertake to prepare his course for the tops in today's professional golfing circle.



Granular Fertilisers

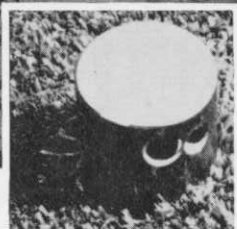
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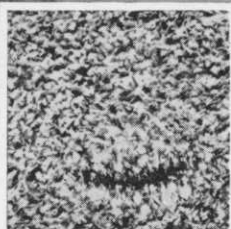
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NEW! This Toro 'pop-up' sprinkler disappears below ground after watering. Its fully retracting head protects against damage by mowers or vandals . . .



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(It could be St. Andrews, Troon, Sunningdale or your club...)

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SEE STAND L29 MOTSPUR PARK '74

TURFGRASS MAINTENANCE FERTILIZATION

With grateful acknowledgement to The Pennsylvania State University, Extension Service, University Park, Pennsylvania.

A regular lawn fertilization program is necessary if you expect to maintain good-quality Turf Pound for Pound, fertilization will do more to improve poor-quality Turf or maintain good-quality lawns than any other single management practice.

The best approach to the establishment of a regular fertilization program is to have a soil test made as a basis for the program. Soil testing service is available from The Pennsylvania State University Soil and Forage Testing Laboratory. Soil test mailing kits for this service may be obtained from your county agricultural extension office at a nominal cost. The soil sample is forwarded to the University. After the analysis is made, it will be returned to you with recommendations for fertilization.

Grass plants normally need nitrogen, phosphorus, and potassium (potash) in larger amounts than can be supplied naturally from the soil. Nitrogen is essential for vegetative growth and good green color as well as being a constituent of plant proteins, chlorophyll, amino acids, and other plant substances. Phosphorus is necessary for good root development and plays a role in many vital growth processes. Potassium is also required for physiological func-

tions and promotes disease resistance and winter hardiness in grasses.

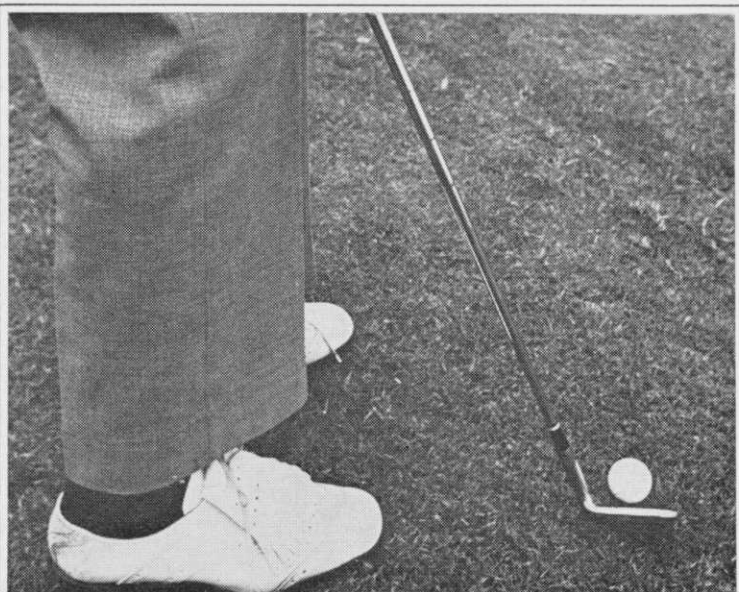
Fertilizer should be bought on a quality basis rather than on bag size. Value depends on the total amount of plant food contained in the bag and the source of the nitrogen-carrying portion of the fertilizer. Law requires that the total amount of plant nutrients be shown on the bag. Information on the bag may or may not indicate the source of nitrogen used; ask your dealer or county agent. If the fertilizer contains slow release nitrogen materials, the percent water insoluble nitrogen (W.I.N.) must be on the bag. If 35% or more of the total nitrogen is guaranteed to be water insoluble, you will be purchasing a quality lawn fertilizer.

Fertilizer Definitions

Complete Fertilizer—A complete fertilizer contains the three major fertilizer elements—nitrogen, phosphorus (phosphates), and potassium (potash).

Fertilizer Grade—A fertilizer grade is a designation of the percentages of nitrogen, available phosphate, and water soluble potash in the product. A 10-6-4 grade fertilizer contains 10% nitrogen, 6% available phosphates, and 4% water soluble potash. Thus an 80 pound bag of 10-6-4 would contain 8 pounds of nitrogen (10% of 80), 4.8 pounds of available phosphates (6% of 80), and 3.2 pounds of water soluble potash (4% of 80). Law requires that the grade be given on the container and always in the order of nitrogen, available phosphates, and water soluble potash.

Fertilizers Ratio—A fertilizer ratio indicates the relationship between the percentages of nitrogen, available phosphates, and water soluble potash found in fertilizer. A 10-5-5 grade contains twice as much nitrogen as available phosphates or water soluble potash and would have a 2-1-1 ratio. Grades of 16-8-8 and 20-10-10 would



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also have a 2-1-1 ratio. A grade of 12-4-8 would have a 3-1-2 ratio. The simplest means of determining a ratio is to take the smallest number in the grade and divide it into each number of the grade.

Turf Type Fertilizer—A turf type fertilizer is normally defined as a complete fertilizer having an approximate 2-1-1 to 3-1-2 ratio, containing a minimum of 10% nitrogen, and having 35% or more of the total nitrogen as water insoluble nitrogen.

Lightweight Fertilizer—Lightweight fertilizers have the nutrients impregnated or carried on such materials as vermiculite, ground corn cobs, peat, composted garbage or trash, synthetic foams, and similar materials. They often have a higher nitrogen guarantee than normal weight fertilizers, and a given area can be treated with a smaller total weight of material. Many of these materials contain soluble (quickly available) rather than the more desirable insoluble (slowly available) nitrogen.

Liquid Fertilizer—Fertilizer nutrients carried in suspension or in water solution are termed liquid fertilizers. The value of these materials is based on the grade and the weight of the liquid rather than the fluid content. Law requires the weight to be on the container. The plant nutrient content may be calculated in the same manner as with dry fertilizers. If, for example, a gallon of 10-5-5 liquid fertilizer weighs 10.5 pounds, then that gallon would contain 1.05 pounds of nitrogen (10% of 10.5), .525 pounds of available phosphates (5% of 10.5), and .525 pounds of water soluble potash (5% of 10.5).

Water Insoluble Nitrogen

A fertilizer bag may carry the following label:

10-5-5
Guaranteed Analysis

Total Nitrogen	10%
4% Water Insoluble Nitrogen	
Available Phosphates	5%
Water Soluble Potash	5%

In the above label example, the 10% represents the total percentage of nitrogen contained in the bag, and the 4% represents the total percentage of nitrogen in the bag that is water insoluble. The percentage of the total nitrogen that is water insoluble must be calculated from this label information. This value can be obtained by dividing the percentage of water insoluble nitrogen indicated on the label by the total percentage of nitrogen contained in the bag (also indicated on the label) and multiplying by 100. In this case $4\% \div 10\%$ times 100, or 40%, of the total nitrogen is water insoluble. Thus, this fertilizer meets the requirements of a turf-grade fertilizer. If the grade were 20-10-10, having 4% water insoluble nitrogen in the bag, the percentage of the total nitrogen that is water insoluble would be $4\% \div 20\%$ times 100, or 20%, and the fertilizer would not meet the requirements.

Types Of Nitrogen

The ideal fertilizer program provides uniform growth over the entire growing season. The types of nitrogen-carrying materials in a fertilizer are very important in determining how such a program can be obtained. Basically, nitrogen materials are divided into two broad groups—quickly available and slowly available.

The quickly available materials are water-soluble, and the nitrogen is immediately available to the plants. Results are a sudden flush of growth and a rapid depletion (two to six weeks) of the available nitrogen. Thus, it will be necessary to make frequent light applications of these materials

Time for **TEXTURF**



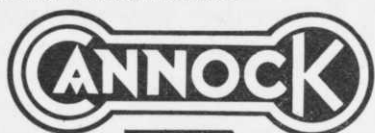
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Apply at 2 lbs. per square yard during the Autumn and Winter months.



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