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FOR COMPLETE LINE OF PAR AIDE GREENS  
AND TEES EQUIPMENT—WRITE FOR CATALOG

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296 NORTH PASCAL STREET • ST. PAUL, MINNESOTA 55104

## Grau

*continued from page 20*

roots received national acclaim. Laboratory equipment enabled him to obtain photomicrographs of disease spores on grasses.

Holly growing absorbed part of his scientific time and a splendid holly orchard at the cemetery attests to both his dedication and his proficiency.

Truly the spirit of Gregor Mendel lived in Father Miller. We respect the devoutly religious priest who is drawn to the scientific side of life and pursues those teachings as assiduously as the clerical. We shall miss him—he stimulated our thinking and established for all of us goals and challenges.

*Q.—Our common bermudagrass fairways are becoming more and more compacted. When we have a hot, dry summer with no irriga-*

*tion we don't have much grass. Poa annua is dominant and bermuda is thin. Aeration equipment seems inadequate and unable to penetrate. Several approaches to our problem occur to us including: 1. heavier aerating equipment; 2. all-over cart paths; 3. wetting agents; 4. bermuda hybrids; 5. fairway irrigation; 6. more fertilizer, and 7. plow portions to renovate while keeping course in play.*

*Your suggestions will be appreciated.*

*(North Carolina)*

A.—Your problem leaves me at a bit of a disadvantage because I do not know all the details of your operations, soil tests, fertilizer usage and other. In the absence of these data I suggest these approaches to your problem.

1. Operate your aerating equipment when the soil is naturally receptive from rainfall. I would

not consider heavier machines.

2. Fertilize immediately after aerating to get as much material as possible into the rootzone. Consider using ureaform nitrogen for at least half your N requirements. It would seem that you need to use somewhat more N than you have been using in order to develop thicker turf.

3. Wetting agents—defer decision until other methods are tried.

4. Cart paths all over may help but no decision can be made from my position.

5. Improved bermudagrasses (hybrids) should help because, under a given set of conditions, they tend to form a tighter, denser turf that is more aggressive and more disease resistant.

6. Fairway irrigation will help, but this is something that requires study on the site with all factors taken into consideration.

*continued on page 24*

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## Grau

*continued from page 22*

7. Renovation by plowing, while trying to keep the course in play, seems rather impractical.

All in all it would seem that your course needs to be studied rather carefully by a turfgrass specialist who is thoroughly familiar with your conditions. Then it will be possible to set up a program that will produce the desired results. This I can not do from here.

*Q.—For several years we have had U-3 bermudagrass tees. They are excellent for about three months, but the members are disgusted with them from early spring until sometime in June. We are considering cool-season grasses but we can't decide whether we should go to bent or to bluegrass. What is your opinion?*

*(Maryland)*

*A.—To go the bent route you would, in effect, have another set of putting greens. You would use Pennecross and manage it in a similar fashion to your greens. With your labor situation I would advise against bent.*

The newer bluegrasses can tolerate close mowing much better than the old common Kentucky bluegrass. They are much more resistant to diseases and they respond better to fertilizer applications. I would recommend serious consideration of starting a sod nursery of a blend of the best of the new bluegrasses so that you can strip the bermuda this fall and replace with your own bluegrass sod.

Under daily management you would mow at one-half inch only the small teeing area to be used that day. The rest of the tee would be cut at 1 1/4 to 1 1/2 inches to favor the bluegrass. Occasional close mowing will do no harm as long as the grass can grow again to a proper height. □

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## Turfgrass research review

by Dr. James B. Beard

### Responses of bluegrasses and red fescues to nitrogen fertilization

**Evaluation of several Kentucky bluegrass and red fescue strains maintained as lawn turf under three levels of fertility.** C. R. Skogley and F. B. Ledebuer. 1968. *Agronomy Journal*. 60:47-49. (from the Department of Agronomy and Mechanized Agriculture, University of Rhode Island, Kingston, R.I. 02881).

The responses of eight Kentucky bluegrass varieties and six red fescues to various intervals (spring only, spring-fall, and spring-fall-summer) of nitrogen fertilization were investigated. All plots were maintained at 1.5 inches with irrigation applied as needed to prevent moisture stress. The effect of these treatments in terms of overall turfgrass quality was determined by visual ratings.

At least two fertilizer applications with one pound of nitrogen per 1,000 square feet per application were required to produce an acceptable Kentucky bluegrass turf under Rhode Island conditions. An adequate turfgrass response was obtained from Park, Delta and Pennstar Kentucky bluegrasses from two fertilizer applications per year, which supplied one pound of nitrogen per 1,000 square feet per application. In general, superior turfgrass

quality was produced from three nitrogen fertilizations per year in comparison to two applications, with Pennstar being particularly responsive.

No significant differentials in response between varieties were evident among the red fescue varieties included in the test. Jamestown produced the highest quality turf at all three intervals of nitrogen fertilization with Pennlawn ranking second. Chewings and Illahee were intermediate while Rainier and Common creeping red fescue ranked poorest.

### Chemical control of annual bluegrass as related to vertical mowing.

V. B. Youngner and F. J. Nudge. 1968. *California Turfgrass Culture*. 18:17-18. (from the Department of Agronomy, University of California, Riverside, Calif.).

The purpose of this experiment was to determine the effectiveness of combining certain preemergence herbicide applications for control of annual bluegrass with vertical mowing of putting greens. This experiment was conducted at the Victoria CC in Riverside, Calif., on an old Seaside bentgrass nursery. Due to the minimum use of irrigation on this area most of the annual bluegrass plants had been eliminated, but the soil was infested with annual bluegrass seed.

continued on page 28



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## Beard

*continued from page 26*

Bensulide was applied at the rate of nine fluid ounces of 45.2 per cent active material in five gallons of water per 1,000 square feet. The bensulide was applied immediately after vertical mowing and watered into the turf for 10 minutes.

A moderate amount of thatch

was present in the bentgrass putting green. The vertical mowing was performed so as to cut through the thatch but not into the soil. The grass material removed in the vertical mowing operation was swept from the area before the bensulide was applied.

Vertical mowing and bensulide were applied at three dates, September 26, December 27 and March 29. Combinations of one,

two and three bensulide applications plus vertical mowings were compared along with each practice utilized alone. Each treatment was replicated four times.

The amount of annual bluegrass infesting the various treatments was evaluated the following spring. The highest annual bluegrass populations were observed in plots which were vertically mowed in the fall but given no herbicide treatment. The annual bluegrass content of these plots was evaluated the following which were not vertically mowed. The annual bluegrass population was significantly reduced if bensulide was applied following the fall vertical mowing. The amount of annual bluegrass contained in plots treated with bensulide was always less if the plots had not been vertically mowed. The annual bluegrass in plots receiving fall vertical renovation plus bensulide was higher the following spring than in the untreated plots. The authors suggest that a similar type response might be expected from fall aeration.

*Comments:* This study is one in a series conducted by Dr. Youngner regarding the effect of fall cultivation on the severity of annual bluegrass invasion. Dr. Youngner has shown that the germination of annual bluegrass seed is higher during the cool, early fall period than at any other time of the year. Thus, any cultivation practice such as vertical mowing, which tends to open up the turf and reduce the intensity of competition from the bentgrass, will afford the opportunity for annual bluegrass seed germination and establishment in these voids. The research reported in this paper shows that the use of an effective annual bluegrass herbicide will reduce the severity of annual bluegrass invasion after a fall vertical renovation. In considering the timing of vertical renovation practices, the affect on annual bluegrass invasion should be seriously considered. □

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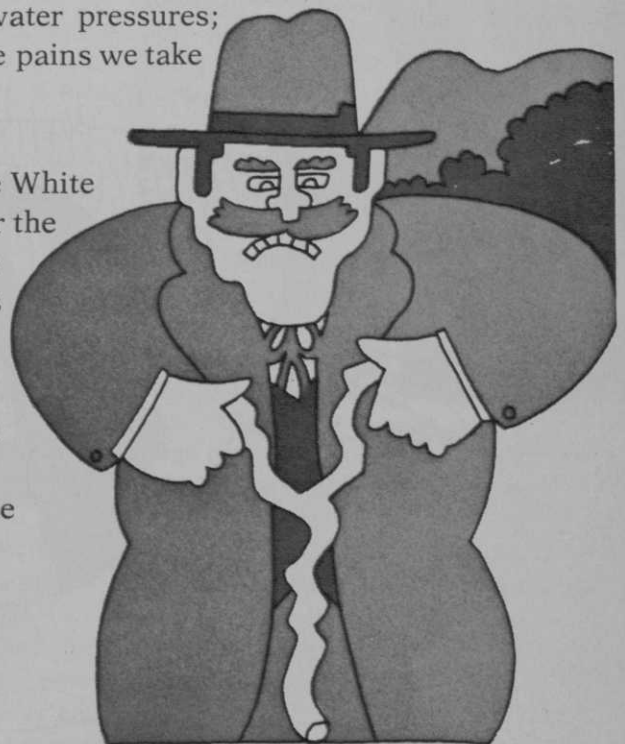
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Planning a new course?

# CUT OUT THE GUESSWORK

By JERRY CLAUSSEN

National Golf Foundation Club Planning Consultant, Lakewood, Colorado

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