

## Fairway Renovation with "Roundup"

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A very brief review of our preliminary varietal testing and plot work is in order. Dr. Bill Meyer, of Warren's Turfgrass Nursery, established trial plots on our 16th fairway. The plots consisted of 9 varieties established with 8 inch plugs on 3 foot centers. The following diagram presents the plantings and the results as recorded in August of 1980 for the trials established in the fall of 1973.

|                          |                       |                     |
|--------------------------|-----------------------|---------------------|
| H-7<br>36 x 36           | Fylking<br>NP         | I-2<br>FR<br>NP     |
| A-20-5<br>NP             | A-20-6<br>21 x 22     | I-16<br>30 x 24     |
| Baron<br>NP              | I-13<br>15 x 28       | A-20-14<br>NP<br>FR |
| Baron<br>NP              | I-13<br>18 x 26       | A-20-6<br>29 x 24   |
| A-20-14<br>8 x 8<br>FR   | Fylking<br>NP         | A-20-5<br>24 x 26   |
| I-2<br>FR                | H-7<br>29 x 38        | I-16<br>24 x 16     |
| I-13<br>28 x 30          | I-16<br>FR<br>24 x 27 | Fylking<br>NP       |
| A-20-16<br>8 x 10<br>FR  | I-2<br>NP             | Baron<br>NP         |
| A-20-14<br>12 x 15<br>FR | A-20-5<br>NP          | H-7<br>26 x 26      |

Figures indicate inches of solid spread

NP indicates none of original cultivar present

FR indicates presence of Fusarium Roseum in plot

Average coverage in square inches of 3 replications

H-7 932 sq. in.  
Fylking 0 sq. in.  
I-2 0 sq. in.  
A-20-5 128 sq. in.  
A-20-6 412 sq. in.  
I-16 502 sq. in.  
Baron 0 sq. in.  
I-13 576 sq. in.  
A-20-14 146 sq. in.

From the above summation it is readily apparent that only the Warren's H-7 and I-13 cultivars persisted under the management practices of the Danville Country Club. Encouraged by the results of the initial tests, it was decided to set up a pilot program for the possible renovation of the Danville Country Club fairways. Sites were selected on the 1, 6, 14, and 16 fairways. The areas represented varying degrees of quality of turf.

At the selected sites, a swath of 16 feet running the width of the fairways was sprayed with Roundup at the rate of 2 quarts per acre. After one week, four strips four feet in width were planted to the selected grasses using the Rogers seeder. The following diagram gives the plot layouts seeded October 8, 1978.

### Width of Fairway

4 ft. Warren's cultivar H-7

4 ft. Warren's cultivar I-13

4 ft. Blend equal parts Adelpia,  
Baron, Glade, Nugget, Pennstar,  
and Sydsport bluegrasses

4 ft. Equal parts of Derby, Manhattan,  
and Pennfine ryegrasses

We had what appeared to be excellent germination in all plots. In evaluating the various plots during the summer of 1979, the following observations were made:

Warren's H-7 was very mediocre in its performance.

Warren's I-13 was outstanding from mid summer to fall.

Mixture of "Elite Bluegrasses" were nonexistent in plots.

Ryegrass mixture looked good in spring and fall, but had a serious invasion of Pythium in August.

The decision was made to spray the entire front nine with Roundup at two quarts per acre, following with an overseeding of equal parts of H-7 and I-13. Fairways were seeded immediately after Labor day. Seeding rates were 10 pounds per acre using the Rogers seeder going at 45 degree angle on second seeding giving a total of 20 pounds per acre of the mixture.

Germination was excellent in the fall of 1979. All fairways were mowed 5 times prior to winter dormancy. Tupersan was applied to all renovated fairways at the recommended rate for crabgrass control giving up the option of spring overseeding. Based on our previous years experience, it was thought that the new seedlings would be very competitive with Poa annua. This conclusion was very erroneous, as Poa did germinate and was very competitive comprising approximately 50 percent of the fairway population.

July of 1980 was the 6th hottest month on record. This accompanied by high relative humidity caused the loss of Poa annua in the newly seeded fairways. We made no attempt to hold the Poa annua. Although we were less than satisfied with our 1979 renovation results, it was decided to proceed with the renovation of the back nine in 1980.

In reviewing the procedures used on the test plots, it was noted that the seeding dates were approximately 4 weeks later than the seeding dates of the front nine. Consequently we applied the Roundup on September 26-80 and started reseeding on September 29-80. Some areas had excellent germination, while in other areas germination was not apparent. In March of 1981, soil conditions were excellent for seeding. The back nine was seeded with an additional 27 pounds per acre of the H-7 and I-13 mixture. Spring germination was excellent from both fall and March seeding. In addition, the seed used on the back 9 was coated with a starter fertilizer, Nutri-Cote by CelPril Industries of Manteca, California. The overseeding of the back nine was far superior to that obtained on the front nine. This could be attributed to one or a combination of three factors. They are:

1. Later seeding date after Poa had germinated and been eliminated with the Roundup.
2. Heavier seeding rate going from 40 pounds per acre to 47 pounds per acre.
3. The Nutri-Cote process may have markedly affected seedling survival.

1981 proved to be a banner year for our renovated fairways. Playability and appearance were excellent. Now that we have a fairway turf of improved bluegrasses with some Poa annua present, we do plan on managing for the bluegrass survival. Our basic program will be as follows:

Nitrogen fertilization: 3 to 4 lbs N. per 1000 sq ft per year

Potash fertilization: 3 to 4 lbs K. per 1000 sq ft per year

Height of cut: 7/8 inch in spring and fall, 1 1/8" July and August

Watering practices: Water only when the bluegrass shows stress

Poa Annua and Crabgrass control: 80 lbs Balan per acre in April, 100 lbs per acre Balan in August

Poa Annua suppression: Endothal at 1 quart per acre, three applications at two week intervals starting approximately May 1 for a total of 3 quarts per acre.

Fungicide application: None planned

Insect control: Dursban for sod webworm and Oftanol for grub control

Aerification: In fall only after Poa annua has ceased to germinate

Overseeding: To be accomplished immediately after aerification, then on a very limited basis

It is my belief that this is a sound and attainable program that will provide good bluegrass fairways. We shall continue to seek more suitable poa annua controls and improved cultivars of Kentucky bluegrasses to be used in overseeding.