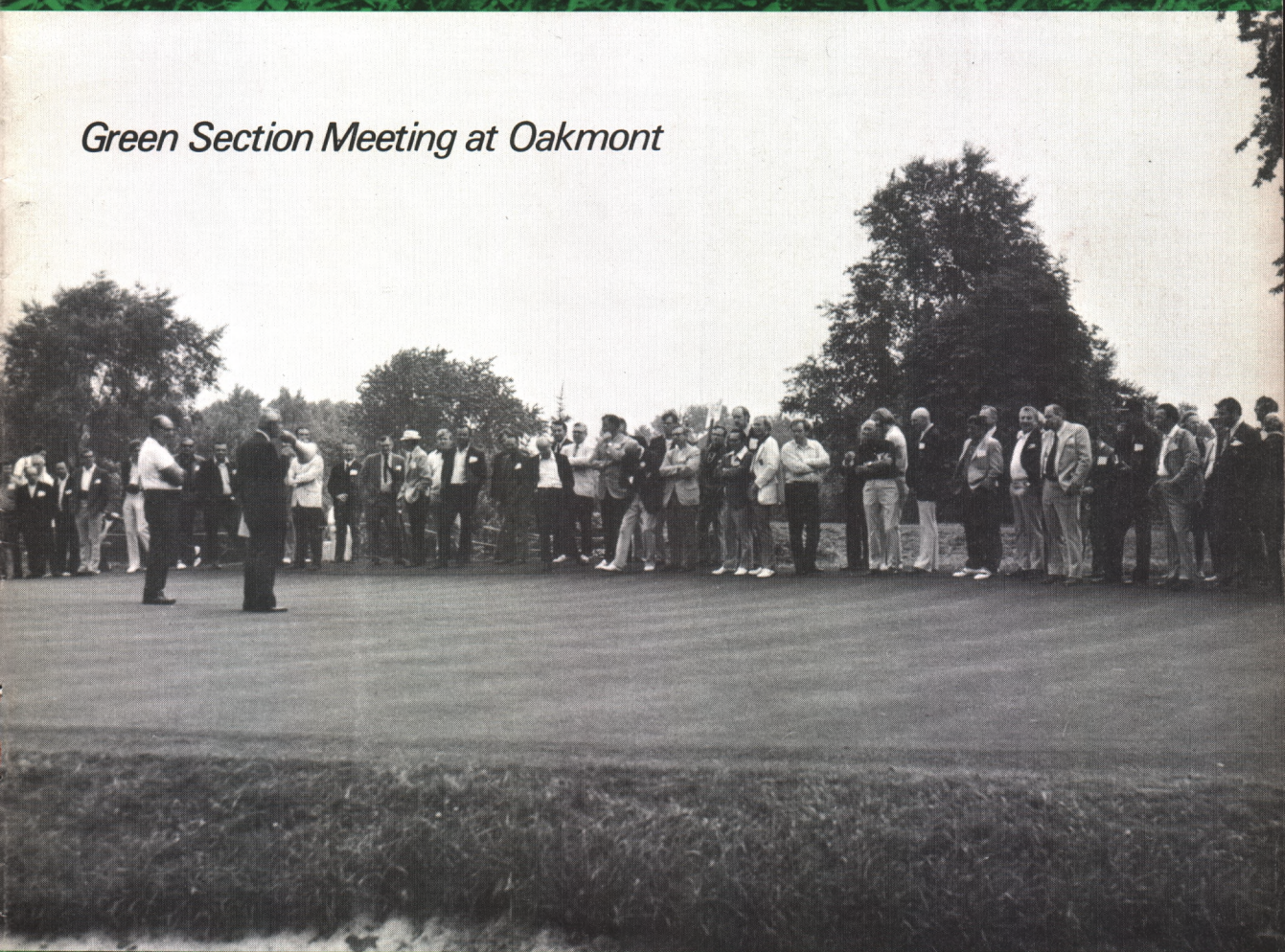
JULY 1973

# USGA GREEN SECTION RECORD

A Publication on Turf Management
by the United States Golf Association

*Green Section Meeting at Oakmont*



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VOL. 11, NO. 4 JULY 1973



Cover Photo-
The 17th Green at Oakmont Country Club with Superintendent Lou Scalzo addressing those attending the U.S. Open Turfgrass Program.

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# A Positive Approach to Poa Annua Management

by **STANLEY J. ZONTEK,** Eastern Agronomist, USGA Green Section

Over the last decade and a half numerous articles have been written on the various means of controlling *Poa annua.* The earliest talked about literally cutting *Poa annua* plants out of the putting greens. An article that appeared in *The Bulletin of the Green Section of the United States Golf Association* in July, 1922, stated that *Poa annua* was removed "with a knife, with a hole cutter, with a chisel or any other tool that may best suit according to the size of the patch infested."

How then did *Poa annua* develop into such a major turfgrass species from its meager beginnings as a common weed? The answer principally lies in cutting height and water. With the advent of improved irrigation systems and the desire for closer cut turf, *Poa annua* populations increased and took over the major playing areas of the golf course. In the beginning this takeover was encouraged because *Poa* provided a beautiful playing turf for several weeks of the year, usually in the spring and fall. The *Poa annua* was the one grass species that could thrive under the close cuts, excessive water and the compacted soil resulting from foot traffic on continually moist soils. The heavy soils used in early construction techniques only aided its development. Therefore, when the *Poa annua* turf thinned during the summer and membership pressure dictated a green grass cover at all times, extensive study was given to means of controlling *Poa annua* on large turf areas.

### Poa Annua Controls

From the 1930s through the 1950s, lead arsenate was widely used for *Poa annua* control. The mechanism by which the arsenical selectively suppressed the *Poa* was not completely understood at that time. Practical experience, however, had shown that it did in fact work, so lead arsenate was used for *Poa annua* control on greens. On fairways its use was usually impractical and was not extensive.

During the late 1950s the use of tri-calcium arsenate was being tested and studied. Its erratic early performance would result in further testing until finally it became widely publicized and used by some superintendents, especially in the mid-west and Eastern areas. During the 1960s, pre-emergent crabgrass killers (Balan, Dacthal, Pre-San, and Betasan) were shown to control *Poa annua* seed germination. They worked reasonably well and their use for *Poa* control has now become rather extensive.

In recent years the growth retardant chemicals (Endothal and Po-San) have come into use for *Poa annua* control. Principally, their mode of action is to limit seed head formation and thus reduce the potential for a re-growth from seed which is the primary means of *Poa annua's* dissemination.

Finally, a relatively new material called Kerb is finding popularity for *Poa annua* control on many bermudagrass fairways today. It has performed very well.

Whatever means of chemical control used, the goal of the user is the same—to erradicate *Poa annua* so its inherent weaknesses do not give the type of playing conditions that the membership finds objectionable. As with most chemicals, an understanding of how it behaves is essential to success.

### Poa Annua—The Weed

Exactly what is *Poa annua* and why is it considered a weed? Annual bluegrass *(Poa annua* L.) is a native plant of Europe. Over centuries of emigration it has distributed itself over all the world as a contaminant in seed mixtures. It is sometimes referred to as annual meadowgrass, winter grass or simply *Poa.* Its leaves are light to yellowish-green in color; the plant is low growing; it is capable of producing seed heads at various times during the growing season and at extremely low cutting heights. *Poa annua* has the unique ability to produce viable seeds capable of germinating only one to two days after pollination. It has been reported that a single *Poa* plant has produced 360 seeds in a four-month period.

Why then is *Poa annua* considered a weed? In most areas and under certain conditions,

*Comparative pictures of balls on putting greens. Excellent lie with a ball resting on Poa annua putting green turf.*

annual bluegrass is a weed. Simply defined, a weed is a plant that is out of place.

On putting greens in the South a heavy *Poa* population during the transition months tends to shade the desired bermudagrass species and slows its emergence from its winter dormancy. In some cases this results in a painfully late and slow transition resulting in poor playing conditions. In the North it is considered a weed because of its competition with bentgrasses and Kentucky bluegrasses for the dominant grass species on the main playing areas of the course (greens, collars, tees and fairways). When *Poa annua* is only a small percentage of the total grass population on the course there are few problems. However when the population becomes a majority, the possibility exists that the *Poa* could be thinned out or entirely lost during the summer stress period. This poor summer performance is the principal reason why *Poa annua* is considered a weed under most cool-season turfgrass cultures.

### Other Poa Annua Weaknesses

Exactly what are other annual bluegrass weaknesses? When subject to severe cold, drought or heat, *Poa annua* has a difficult time surviving. Unfortunately, two of these stress factors (heat and drought) often occur during the summer at the height of the golf season in the cool humid regions of the country. In these areas, some refer to it as "failure grass."

Because *Poa annua* is classified as either a summer or a winter annual, once the plant has died there is no re-growth from its roots or stems. The plant is dead. Any re-growth comes only when the seeds that were disseminated earlier in its life cycle can germinate and grow into mature plants. As stated before, the undependable nature of the grass is its greatest liability, but there are others.

*Poa Annua* is highly susceptible to almost all turfgrass diseases, both summer and winter. The extent of "winter kill" is also greater. In regard to putting qualities, there are times when very heavy seedhead formation causes bumpy, uneven putting surfaces, especially late in the day after mowing. Varietal differences within the species have a similar effect. Different volunteer varieties have different growth rates, growth habits, seeding habits, leaf widths, etc. These factors affect putting qualities.

Although *Poa annua* may not thatch as heavily as bentgrass on greens, it does develop grain and puffyness, especially at higher cutting heights. At lower cutting, it becomes more difficult to hold during stress periods. This grass does not take traffic as well as bentgrass, particularly during high temperatures. Recovery from any kind of stress is also restricted in hot weather. *Poa annua* requires very critical and

*Bentgrass turf; also a fine lie.*

careful management at all times. Even then success can swiftly slip away.

### Poa Annua Strengths

With all these real and apparent weaknesses, why is so much *Poa annua* grown in the cooler regions? Perhaps one reason is that when *Poa annua* is right, it provides one of the best playing surfaces for golf that we have! A good stand of *Poa* forms a fine textured turf of high shoot density, uniformity and quality under almost all cutting heights ranging from 1/8 inch to over one inch. Its leaves are usually shorter, broader, softer and lighter green than most varieties of Kentucky bluegrass. This also makes the grass easier to mow. Field data, along with research has shown that annual bluegrass has a root system comparable to Kentucky bluegrass in density and depth. It can survive and thrive under compacted soil conditions that deter the growth of both bentgrasses and Kentucky bluegrasses. It produces a good supply of viable seed under all cutting heights assuring self-perpetuation. It grows well in the sun or shade and is in fact one of the north's best shade grasses. It is quick to germinate and re-form a turf naturally when conditions are right. It affords an excellent lie for golf balls due to its upright growth habit and strong blade that keeps the ball from nestling down into the turf. It does not thatch up as much as bentgrasses. Except at the prime seeding time, *Poa annua* can make one of the finest playing surfaces that we have today . . . if it can be kept from dying. See figures 1-5 on the comparative lies resulting from the various turf species grown in the cool-season regions. As the pictures illustrate, *Poa annua* makes for excellent lies equal to or even better than the other grasses. Therein lies the incentive for most superintendents who have accepted the challenge to maintain it.

### Managing To Maintain Poa Annua

Superintendents and their golf clubs often prefer *Poa annua* turf. They find renovation programs too long, expensive, and painful to play during the year. Therefore, the question has been asked, "What management practices can we perform to help the annual bluegrass survive and thrive the year-around?" Following are some steps that we feel can be performed to help make this possible.

(1) **Watering.** Irrigate a lot, in fact every day. In the heat of the summer, syringe once or twice a day depending on the temperature and humidity. With higher temperatures and higher humidity, there is a likelihood of more kill. Also, higher wind-blown spots generally require more watering. In this all-important syringing operation an automatic irrigation system would be a tremendous if not an essential asset.

(2) **pH.** Soil reaction should be in a range

*Comparative pictures of golf balls resting on fairway turf. A close fairway lie on an improved strain of Kentucky bluegrass.*

of 6.5 to 7.0. Not less than 6.0 and not over 7.0.

(3) **Soil Cultivation.** Core (aerate) and thatch (vertical mow) in the spring and fall. This stimulates *Poa annua* seed germination and adds juvenile vigor to the turf.

(4) **Cutting Height.** The optimum cutting height for maximum rooting of *Poa annua* is ¾ to 1 inch. Above and below these heights the root systems become shortened, resulting in less water and nutrient uptake and thus more careful management.

(5) **Nutrients.** Fertilize with materials to keep the phosphorus and potassium values high. Abundant nitrogen but not excessive nitrogen is also required. Fertilize lightly to moderately in the spring and lightly in the summer and push the *Poa* in the early fall. However be certain not to overstimulate the *Poa,* as lush growth going into the winter could bring on possible winter injury.

(6) **Fungicides.** Because *Poa annua* is susceptible to almost all turf diseases, it is essential that a complete fungicide program be followed. Literally, this involves a spring, summer, fall and winter spray program to keep the annual bluegrass healthy when the various disease organisms are working. It is interesting to note that we have observed where systemic fungicides are used in the overall summer disease program, there appears to be less likelihood of the *Poa annua* thinning. Also, in areas where the annual bluegrass weevil (Hyperodes weevil) is active, a good insecticide program must also be followed.

These then are the most important factors in stimulating the growth of *Poa annua.* There are some secondary ones like good air and water drainage; careful use of pre-and post-emerge herbicides; chemical wilt control programs utilizing phenyl mercuric acetate (PMA) (where not restricted); and wetting agents. All of these management practices, therefore, are essential to the good growth and development of *Poa annua* as a year-around turfgrass species.

**Conclusion**

The purpose of this article is to reiterate what is already known. *Poa annua* may be a good turfgrass species exhibiting many of the qualities that can make for an excellent playing surface. If a good management program is followed, incorporating the points made in this article, then *Poa annua* has a good chance of being kept all season long. But there is another purpose; perhaps an even more important one. It is to show that no matter what species or combination of grass species grown on a golf course, it is the good management practices exercised by the superintendent that helps the grasses survive and provide the excellent playing


*A fine lie on fairway turf of Poa annua.*


*Ball resting on bentgrass fairway turf. Also a good playing lie.*

surface that the membership wants. There was an extremely foresighted statement made in an early 1922 turf article on *Poa annua:* "It is not a scientific problem, it is a practical problem. It is not one of indolence and superficial management—it is one of eternal vigilance, of common sense . . . of good management."

Therefore, good management should provide good turf which should result in better golf. Is this not the goal of all of us?

*Dormant bermudagrass on one-half of plot and colorant on the other half.*

# Colorants May be One Answer to Higher Seed Prices

**by JOHN VAN DAM,** Extension Service, University of California, County of Los Angeles

The natural beauty of a properly overseeded turfgrass area is beyond doubt a pleasing sight. This is especially so for the northern traveler seeking greener pastures. However, as with any worthy work of art, there is a price to be paid. To become established, the overseeded area has to undergo extensive preparation. The area has to be closely mowed and aerified and debris must be removed so that a minimum competitive but highly receptive seeding environment can be established. After that, numerous cultural tasks associated with the care and management of a productive turfgrass area must be maintained. This means that the overseeded area must be subsequently mowed, fertilized and groomed.

For the fortunate turfgrass manager whose dictates have been, "beauty at any price," and who is backed by a supporting budget, the concern for color is minimal. It narrows to the making of a proper selection from among the old and new grasses or a combination from them that would produce winter color and the desired aesthetics. However, not all producers of turfgrass areas are so fortunate. Many managers faced with a limited budget and the challenge of a warm-season grass specie that is fading into dormancy must seek alternatives.

At their request and in response to the growing need for information pertaining to the use of turfgrass colorants, a limited study on dormant Tifgreen bermudagrass was conducted. Due to the interests stimulated by the results of this initial test, the study was expanded. In the broadened study, the turfgrass colorants were applied to 20,000 square feet of dormant Tifgreen bermudagrass on the baseball outfield of the California State Polytechnic College, Pomona, Calif. Observations were thus possible under actual play. It also enabled the research to be conducted on a large randomized complete block design that was replicated four times. A 10-foot wide check area separated each replicated block and application of material to each test area treated was made with hand sprayers equipped with a size 8 flat T-jet nozzle. The pressure per square inch was constantly held at 30 pounds as indicated by the gauge on the sprayers.

The research plots were observed and evalu-

## TABLE 1. PER ACRE COSTS FOR COLORIZING DORMANT BERMUDAGRASS

**Date: February 1972**

No depreciation or interest computed; cost is nominal and equipment is assumed to exist for other purposes.

Based on: 2 Acres Golf Course Fairways
1 Acre City Park Facility

Labor: $3.75/hr.

| Operation | Annual hours | Costs Labor | Costs Equipment | Material | Combined Total Costs per acre | |
|---|---|---|---|---|---|---|
| **Preparation:** | | | | | | |
| Mowing[1] | 0.2 | $0.75 | $0.80 | | $1.55 | |
| Sweeper[2] | 0.7 | 2.65 | 1.05 | | 3.70 | |
| Helper | 1.0 | 3.75 | — | | 3.75 | |
| | | | | | | **$ 9.00** |
| **Cultural:** | | | | | | |
| Colorized[3] | 0.5 | 1.90 | 1.10 | Colorant 8 gal. @ $9/gal.=$72.00 | 75.00 | |
| Helper | 1.0 | 3.75 | — | | 3.75 | |
| | | | | | | **78.75** |
| | | | | | | **$87.75** |

[1]A light mowing with fairway mower to provide uniformity in appearance. Operational cost of $3.90/hr. based on 2,080 hours of annual use.

[2]Removal of clippings, litter and debris. Operational cost of $1.47/hr. based on a sweeper capacity of 0.68 acre per hr.

[3]100 gal. tank sprayer boom equipped with dripless size 8 flat T-jet nozzles. Covers 7,000 sq. ft. in 4½ min.

## TABLE 2. PER-ACRE COSTS FOR OVERSEEDING DORMANT BERMUDAGRASS (Cyndon dactylon)

**Date: February 1972**

No depreciation or interest computed as costs are nominal and equipment is assumed to exist for other purposes.

Based on: 200 acres on golf courses and 5 acres of city parks.

Labor: $3.75/hr.

| Operational tasks | Annual hours | Labor | Equipment | Material | Material Costs | Costs per acre Combined Total | |
|---|---|---|---|---|---|---|---|
| **Preparation[1]** | | | | | | | |
| Mow | 16.0 | $60.00 | $62.40 | | | $122.40 | |
| Sweep | 1.0 | 3.75 | 1.50 | | | 5.25 | |
| Spike | 2.0 | 7.50 | 2.60 | | | 10.10 | |
| | | | | | | | **$137.75** |
| **For establishment[2]** | | | | | | | |
| Seeding | 0.5 | 1.90 | 1.10 | Seed 400 lbs. @ 10c/lb. | $40.00 | 43.00 | |
| Irrigation | 1.0 | 3.75 | — | Water, 1 acre-inch | 7.25 | 11.00 | |
| | | | | | | | **54.00** |
| **Following establishment[3]** | | | | | | | |
| Irrigation | 8.0 | 30.00 | | Water, 8 acre-inches | 58.10 | 88.10 | |
| Fertilizer | 1.0 | 3.75 | | 850 lbs. 16-4-4 | 34.00 | 39.10 | |
| Mow | 1.6 | 6.00 | | | | 8.35 | |
| | | | | | | | **135.55** |
| | | | | | | | **$327.30** |

[1]Mowed with flail mower in several directions at an operational capacity of 4 hrs./acre @$3.90/hr.; spiked at a 2-hour-per-acre capacity @ $1.30/hr.

[2]Seeding capacity 3-acres-per-hour at combined tractor and equipment cost of $1.45/hr. For uniform seed distribution, half allotted seed spread in one direction and remainder in a direction crossing the first. The area lightly irrigated to prevent germinating seeds and seedling from drying out before becoming established.

[3]Based on weekly irrigation of 1-acre-inch-per-week for minimum of 8 weeks; mowed weekly during that period at capacity of 2½-acres-per-hour @ $3.90/hr. Costs increased substantially as overseeding period extended beyond the 8-week study period.

ated for their general appearance, hue, uniformity, longevity and intensity of color. The color intensities of each test plot were rated weekly. When all treatments began to fade during one week and subsequently increased the following week the study was terminated. No further readings were taken as the flush of color indicated a regrowth of the bermudagrass.

The weekly readings, accumulated from the treatments applied at the manufacturer's recommended rate (low rate) and at twice that rate (high rate), were statistically compared. The averages were then presented and are shown by the graphic summary chart shown below.

In general a truer color and greater uniformity were obtained at the high rate. Greater color longevity was also reported at this rate. No plant injury has been observed throughout the test at either the high or the low rate for any of the colorants tested. Remarks by players using the baseball outfield indicated satisfaction. No objectionable discoloration or staining was reported either of ground balls or of player uniforms. A simulated cleaning test devised to evaluate the materials as to the ease with which equipment used in their application was cleaned, ranked the materials in the following order:

Sprayer Equipment
Cleaning Test*

1. Vitalon Dark
2. Vitalon Light
3. Sta-Green
4. Greenstuff
5. Vichem Green
6. Greenzit
7. Stayz-Green
8. Winterlawn
9. Everbright

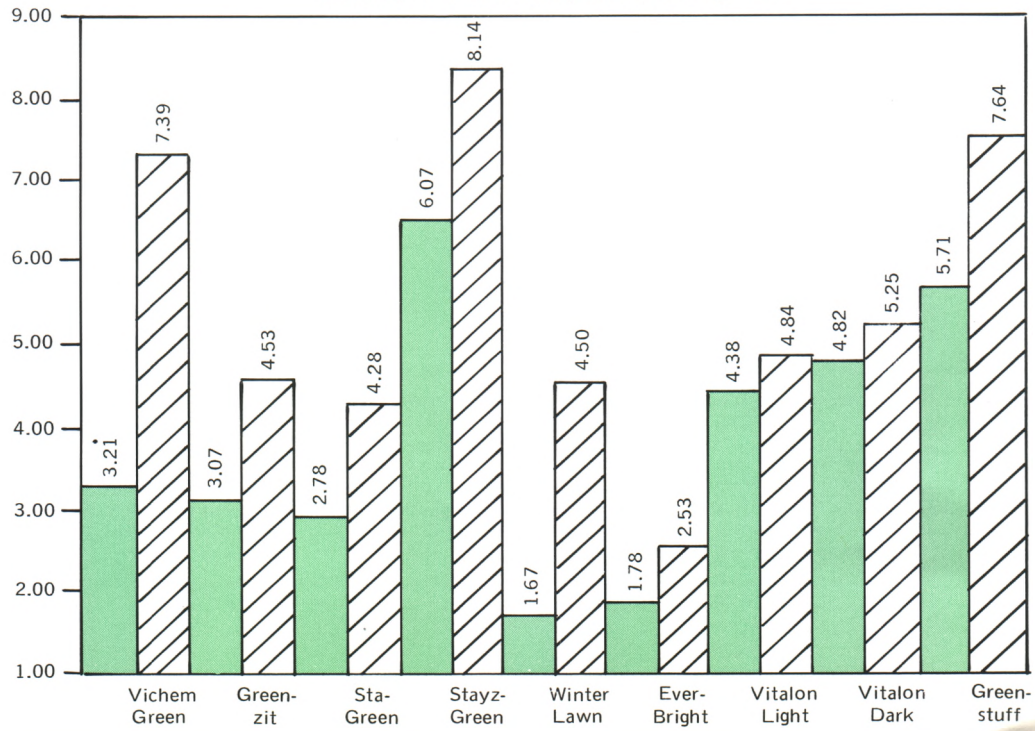
* Ranked from the easiest to most difficult.

A significant enlargement of the study made the following year was the accumulation of per acre cost data for the application of turfgrass colorants and that of similar areas which were overseeded. These per acre costs were made possible through the cooperation of the managers of golf and recreational park facilities. The procedures used were those normally conducted in carrying out colorant and/or overseeding tasks. Application and seeding details as well as the costs are disclosed by the tables that follow: It is cautioned that the costs presented in these tables are but guidelines and do not represent absolute costs for all facilities.

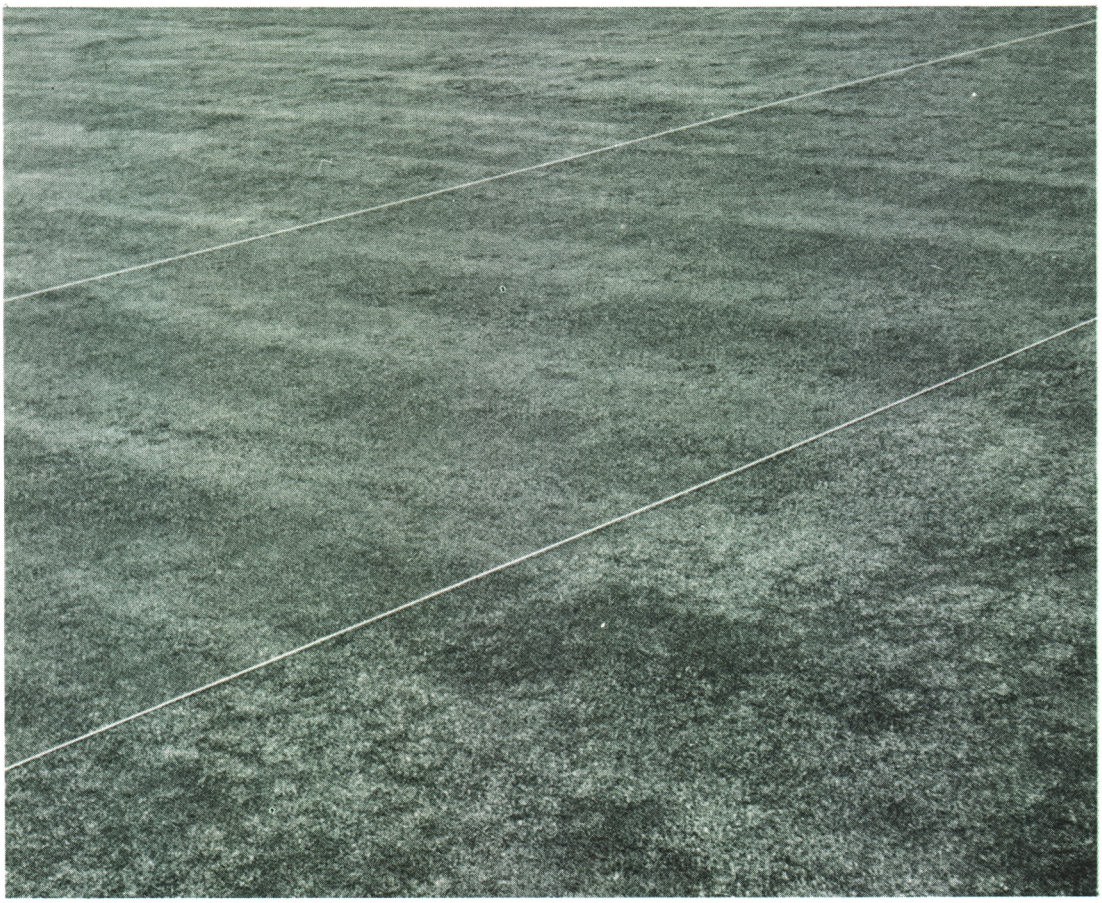
Colorant application results and the costs revealed by this study indicate that quality colorants properly applied provide monetary savings in establishing an instant green play area. Labor needs are minimal, maintenance is low and several tasks are completely eliminated in contrast to those in areas that are overseeded. However, well established and maintained areas of overseeded turfgrass have beyond doubt an appearance and color that is very appealing to many people. While costs to establish and maintain overseeded areas is greater than those for colorants, they can be budgeted.

Turfgrass managers are responsible to assure an efficient and economical operation. To fulfill that obligation, they must constantly review areas of major expense and the means and methods whereby overall costs can be reduced. This means the investigation of alternative methods. The road to follow remains the decision of the turfgrass manager as dictated by his own judgment, the demands of the users of the turfgrass area and those who impose and enforce budget limitations.

Summary of Color Intensity at Low and High Rates



# RX for Overseeding Bermuda Greens



*The first week in October is the time to overseed grass.*

**by PALMER MAPLES, JR.,** Superintendent, The Standard Club, Atlanta, Ga.

Golf in the South is played the year around, and for those golf courses that have bermudagrass on the greens, overseeding with cool season grasses is necessary because the grass becomes dormant in winter. The best putting surface can be obtained by using selected chemicals to control a number of pests. This article will explain some of the chemicals I have found helpful in my overseeding program, their methods and time of application and reasons for their particular use.

*Poa annua* has been one of the major problems when overseeding greens. It comes as seed in other grasses, it comes from other parts of the golf course, and even from within the green itself if no control measures are used. The problem is the seedheads and clumpy growth in the spring. Other than mechanical thinning and brushing, little could be done to control the *Poa annua* because available chemicals which would control *Poa annua* would also injure the desired overseeding grasses. Pre-emergence chemicals are now available, and if they are properly used, they can give control of *Poa* in overseeded greens. I have used Bensulide for the past six years. It has given excellent control of *Poa* in the greens through the winter and spring and it did not bother the desirable grasses.

My first use of Bensulide was on three greens at the Charlotte Country Club in 1966. These greens were very heavily infested with *Poa* and most difficult to putt in the spring. Smooth, dormant bermudagrass would have been a preferred putting surface and I felt there was

nothing to lose by using a chemical to control the *Poa annua*, even if the desired grasses were also affected. A period of 60 days before overseeding was selected as the time to apply the Bensulide. A liquid material having four pounds of actual chemical per gallon, at a rate of nine ounces of material per 1,000 square feet was applied. This material was put out through a spray Hawk using four to five gallons of water per 1,000 square feet. It was applied during the first week in August. The first week in October is selected as the time to overseed the grass because it gives the seedlings time to grow before the first killing frost.

The procedure is to aerify the greens the last week of July, topdress, fertilize, and then spray the Bensulide on the topdressing. This forms a seal of pre-emergence chemical that I do not disturb or break with any mechanical operations. The application of this chemical at these rates and over this time span has given me control of *Poa annua* in the overseeded greens and has not injured or killed any of the desired grasses or interfered with its germination.

Disease also must be controlled by chemicals, not only on overseeded greens but on all greens. A lot of new grass on overseeded greens is often lost to disease because the chemicals were not applied on the green. Applications must be made at the right time to do any good, especially during periods of high humidity.

In preparation for overseeding, I begin spraying the greens with a fungicide in August. An application of capatan at eight ounces per 1,000 square feet is made and an application of daconil, cyrene, or other general fungicide is made. These chemicals will control some of the disease organisms that may be in the bermudagrass but not visible or active at this time of year. Other applications are made in September to rid the green of all disease that could hurt the new seedlings or the bermudagrass as it is slowing growth before going dormant.

Pythium is just as killing and fast spreading on seedlings as on other grasses, and it is a real problem in overseeding. Some treated seeds have been tried but they don't show a vast improvement over treating the seed at time of planting. Pythium control chemicals are kept on hand for immediate use if the disease breaks out after initial germination. I apply these chemicals the first two weeks after planting as a preventive spray, and as needed thereafter. Having used some broad spectrum fungicides in August and September, attention is placed on observing the seedlings as they emerge in conjunction with weather observations. Fungicides must be used on a preventive schedule during the first six weeks after planting. Rain should not interfere with the spray schedule for it is better to spray and have some control than no control at all.

Fertilizer and a combination of chemicals are a great help in establishing overseeded greens. The third week in September, an application of a 1-2-3 ratio fertilizer is made at a rate

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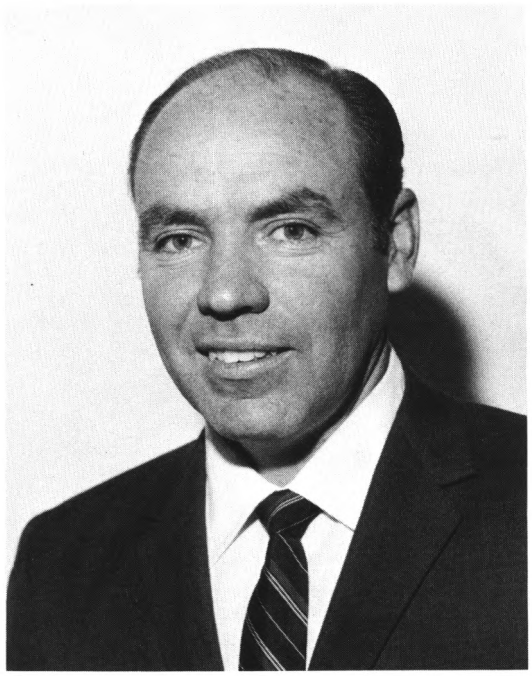


*Fertilizers and chemicals are a great help in establishing overseeded greens.*

to supply 1½ to 2 pounds of potash and 1 to 1½ pounds of phosphrous per 1,000 square feet. The small amount of nitrogen will be useful in helping the plants use these other chemicals. A light topdressing of sterilized soil is applied to the greens at this time to give the seed a bed where they can start their new roots.

The continued growth of bermudagrass can be a problem in establishing the overseeded grass. Usually by October the night temperature is cool and the days are shorter so the bermudagrass does not grow as fast. At times with continued warm weather, bermudagrass does grow and compete with the new seedlings. In looking for a method to slow the bermudagrass, I tried MH-30, (maleic Hydrazide) a growth retardant. After the second year, I discarded it due to the lack of desired results. While the chemical would slow the bermudagrass and show some control of Poa seed heads, it did not give repeated, even control. Even spraying the green in two directions did not improve the performance of this chemical.

My next try was PMA. This material used at 3 to 4 ounces per 1,000 square feet worked fine. This amount of PMA would burn the bermudagrass and retard its growth for about 10 days to two weeks, giving the seedlings time to germinate. Another advantage of PMA was in clearing up any disease organisms immediately before seeding. The application of PMA at 3-4 ounces is made on the Friday before the seed is planted the next Monday, or three days before planting.

All seeding is accomplished in one day during the first week of October. It is brushed and matted into the green, and watered that evening and night. This procedure helps wet the seed and get it settled into the grass before topdressing. If the overseeding is topdressed before watering, the topsoil will settle down into the grass and leave the seed floating on top of the grass and not in contact with the soil. When the dew dries the day after watering the seed, topdressing is used at a light rate over the seed, matted in and watering continued.

Three to five days after planting, a broad spectrum fungicide mixed with a pythium control fungicide is applied. Mowing starts in six to seven days at a height of 3/8 inch, and continues at this height for three weeks. This gives the plant time to grow its secondary roots and leaves, and establishes a healthy plant that will withstand the traffic, cold weather, and disease of the coming months.

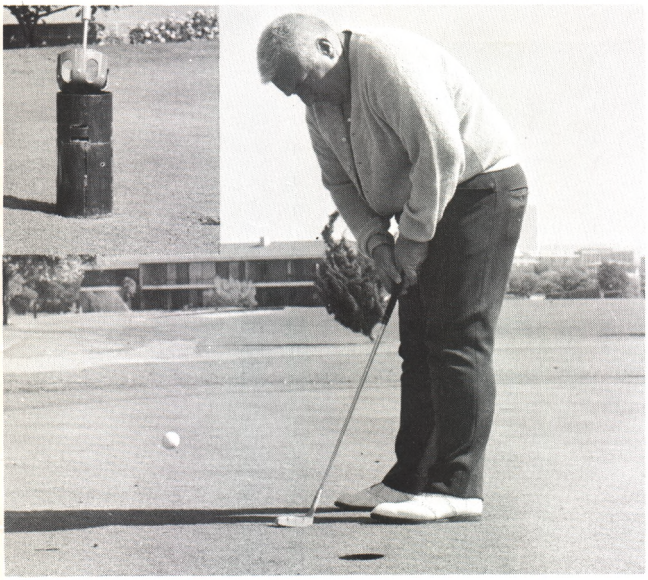
The use of chemicals is but a part of a planned program that I use in establishing my overseeded greens each fall—but a most important part. A quick review will show that (1)

*A beautiful green is the result of a planned program.*

applications of fungicides in August and September will help rid the green of diseases; (2) after seeding, fungicide applications will help protect the new grass; (3) application of a preemergence chemical 60 days prior to overseeding will control further *Poa annua*; (4) chemical fertilizers to help establish and support the growth of the grass applied before planting; and (5) the use of a growth retardant to slow the bermudagrass and allow the new seeds to germinate and grow. These procedures have worked for me at my golf course.

*The best putting surface can be obtained by using selected chemicals.*

# A TURF TIP FROM *GENE:*



Gene Stoddard, Superintendent at Irvine Coast Country Club, Irvine, Calif., has been working with a new device to save wear around the hole. It is an automatic ball ejector which enables the golfer to retrieve his holed putt without damage to the critical area surrounding the hole. When the flagstick is in place, no ejecting action can take place. The removal of the flagstick permits a ball that falls into the cup to trigger an electronic ejecting signal. After a slight delay, the ball is cast about 30 inches from the hole. Result: less foot traffic concentration around the hole and presumably better putting green turf.

# *A Success Story! The Green Section Educational Program at Oakmont*

Over 100 people from 14 states attended the first USGA Green Section Educational Program held last month at the time and site of the 1973 U.S. Open Championship. Oakmont Country Club, Oakmont, Pa., was the perfect host. Grounds Committee Chairman Fred Brand, Jr., Superintendent Lou Scalzo, and Harry Gray, Club Manager, took time from their busy schedules to conduct the group on an early morning tour of the course and described maintenance operations. The "fastest greens in the country" were seen and matched by equally outstanding turf on fairways, tees and roughs.

Following the tour, a full day of informative papers and discussions by the Green Section staff and audience contributed to a memorable event. Topics included the latest information on new fungicides, equipment, automatic irrigation, carts and paths, course grooming and maintenance of bunkers.

Elbert S. Jemison, Jr., Birmingham, Ala., USGA Green Section Committee Chairman, received many favorable comments from those in attendance and promised to look into the possibility of future U.S. Open programs of this sort dealing with championship turfgrass management.

*Testing the 17th green at Oakmont Country Club just before the 1973 U.S. Open Championship gets underway is Robert V. Mitchell, Superintendent of Portage Country Club, Akron, Ohio. Mitchell is also a member of the USGA Green Section Committee and Past President of the GCSAA.*

USGA GREEN SE
JULY, 1973



# TURF TWISTERS

## CHELATES

**Question:** We read about chelates, iron chelate for example. What is it and how is it different from iron sulfate? (New Hampshire)

**Answer:** In the simplest terms, chelating refers to the bridging of a metal ion, in this case iron, that protects its from being precipitated by carbonates, phosphates and other soil fertilizer components. When so protected, the ion remains mobile, allowing it to move freely in soil solutions for uptake by grass roots. This is most important on calcareous soils where the iron sulfate forms are quickly immobilized; chelated forms offer far better chance for the iron to make it into the plant through the soil solution. Chelates are more expensive than iron sulfate and, in turfgrass work, have shown mixed responses.

## CONTROL ORGANIC MATTER

**Question;** In one short sentence, how would you relieve an organic buildup in a bermudagrass green that has accumulated over the past 5 years? (Alabama)

**Answer:** During the most active growing period, aerate once per month, top-dress lightly using low content organic matter in soil mixture, vertical mow very lightly once per week, keep as good a putting surface as possible and apply hydrated lime at 2 pounds/1,000 square feet three or four times a year during the cooler months: all in one sentence.

## IN A FROG'S EYE

**Question:** What can I do to control *Fusarium roseum* (frog eye) that is attacking my bluegrass fairways? (Illinois)

**Answer:** *Fusarium roseum* requires a high temperature (around 65°-70° night temperature) to become really serious. The presence of nematodes adds to the degree of severity. The systemic fungicides Benlate (Tersan 1991) or Cleary's 3336 at six to eight ounces per 1,000 square feet have been effective in control. Water in thoroughly.