

EVALUATION OF PERENNIAL RYEGRASS CULTIVARS
AND USING SULFUR TO ACIDIFY SOILS

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Perennial ryegrasses

With the many new cultivars now available to the turfgrass manager, there is renewed interest in the use of perennial ryegrasses in turf management. Perennial ryegrasses establish rapidly, competing with weeds and other grass species in the seedling stage, and they are highly wear tolerant. For this reason they are utilized in overseeding heavy traffic areas subject to wear, such as athletic fields, public gardens and grounds. While they are being used effectively in many areas, we have only limited data on the adaptation of the wide range of new cultivars to Michigan conditions, their optimum management requirements and susceptibility to disease. These new cultivars have improved color and mowing qualities and all those in our tests survived the winter of 1981-82 with a good snow cover for protection. There was some winter injury in low spots on perennial ryegrass plots in other studies. Proper drainage and management, particularly nitrogen fertility, will be important for winter survival of some of these cultivars. Data for 1982 observations are given in Table 1. There are also several blocks of perennial ryegrasses where we have initiated nitrogen fertility studies.

Two days previous to this Field Day, one-half of each plot was mowed with a dull mower. Note the differences in mowing quality among the cultivars.

Acidifying Soil with Sulfur

Although Michigan is considered in the acid soil region of the United States, many of our soils have pH values above 7.0. When the soil pH is above 7.6 or so, the availability of some micronutrients becomes a concern, particularly iron and possibly manganese and zinc. Deficiencies of these nutrients on turf are seldom observed on turf in Michigan. Still a number of turf managers have applied elemental sulfur to lower soil pH. While elemental sulfur can be used effectively to acidify soil, care must be taken to apply the appropriate form and rate which effect a slow pH change. Unfortunately, injury to turf may occur from sulfur applications. We have observed injury on plots where as low as 10 pounds of flowers of sulfur (powder) per 1000 square feet was applied to Kentucky bluegrass on sand. Where ground sulfur (many larger particles which give a slower rate of pH change) was applied, no injury occurred at rates as high as 20 pounds of sulfur per 1000 square feet.

On these plots the powder form was applied at 25 and 50 pounds sulfur per 1000 square feet and tilled to a 3 inch depth in August, 1981. Some wilting and a little thinning of Kentucky bluegrass and red fescue occurred in June, 1982 on one replication of the higher treatment. The perennial ryegrass did not show any injury. Soil pH values at this time are 6.8 on the untreated plots; 6.2 on the plots receiving 25 pounds of sulfur per 1000 square feet and 5.8 on those receiving 50 pounds.

Currently, we do not recommend sulfur applications on turf unless there is a proven need to reduce soil pH because of micronutrient deficiency that cannot be corrected by application of the specific nutrient. If one wishes to use sulfur for changing pH on established turf, the safest means is to use the ground sulfur which has a range of particle sizes from fine to coarse. The coarse particles will cause a slower pH change which will reduce the potential for injury. This change will occur slowly (up to 3 years) from a given application. One will need patience and should retest the soil annually when using sulfur to acidify soils.

Table 1. 1980 PERENNIAL RYEGRASS CULTIVAR EVALUATION
EAST LANSING (H25)

RATING AND STATISTICAL TEST (DMRT 5%)

Cultivar	5/3/82	7/1/82
1) ACCLAIM	6.67 AE	7.00 AB
2) ARNO	7.00 AE	6.67 AC
3) BELLATRIX	5.33 BE	7.33 A
4) BELLE	8.00 AB	6.00 AE
5) BLAZER	6.00 AE	6.33 AD
6) CBS	5.67 AE	5.67 AE
7) CITATION	6.33 AE	5.00 BE
8) CLIPPER	8.33 A	4.00 E
9) COMPAS	5.67 AE	6.00 AE
10) CROWN	7.67 AC	6.67 AC
11) DASHER	6.33 AE	4.67 CE
12) DELRAY	6.00 AE	4.33 DE
13) DERBY	6.33 AE	6.00 AE
14) DIPLOMAT	7.33 AD	5.33 AE
15) ELKA	4.67 DF	6.33 AD
16) ENSPORTA	4.33 EF	7.33 A
17) FIESTA	6.67 AE	6.00 AE
18) GOALIE	6.00 AE	6.33 AD
19) HUNTER	6.00 AE	6.00 AE
20) IDOLE	2.67 F	7.33 A
21) JACKPOT	6.67 AE	7.00 AB
22) LORETTA	5.00 CF	6.33 AD
23) MANHATTAN	5.00 CF	6.00 AE
24) NK 200	5.33 BE	6.00 AE
25) NORLEA	6.67 AE	4.33 DE
26) OMEGA	7.33 AD	5.67 AE
27) PENNANT	6.00 AE	6.00 AE
28) PENNFINE	6.67 AE	7.00 AB
29) PLAYER	6.00 AE	6.00 AE
30) PREMIER	8.00 AB	5.00 BE
31) PRINCESS	5.00 CF	5.33 AE
32) PRONTO	6.67 AE	6.67 AC
33) RANGER	7.00 AE	6.67 AC
34) REGAL	5.33 BE	5.33 AE
35) RUNNER	6.00 AE	4.67 CE
36) TRIMMER	6.00 AE	5.33 AE
37) VENLONA	6.67 AE	7.33 A
38) YORKTOWN II	7.00 AE	6.67 AC