Texture, Color Deteriorate

Selected Bent Strains Lose Identity When They Are Overseeded

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There is little question that the demand for the finest quality greens is more prevalent today than ever before. Golfers know too well that it is possible to produce quality putting greens. They expect the finest greens at private clubs and daily fee courses. Since the number of rounds played has increased tremendously in recent years, the demands on course supts. have increased in proportion. It has become increasingly difficult to keep excellent putting greens at all times throughout the growing season.

Bentgrass, when allowed to grow naturally, is cross-pollinated. Cross-pollination (a process of reproduction in which the pollen of each plant is shed freely and serves to fertilize the flowers of other plants of the species rather than its own) gives new plants in which the individual plants differ considerably. No two are exactly alike. The most vigorous grasses in the seed will crowd out the less vigorous types.

Not Always Most Desirable

Vigorous types are not necessarily the most desirable grasses for putting green turf. If two plants of a selected strain, (such as Cohansey) are allowed to grow to maturity, they form seedheads and cross-pollinate. No two seeds produce exactly the same plant, either as the parent, or others, from seed.

Some might resemble one another so much it would be impossible to distinguish one from the other, but genetically they would be different. They may look exactly alike, but have considerable differences in disease resistance or in heat and cold tolerance.

To consistently produce true stolons of selected strains, it is necessary to either prevent seedhead formation or remove any seedheads that are formed before they become fertile. Greens planted with a selected strain of bent should never be overseeded with any kind of seed, since the identity of the original strain is lost. Seeded greens will eventually present patchy turf as a result of variations of texture and diversity of color. This comes about because the more vigorous grasses from seed will increase in the greens while the less vigorous ones recede.

The first research to find improved grasses for putting green turf was initiated in 1920 with the selection of several outstanding creeping bents that were present in putting greens of that era. These selections were made because they exhibited outstanding growth characteristics. Quite frequently their resistance to disease made them more aggressive.

Uniformity Is Necessary

Another important factor in selection was the uniformity of texture and color since these factors are of prime importance for the finest greens. Individual clones were selected and increased. In producing stolons the runners are divided and increased with all subsequent growth being exactly the same as that of the parent plant.

After much study and evaluation the best of these grasses were released to golf courses to use in putting green construction. This marked the first time that a supt. could plant his greens with stolons of a single strain of creeping bent with uniform quality, texture and color. He knew in advance the quality of turf he could ultimately expect to have.

Given Thorough Testing

Since 1920 many more selections have been made and evaluated. A promising selection is usually tested in many locations to determine its range of adaptation and its limitations. Only those grasses consistantly giving the best performances are released and recommended for use. Conscientious producers of these selected vegetatively propagated stolons have spent millions of man hours in labor to keep the true identity of each strain released.

It has been necessary to either prevent

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The first was 31 miles from the Kinzua course; the second 51 miles away; and the third 33 miles distant. The court held that the testimony was admissible, saying: "In our opinion the alleged comparable course sales were sufficiently similar and proximate in time to be useful in reflecting the fair market value of the condemned golf course. Further, we believe that insofar as proximity of location is concerned, a court should exercise its discretion in accordance with exigencies of a case, and if land is not of a character commonly bought and sold, should allow evidence of the sales of similar land located at some distance from the land taken."

The motion for a new trial was denied and the $97,000 award was allowed to stand without change. United States v. 84.4 Acres of Land, Etc., 224 F. Supp. 1017.)

Strains Lose Identity

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seedhead formation or remove all seedheads formed before they have had an opportunity to shed pollen and produce fertile viable seed. Our firm maintains small plot areas, almost in putting green condition, for a constant source of pure foundation material. Each year a small quantity is taken to plant an increase row to provide plant material to be used the following year for planting the production areas. The increase rows are given extremely close attention and extra care.

Relatively Inexpensive

An investment in a putting green at today's labor costs makes it unwise to take a chance of having less than the finest turf. The cost of course construction has increased tremendously in the last 40 years. Bentgrass stolons used in putting green construction in the 1920's frequently accounted for as much as fifty per cent of the total construction cost. At today's prices the cost of the finest stolons is relatively negligible — about five per cent of the total cost of the green. Properly constructed and maintained greens can be expected to last 30 years or longer. In addition to better playing conditions, quality turf of uniform texture

and color saves many dollars in maintenance costs during the life expectancy of a good green. The advantages of using stolons are many and important in providing the desired degree of satisfaction.

Grau's Answers

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"framework" or "skeleton" that hold the nitrogen in a soluble form ready to go into solution and to feed the plant. Without the framework you would have 100-0-0 which is elemental gaseous nitrogen, almost completely useless to your turf. Efficiency would be a fraction of one per cent. Cost would be astronomical. You would have great difficulty in applying it to your turf.

Now let's look at 38-0-0, the familiar insoluble ureaform that you are using. The N content is higher but it is still a long way from the 100-0-0 you speak of. This material has no filler. It, too, must have a skeleton to carry the N in a slow-release form just as your body must have a skeleton.

Unlike the simple inorganic soluble molecule of sulfate of ammonia, ureaform is a mixture of complex molecules of various sizes. All ureaform molecules are made up of hydrogen, carbon, oxygen and nitrogen. The carbon, hydrogen and oxygen are all a part of the framework. Carbon furnishes energy to microorganisms that release N from the molecule. Oxygen is essential to the life and health of the soil microflora. Hydrogen enters into base exchange to release other nutrient elements to the plants.

Thus, you see, every part of the ureaform molecule is useful. A simple molecule might be shown thus:

$$H_2C \begin{cases} NH{-}CO{-}NH_2 \\ NH{-}CO{-}NH_2 \end{cases}$$

From here they become increasingly complex. The case of the natural organic, 5.5-4-0, follows the same general pattern but is not so easily explained because it is a variable accumulated by-product of a mixture of materials that have been used before for other purposes. The nitrogen is carried in a framework of lignins, cellulose, waxes, inorganic salts, and organic colloids, all of which act more or less as a framework for the nitrogen. Many of the soluble materials have been carried away in the water processing.

Fillers sometimes are used to make up a mixed fertilizer to equal a ton. More generally these are called "conditioners" which help the physical nature of the blend. Single ingredients as we have discussed never contain fillers or conditioners. The nitrogen is carried in an essential molecular skeleton or framework.

Allen Co. Adds Distributor

Paul E. Allen Co., Palm Harbor, Fla., has added Illinois Lawn Equip. Co., Orland Park, Ill., to its list of distributors of True Organic fertilizer.