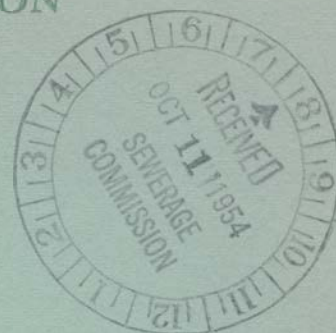


UNITED STATES GOLF ASSOCIATION
GREEN SECTION

SOUTHEASTERN OFFICE
Georgia Coastal Plain Experiment Station
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SOUTHEASTERN TURFLETTER

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START PREPARING IN THE FALL FOR THE SPRING TRANSITION

For most golf clubs in the Southeast there are two pivotal periods of turf production---the change-over from summer to winter greens and from winter to summer greens. Each conversion has its own problems, but the spring rye-Bermuda transition is the perennial pest. Early fall is the time to begin preparing for the spring transition. Many superintendents have observed that fall fertilization of Bermuda grass greens pays dividends next spring.

Bermuda Grass Likes Its "Beef Steak"

All of us must consume proteins to live and generally prefer animal sources -- beef steak. Strange as it may seem, grasses must also have proteins to survive. Unlike you and I, grass cannot choose between plant or animal sources of protein, but must assimilate its own from nitrogen. Liberal early fall applications of nitrogen are stored by Bermuda grass as protein and used the following spring when it begins growth. Of course, it is necessary for other elements to be present in the soil in sufficient quantities to support good growth.

Fall Applications of Nitrogen to Bermuda Grass Pay Dividends

Tests conducted cooperatively by the Georgia Highway Department, U. S. Department of Agriculture and Georgia Coastal Plain Experiment Station at Tifton, Georgia, indicate that the growth of Bermuda grass can be greatly increased by increasing the protein content. Increased protein content of Bermuda rhizomes results in increased growth and better performance under adverse growing conditions.

Dark green color in the leaves of grass generally means that it has received an application of nitrogen. Protein which is stored for spring use, however, is not stored in the leaves but in the rhizomes (below ground stems). Thus, nitrogen applications must be made well in advance of the date winter grasses are seeded to allow the Bermuda time to absorb, assimilate and then store nitrogen as protein.

COTTONY BLIGHT DISEASE OF RYEGRASS

Many golf clubs have had severe attacks of disease of newly seeded ryegrass greens. In some cases, complete loss of ryegrass resulted from the attacks. After observing diseased specimens from golf courses and the experimental plots at Tifton, scientists of the U. S. Department of Agriculture and University of Georgia identified the disease as Cottony Blight of Ryegrass caused by Pythium aphanidermatum, one of the damping-off organisms. The attacks have been associated with high temperatures and humidity. The organism does not seem to be active at temperatures around 70° or below.

Identification of the Disease

The disease is first recognized by the presence of small, irregular white spots in the turf. These spots originally have the appearance of a dense spiderweb woven in the turf. As the disease progresses, the small white spots become more pronounced, taking on a definite cottony appearance with the turf appearing as though someone had scattered cotton over the affected areas. The cottony appearance results from the unusual amount of light colored, aerial fungus growth.

The infected leaf blades at first appear soft and greasy and mat together when disturbed. Affected areas rapidly turn brown, practically all susceptible plants being killed. Diseased areas may range from a few inches to several feet in diameter. The disease develops very rapidly. A turf that appears perfectly healthy on one afternoon may, under favorable conditions for the pathogen, be completely overrun by the disease the following morning. The extremely rapid disease development appears to be favored by periods of high humidity and high temperatures.

Methods of Control

Tests conducted at the Georgia Coastal Plain Experiment Station last year indicate that treating of ryegrass seed, spraying fungicides on diseased areas, or mixing chemicals with the soil were not effective means for controlling the disease. The best method of control appeared to be delaying the seeding date until temperatures are in the low 70's. Treating topdressing material with 3 pounds of methyl bromide per 100 square feet of surface (topdressing should not be over 2 feet deep) gave good control of the disease. If a lighter rate of methyl bromide is used, topdressing should remain covered for at least 48 hours. Methyl bromide gives best results if it is applied when temperatures are above 65°.

CONTROL OF WEEDS IN PUTTING GREENS

Weeds may become established in putting greens because of poor construction (improper drainage, soil, mixing etc.), use of inferior grasses, contaminated soil and weakened turf from too much shade or misuse of water, fertilizer, chemicals etc. Even with one's best efforts, weeds will occur in turf.

The following table is presented to suggest some of the chemical methods of control and is based on the results of tests conducted at the Georgia Coastal Plain Experiment Station, Tifton, Georgia, over a period of years. Note that several materials may be effective for the control of a particular weed. Getting acquainted with the application, rates and response of turf grasses to the materials is the most important step in a chemical weed control program.

A SUMMARY OF MATERIALS USED FOR WEED CONTROL IN PUTTING GREENS

| WEED | Prevent Contamination of topdressing or new green | | Control after Weeds are Established | | | | |
|---|--|----------------------|-------------------------------------|-----------------------|----------------------|-------------------|-------------------------|
| | Methyl bromide | Calcium cyanamide | Sodium arsenite | PIAS | Potassium cyanate | MCP | 2,4-D Formu- lations |
| Bermuda | " | " | | | | | |
| Clover, Dichroندا, Pennywort | " | " | | | | | $\frac{1}{2}$ Oz. |
| Crabgrass | " | " | $\frac{1}{2}$ - 1 Oz. | $1\frac{1}{2}$ -3 Oz. | 3-4 Oz. | | |
| Crowfoot (Silver crabgrass) and other annual grasses | " | " | " | " | " | | |
| Poa annua | " | " | ? | ? | | | ? |
| Sedge (water or swamp grass) | " | " | 1 - 2 Oz. | 4-6 Oz. | | 1-2 Oz. | |
| Spotted Spurge (carpet or milk weed) | " | " | $\frac{1}{2}$ - 1 Oz. | $1\frac{1}{2}$ -3 Oz. | 3-4 Oz. | $\frac{3}{4}$ Oz. | $\frac{1}{2}$ Oz. |
| Nutgrass | " | " | | | | | ? |

* All rates are given in ounces per 1000 Sq. Ft. of the following formulations: 95% Sodium arsenite powder, 10% PIAS, 100% Potassium cyanate (sold as "Weedone Crabgrass Killer", "Crab-foot Crabgrass Killer" etc.), 3.2 Lbs. per Gallon MCP and 4 Lbs. per Gallon 2,4-D. Two to three applications spaced 7 days apart are needed for control. This applies to all materials except Potassium cyanate. Apply Potassium cyanate every other day. Methyl bromide (1 Lb. per 100 Sq.Ft.) may be used to completely kill a green and then replant within a few hours. Methyl bromide & 15-15 Lbs. Calcium cyanamide per Cu. Yd. (American Cyanamid Co.'s Acro-Cyanamid) are used to sterilize topdressing material. Use approximately one-half the suggested rates for rye or bent greens.

Effectiveness of the materials used for the control of grassy weeds, sedge (water grass) and spurge (carpet weed or milk weed) can be increased by:

1. Adding the low volatile esters of 2,4-D to sodium arsenite, potassium cyanate or HMAS spray solutions.
2. Using wetting agents in the spray solution.
3. Watching the frequency between applications - do not allow weeds to recover between applications.
4. Making sure that the correct rates are applied.
5. Using just enough water to wet the plants.

Mechanical control and biological control of weeds are two methods that should not be overlooked. Hand weeding and the use of vertical cutting equipment are the most important mechanical methods of weed control. The use of grasses which, when established, tend to crowd out undesirable plants is a very effective but often overlooked method of weed control. Grasses have been selected for this biological characteristic.

FLORIDA TURF CONFERENCE

Dr. Jack Harper, III, U. S. Department of Agriculture, struck the keynote of the Second Annual Florida Turf Association Conference held August 3, 4 and 5 when he stated that "Turf management means liberal application of common sense." Dr. Gene Mutter, University of Florida, stated that even though research has been defined as "a dignified method of making people dissatisfied with what they have", progress in turf production is correlated with research.

HAS YOUR CLUB SUBSCRIBED?

The Southeastern Turfletter is designed to help golf clubs with their turf problems and to keep them up-to-date in the field of turf management. One-half day visits to subscribing USGA clubs in the Southeast for this year are being completed. We would like very much to work with your club and extend again our invitation for all USGA member clubs to subscribe to the Regional Turf Service of the U. S. Golf Association Green Section.

Southeastern Turfletter

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