## STOP 1

K. T. Payne, J. B. Beard, and J. M. Vargas

### Perennial Ryegrass Cultivar Evaluation and Fine Leafed Fescue Breeding Program

The perennial ryegrass cultivar evaluation plots were established September 17, 1968. The plot size is 5 x 7 feet with three replications. The area is maintained at a cutting height of 1.2 inches and is mowed twice per week with clippings returned. Irrigation is applied as needed to prevent wilt. Sub-plot nitrogen levels of 3 and 6 lbs of nitrogen per 1000 square feet per year are maintained over the plots. No pesticides have been applied to the area.

In perennial ryegrass cultivar tests (Table 1) Manhattan has shown good winter hardiness, fine texture, dark green color and good mowing quality. Pennfine has been established in two seasons, but has failed to survive the winter. Norlea has shown the greatest winter hardiness but has poor mowing quality and relatively poor appearance.

The traditional problem with most perennial ryegrasses for turfgrass use has been the excessive vertical shoot growth rate that results in the species being too aggressive to remain compatible in a turfgrass stand with Kentucky bluegrass. In addition, perennial ryegrass has lacked low temperature hardiness for winter survival under Michigan conditions. The former characteristics have been minimized with the development of the more diminutive, low growing cultivars which have a slower vertical shoot growth rate and improved compatibility with Kentucky bluegrass. The combination of a diminutive perennial ryegrass cultivar with Kentucky bluegrass does offer a new alternative for seed mixtures to be utilized on sports turfs.

A winterhardy turf-type meadow fescue has been developed at M.S.U. This selection has relatively fine texture, blends well with improved Kentucky bluegrass cultivars in mixtures, and has excellent winter survival. Plots of this strain may be seen at Stop 3.

A leaf spot tolerant cultivar of fine leaf fescue with creeping habit is the goal of the fescue breeding program. A screening-intercrossing-screening program is in the fifth cycle and a small number of plants have survived a severe inoculation and will be again intercrossed. Clones of the advanced selections can be viewed.

## STOP 2

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### Kentucky Bluegrass and Fine Leafed Fescue Cultivar Evaluations

Kentucky bluegrass is best adapted to unshaded sites and moist, well-drained soils having a pH near neutral and a medium to high intensity of culture. Sixty-six Kentucky bluegrass cultivars were planted September 13, 1968, in 4 x 6 foot plots with three replications. The experimental area is mowed twice a week at 1.2 inches with clippings returned. The area is irrigated as needed to prevent wilt. Sub-plot nitrogen treatments are applied across the plots at 3 and 6 lbs of nitrogen per 1000 square feet per growing season.

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Table 2. Kentucky Bluegrass Cultivar Evaluations II
Michigan State University
East Lansing
1968-1973
Area G-4

| Cultivar | Seedling vigor (ht. inches) 10/21/68 | Seedling appearance[1] Fall 1968 (6)[2] | Percent cover 4/24/69 | Spring color[1] 1969 (3) | Spring color[1] 1972 (3) | Spring color[1] Ave. (6) | Leafspot rating 1969 (3)[3] | Leafspot rating 1971 (3)[3] | Leafspot rating 1972 (3)[4] | Snowmold % infected 4/8/73 | Visual appearance rating[1] 1969 (21) | 1970 (24) | 1971 (15) | 1972 (16) | 1973 (3) | Weighted Average (79) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NJE P-69 (NRT) (Adelphi) | 1.3 | 4.3 | 88 | 1.5 | 3.3 | 2.4 | 1.0 | 1.0 | 2.7 | 5 | 1.8 | 2.4 | 1.9 | 2.0 | 3.3 | 2.1 |
| Baron | 1.0 | 3.4 | 98 | 1.7 | 3.0 | 2.4 | 1.7 | 1.3 | 4.0 | 67 | 2.1 | 2.3 | 1.9 | 2.3 | 6.0 | 2.2 |
| NJE P-35 (NRT) | - | - | 63 | 1.0 | 2.3 | 1.7 | 1.7 | 1.3 | 4.7 | 13 | 2.2 | 2.4 | 2.0 | 1.7 | 3.3 | 2.2 |
| NJE P-5 (NRT) | - | - | 60 | 1.4 | 2.7 | 2.1 | 1.0 | 1.0 | 1.7 | 10 | 1.8 | 2.7 | 2.1 | 2.5 | 2.7 | 2.2 |
| NJE P-27 (Galaxy) | 0.8 | 5.0 | 83 | 1.4 | 1.7 | 1.6 | 1.7 | 1.0 | 2.7 | 5 | 2.0 | 2.6 | 1.7 | 2.2 | 2.7 | 2.2 |
| WK 412 (Weibull's) | 1.3 | 3.8 | 93 | 2.4 | 4.3 | 3.4 | 1.7 | 1.0 | 1.0 | 5 | 2.3 | 2.9 | 2.5 | 2.0 | 1.0 | 2.5 |
| Golf | 1.0 | 3.5 | 97 | 2.7 | 2.7 | 2.7 | 2.3 | 2.0 | 5.3 | 58 | 2.0 | 2.8 | 2.9 | 2.0 | 5.3 | 2.6 |
| A-20 (Warren) | - | - | - | - | 3.7 | 3.7 | - | 1.3 | 2.0 | 10 | - | 2.9 | 2.0 | 1.5 | 2.0 | 2.6 |
| K-103 (PSU) | 1.5 | 2.7 | 100 | 2.7 | 2.0 | 2.4 | 2.0 | 1.3 | 4.0 | 5 | 2.6 | 2.8 | 2.2 | 3.3 | 3.3 | 2.6 |
| NG-129 | 1.2 | 3.7 | 100 | 2.0 | 3.3 | 2.7 | 1.7 | 1.0 | 3.0 | 43 | 2.1 | 2.9 | 2.3 | 1.8 | 7.3 | 2.7 |
| NJE P-115 (NRT) | 1.2 | 4.7 | 83 | 2.7 | 2.7 | 2.7 | 2.7 | 1.0 | 4.0 | 7 | 2.5 | 3.0 | 2.1 | 2.5 | 5.0 | 2.7 |
| K-106 (PSU) | 0.8 | 4.2 | 97 | 2.9 | 4.3 | 3.6 | 2.0 | 1.7 | 5.3 | 92 | 2.6 | 3.0 | 2.6 | 2.3 | 4.3 | 2.9 |
| NG-101 | 1.0 | 4.0 | 98 | 2.2 | 8.0 | 5.1 | 1.7 | 2.7 | 8.0 | 100 | 1.9 | 3.3 | 3.6 | 3.1 | 7.0 | 3.1 |
| Spaths | - | - | 92 | 2.7 | 7.0 | 4.9 | 2.7 | 3.0 | 6.7 | 97 | 2.3 | 3.6 | 3.9 | 5.3 | 8.7 | 3.4 |
| A-10 (Warren's) | - | - | - | - | 3.7 | 3.7 | - | 3.0 | 8.3 | 87 | - | 3.2 | 3.1 | 3.6 | 6.3 | 3.4 |
| Monopoly (59) | - | - | 87 | 2.5 | 2.7 | 2.6 | 1.7 | 1.3 | 3.7 | 8 | 2.9 | 3.4 | 3.1 | 3.2 | 5.0 | 3.3 |
| Sydsport | - | - | 85 | 2.7 | - | 2.7 | 2.0 | - | - | - | 2.3 | 2.9 | 5.4 | - | - | 3.3 |
| K-109 (PSU) | 1.2 | 2.5 | 98 | 4.0 | 5.3 | 4.7 | 3.3 | 3.3 | 9.0 | 93 | 3.1 | 4.3 | 2.9 | 4.8 | 7.7 | 3.7 |
| Silverblu | 1.0 | 4.7 | 93 | 2.2 | 6.7 | 4.5 | 2.3 | 3.7 | 7.3 | 73 | 1.9 | 4.5 | 4.5 | 2.3 | 6.7 | 3.7 |
| Captan | 1.3 | 3.2 | 93 | 2.8 | 3.7 | 3.3 | 3.0 | 3.3 | 7.0 | 83 | 3.2 | 3.8 | 4.1 | 4.5 | 7.3 | 3.8 |
| Delft | 0.8 | 4.7 | 90 | 3.4 | 3.7 | 3.6 | 3.0 | 1.7 | 6.7 | 57 | 2.8 | 4.2 | 4.1 | 4.8 | 7.0 | 3.8 |
| 76 G22-986 (UK) | 1.3 | 3.0 | 100 | 3.4 | 4.0 | 3.7 | 3.3 | 4.0 | 8.7 | 88 | 3.0 | 4.7 | 3.5 | 4.3 | 8.0 | 4.0 |
| Bar 643 | 1.8 | 3.3 | 97 | 3.3 | 7.3 | 5.3 | 2.7 | 3.0 | 7.7 | 85 | 2.6 | 4.6 | 5.4 | 5.2 | 7.3 | 4.2 |
| Atlas | 1.7 | 3.2 | 98 | 3.5 | 4.7 | 4.1 | 3.0 | 3.3 | 7.0 | 88 | 3.6 | 4.6 | 4.4 | 4.8 | 6.0 | 4.3 |
| Hunsballe Soma | 1.2 | 2.2 | 97 | 4.0 | 5.0 | 4.5 | 3.3 | 4.0 | 9.0 | 85 | 3.2 | 5.5 | 4.3 | 5.5 | 7.0 | 4.5 |
| 66 G22-982 (UK) | 1.7 | 2.0 | 100 | 4.5 | 6.3 | 5.4 | 4.3 | 4.0 | 9.0 | 93 | 3.2 | 5.2 | 5.0 | 5.5 | 7.0 | 4.6 |
| Troy | 1.8 | 3.5 | 97 | 3.7 | 5.3 | 4.5 | 4.3 | 4.0 | 8.3 | 80 | 4.1 | 5.3 | 4.4 | 4.5 | 6.0 | 4.7 |
| Skandia II | 2.0 | 2.1 | 100 | 4.7 | 5.3 | 5.0 | 4.7 | 3.7 | 7.0 | 87 | 3.5 | 6.1 | 4.8 | 5.3 | 4.7 | 4.9 |
| Nike | 1.8 | 2.9 | 100 | 4.0 | - | 4.0 | 4.3 | - | - | - | 3.7 | 6.0 | 5.7 | - | - | 5.1 |
| Arboretum | 1.3 | 3.3 | 93 | 4.0 | - | 4.0 | 4.6 | - | - | - | 3.7 | 5.7 | 6.4 | - | - | 5.2 |
| Fusa | 0.8 | 4.9 | 95 | 3.5 | - | 3.5 | 3.0 | - | - | - | 3.3 | 6.0 | 7.3 | - | - | 5.4 |
| SK-46 | 1.5 | 3.8 | 93 | 4.7 | - | 4.7 | 4.7 | - | - | - | 3.7 | 6.0 | 7.3 | - | - | 5.5 |

[1] [2] 1 = best, 9 = poorest
( ) = no. of individual readings in average

[3] 1969 1971 1= no infection, 5=100% infection

[4] 1972 1 = no infection, 9 = 100% infection

Table 3 . Bluegrass Cultivar Evaluations I
Michigan State University
East Lansing
1968-1973
Area F-4

| Cultivar | Fall Seedling Vigor (In) 1968 | Seedling Appearance (6) [2] | Percent Cover 4/24/69 (3) | Spring Green up [1] 1969 (3) | Spring Green up [1] 1972 (3) | Spring Green up [1] Avg. (6) | Leafspot Rating 1969 (3) [3] | Leafspot Rating 1971 (3) [3] | Leafspot Rating 1972 (3) [4] | Leafspot Rating Avg. (9) | Snowmold % Infected 4/8/73 (9) | Appearance [1] 1969 (21) | Appearance [1] 1970 (24) | Appearance [1] 1971 (15) | Appearance [1] 1972 (16) | Appearance [1] 1973 (3) | Weighted Average (79) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NJE P-56 | .5 | 6.2 | 73% | 1.2 | 3.3 | 2.3 | 1.0 | 1.0 | 1.0 | 1.0 | 7% | 1.3 | 1.8 | 1.2 | 1.2 | 3.0 | 1.4 |
| Nugget | .7 | 3.7 | 92 | 2.4 | 5.3 | 3.9 | 1.0 | 3.0 | 1.0 | 1.7 | 5 | 1.9 | 1.9 | 2.5 | 1.4 | 1.3 | 2.0 |
| NJE P-114 | .7 | 5.9 | 88 | 1.2 | 3.0 | 2.1 | 1.7 | 1.7 | 3.0 | 3.2 | 5 | 1.8 | 2.4 | 1.8 | 2.1 | 2.3 | 2.0 |
| Sodco | .5 | 5.2 | 82 | 1.2 | 4.3 | 2.7 | 1.0 | 3.0 | 3.3 | 2.4 | 15 | 1.9 | 2.8 | 2.1 | 1.2 | 4.0 | 2.2 |
| Belturf | .7 | 3.7 | 92 | 1.0 | 4.3 | 2.7 | 1.0 | 3.0 | 6.7 | 3.6 | 95 | 1.9 | 2.7 | 2.4 | 2.2 | 5.3 | 2.3 |
| A-34 (Warren's) | .8 | 3.9 | 97 | 3.0 | 4.0 | 3.5 | 1.0 | 2.0 | 5.0 | 2.7 | 53 | 2.2 | 2.7 | 2.0 | 2.7 | 5.0 | 2.4 |
| Merion | .5 | 5.0 | 73 | 3.0 | 2.0 | 2.5 | 2.3 | 1.7 | 3.7 | 2.6 | 15 | 2.3 | 2.5 | 2.8 | 2.4 | 3.0 | 2.5 |
| WK-412 (Weibull's) | .7 | 3.5 | 98 | 1.5 | 2.7 | 2.1 | 1.0 | 2.0 | 4.3 | 2.4 | 23 | 2.3 | 2.8 | 2.5 | 1.3 | 7.3 | 2.6 |
| Sydsport | .7 | 6.3 | 50 | 2.7 | 2.7 | 2.7 | 2.0 | 1.7 | 4.7 | 2.8 | 78 | 2.8 | 2.7 | 2.4 | 2.0 | 6.0 | 2.7 |
| Ba 6124 (Scott's) | 1.0 | 6.0 | 80 | 3.2 | 1.3 | 2.3 | 2.7 | 2.3 | 7.0 | 4.0 | 42 | 2.1 | 3.4 | 2.3 | 4.2 | 4.7 | 2.9 |
| WK-411 (Weibull's) | .7 | 4.7 | 92 | 1.5 | 2.3 | 1.9 | 1.0 | 1.7 | 3.3 | 2.0 | 45 | 2.5 | 3.3 | 2.8 | 2.8 | 7.0 | 3.0 |
| Pennstar | 1.0 | 3.2 | 97 | 2.2 | 3.7 | 3.0 | 1.7 | 1.7 | 4.7 | 2.7 | 90 | 2.7 | 3.1 | 2.9 | 4.4 | 7.0 | 3.1 |
| Fylking | 1.0 | 3.0 | 97 | 2.3 | 3.7 | 3.0 | 1.3 | 2.7 | 6.0 | 3.3 | 75 | 2.9 | 3.1 | 3.3 | 4.3 | 7.3 | 3.4 |
| Newport | 1.3 | 3.9 | 93 | 3.7 | 4.3 | 4.0 | 2.3 | 3.3 | 5.7 | 3.8 | 62 | 2.3 | 3.8 | 3.9 | 3.5 | 5.3 | 3.4 |
| K-107 (PSU) | .7 | 5.0 | 90 | 2.7 | 4.3 | 3.5 | 2.0 | 2.0 | 3.3 | 2.4 | 75 | 3.0 | 3.3 | 3.5 | 4.4 | 6.7 | 3.4 |
| PPI (R. I.) | 1.0 | 3.0 | 92 | 2.4 | 2.0 | 2.2 | 1.3 | 1.0 | 3.7 | 2.0 | 10 | 2.9 | 3.4 | 3.3 | 5.5 | 3.0 | 3.4 |
| Primo | 1.0 | 5.7 | 77 | 3.0 | 5.3 | 4.2 | 2.7 | 2.3 | 6.0 | 3.7 | 88 | 2.4 | 4.3 | 3.7 | 2.5 | 5.7 | 3.5 |
| K-162 (PSU) | 1.3 | 3.8 | 92 | 4.0 | 3.0 | 3.5 | 4.0 | 2.7 | 3.3 | 3.7 | 43 | 3.9 | 3.8 | 2.9 | 3.5 | 4.7 | 3.6 |
| Cougar | .5 | 3.4 | 97 | 2.4 | 7.7 | 5.1 | 1.3 | 3.7 | 7.0 | 4.0 | 87 | 2.6 | 4.6 | 4.0 | 3.2 | 6.3 | 3.8 |
| Campus | 1.3 | 3.0 | 97 | 2.2 | 8.0 | 5.1 | 1.7 | 2.7 | 6.7 | 3.7 | 100 | 2.2 | 4.5 | 4.6 | 4.0 | 9.0 | 4.0 |
| Prato | .8 | 3.4 | 88 | 2.4 | 8.7 | 5.6 | 2.0 | 3.0 | 6.0 | 3.7 | 97 | 3.3 | 4.2 | 4.1 | 3.0 | 8.3 | 4.0 |
| Zwartberg | 1.0 | 3.0 | 97 | 2.2 | 4.0 | 3.1 | 1.3 | 3.0 | 4.7 | 3.0 | 50 | 2.7 | 4.4 | 4.5 | 4.8 | 7.0 | 4.1 |
| Arista | 1.3 | 3.5 | 98 | 1.5 | 8.0 | 4.8 | 1.0 | 3.7 | 5.7 | 3.5 | 100 | 2.3 | 4.8 | 5.3 | 3.3 | 8.7 | 4.2 |
| Windsor | 1.2 | 3.0 | 95 | 3.9 | 3.0 | 3.5 | 4.0 | 3.3 | 6.3 | 4.4 | 40 | 3.9 | 4.5 | 4.1 | 3.7 | 5.7 | 4.2 |
| Kenblue | 1.2 | 2.7 | 92 | 4.0 | 4.3 | 4.2 | 3.0 | 3.7 | 8.7 | 5.1 | 83 | 3.4 | 5.3 | 4.3 | 4.4 | 7.0 | 4.5 |
| Geary | 1.7 | 2.5 | 100 | 4.7 | 4.3 | 4.5 | 4.0 | 4.0 | 9.0 | 5.7 | 87 | 3.7 | 5.2 | 4.2 | 5.0 | 7.0 | 4.6 |
| Park | .5 | 6.0 | 67 | 4.9 | 6.0 | 5.5 | 4.0 | 4.0 | 9.0 | 5.7 | 63 | 4.0 | 4.8 | 4.8 | 5.7 | 7.3 | 4.7 |
| S-21 (Jacklin) | 1.7 | 3.4 | 97 | 5.2 | 6.3 | 5.8 | 4.0 | 4.0 | 9.0 | 5.7 | 72 | 3.9 | 5.3 | 5.1 | 4.5 | 7.0 | 4.8 |
| WK-408 (Weibull's) | 1.3 | 3.0 | 100 | 4.5 | 6.3 | 5.4 | 4.0 | 3.7 | 8.3 | 5.3 | 77 | 3.6 | 5.7 | 5.1 | 5.5 | 7.7 | 5.0 |
| Minn-6 | 1.3 | 3.0 | 100 | 4.4 | 5.0 | 4.7 | 4.0 | 4.0 | 7.3 | 5.1 | 82 | 3.9 | 5.7 | 5.5 | 5.0 | 7.3 | 5.1 |
| Delta | 1.5 | 3.2 | 93 | 4.3 | 5.7 | 5.0 | 4.0 | 4.0 | 8.0 | 5.3 | 27 | 3.8 | 5.8 | 5.9 | 5.7 | 5.7 | 5.2 |
| Palouse | 1.7 | 2.2 | 98 | 4.7 | 5.7 | 5.2 | 4.3 | 4.0 | 8.7 | 5.6 | 52 | 4.3 | 5.9 | 5.0 | 6.5 | 6.0 | 5.2 |
| South Dakota Cert. | 1.2 | 3.0 | 90 | 4.5 | 5.0 | 4.8 | 4.0 | 4.3 | 9.0 | 5.8 | 47 | 4.9 | 7.0 | 6.6 | 6.2 | 6.0 | 6.2 |

[1] 1 = best, 9 = poorest

[2] ( ) = no. of individual readings in ave.

[3] 1969 1971 1=no infection, 5=100% infection

[4] 1972 1 = no infection, 9 = 100% infection

STOP 2 (Con't.)

Table 4. Fine Leafed Fescue Cultivar Evaluations-II
Michigan State University
East Lansing
1968-1973
Area E-4

| Cultivar | Fall Seedling Vigor (inches) 9/25/68 | 10/9/68 | Seedling Appearance Fall 1968 (12) [1] | Spring Green up 1969 (3) | Leafspot Rating 1969 (3) | Appearance 1969 (25) | 1970 (24) | 1971 (16) | 1972 (6) | 1973 (3) | Weighted Average (70) | Total Observations If Different From (70) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dawson chewings | 1.1 | 1.7 | 5.2 | 4.3 | 1.3 | 1.9 | 2.9 | 2.3 | 1.5 | 2.3 | 2.3 | |
| Oregon K | 1.7 | 2.2 | 3.7 | 4.3 | 2.3 | 2.5 | 2.8 | 2.2 | 1.8 | 2.3 | 2.5 | |
| MSU-63-FR | 1.9 | 2.3 | 5.3 | 2.0 | 2.3 | 3.0 | 2.8 | 2.1 | 2.0 | 3.7 | 2.7 | |
| Wintergreen chewings | 1.3 | 2.3 | 4.4 | 4.3 | 2.3 | - | 2.8 | 2.7 | 3.3 | - | 2.8 | (34) |
| Brabantia | 1.3 | 2.0 | 5.0 | 4.7 | 2.3 | 2.5 | 3.0 | 3.0 | 2.5 | 3.3 | 2.8 | |
| Polar chewings | 1.3 | 1.7 | 7.5 | 2.7 | 2.3 | 2.6 | 3.7 | 2.6 | 2.3 | 1.7 | 2.9 | |
| Syn 1-64 | 1.7 | 2.7 | 4.3 | 3.3 | 2.0 | 3.1 | 3.1 | 3.2 | 1.3 | - [1] | 3.0 | (67) |
| Oregon D | 1.9 | 2.7 | 3.3 | 5.0 | 2.0 | 3.1 | 3.3 | 3.1 | 3.8 | 2.7 | 3.2 | |
| N2-65 | 2.0 | 2.7 | 4.1 | 4.0 | 2.3 | 3.6 | 3.6 | 3.7 | 3.5 | 4.0 | 3.6 | |
| Reptans red | 2.3 | 3.7 | 3.0 | 2.3 | 3.3 | 4.5 | 3.5 | 3.3 | 2.2 | 4.0 | 3.6 | |
| Bergere | 2.0 | 2.3 | 4.0 | 4.0 | 4.0 | 5.6 | 2.8 | 2.5 | - | - | 3.9 | (49) |
| Sceempter | 2.2 | 3.2 | 4.1 | 3.3 | 3.3 | 4.4 | 3.4 | - | - | - | 4.0 | (33) |
| Rubin | 1.8 | 2.8 | 4.6 | 2.7 | 3.7 | 4.8 | 4.1 | 3.8 | 3.7 | 4.7 | 4.3 | |
| Bargena | 1.0 | 2.0 | 7.0 | 2.0 | 3.0 | 4.6 | 4.4 | 4.0 | 4.5 | 5.0 | 4.5 | (68) |
| Elco | 2.5 | 2.5 | 4.0 | 2.5 | 3.5 | 4.3 | 4.6 | - | - | 1.5 | 4.5 | (47) |
| Rainier red | 2.0 | 2.2 | 3.6 | 2.5 | 4.0 | 4.7 | 4.7 | 4.4 | 4.5 | 6.5 | 4.7 | |
| Steinacher | 2.4 | 3.5 | 2.9 | 3.0 | 4.0 | 4.9 | 4.2 | - | - | - | 4.6 | (33) |
| Cottage | 1.6 | 2.2 | 3.9 | 5.7 | 4.8 | 4.5 | 5.1 | - | - | 2.0 | 4.7 | (48) |
| Echo | 2.7 | 3.8 | 2.3 | 3.3 | 4.7 | 5.2 | 5.0 | 5.5 | 4.0 | 3.7 | 5.0 | |

[1] No. in parenthesis are numbers of observations in a mean.

[2] 1 = excellent, 9 = poorest

[3] 1 = resistant, 5 = susceptible

Table 5. Fine Leafed Fescue Cultivar Evaluation-I (NRT)
Michigan State University
East Lansing
1968-1972
Area E-3

| Cultivar | Fall Seedling Vigor (inches) 9/25/68 | Seedling[2] Appearance Fall 1968 (12)[1] | Srping[2] Green up 1969 (3) | Leafspot[3] Rating 1969 (3) | Appearance[2] 1969 (24) | 1970 (24) | 1971 (12) | 1972 (6) | Weighted Average (66) |
|---|---|---|---|---|---|---|---|---|---|
| C-26 Hard Fescue (NRT) | 1.6 | 4.9 | 4.7 | 1.0 | 1.9 | 2.6 | 2.4 | 2.2 | 2.3 |
| Erika Chewings (NRT) | 1.6 | 3.6 | 4.0 | 1.0 | 2.2 | 3.3 | 2.0 | 2.1 | 2.5 |
| Golfrood Chewings | 1.6 | 3.7 | 4.7 | 3.0 | 2.5 | 2.7 | 2.7 | 1.5 | 2.5 |
| Highlight Chewings(NRT) | 2.1 | 3.0 | 3.7 | 2.7 | 2.3 | 3.1 | 2.6 | 1.8 | 2.6 |
| Jamestown Chewings(NRT) | 1.7 | 4.1 | 2.3 | 1.0 | 2.1 | 3.2 | 3.1 | 4.2 | 2.8 |
| Arctared red | 1.8 | 3.1 | 4.7 | 2.0 | 3.3 | 3.1 | 2.2 | 1.5 | 2.9 |
| Barfella Chewings | 1.7 | 3.3 | 3.3 | 2.7 | 2.9 | 3.0 | 3.6 | 2.6 | 3.1 |
| S-59 red | 1.3 | 5.0 | 3.3 | 3.0 | 3.8 | 3.4 | 3.3 | - | 3.5 |
| BL-127 Chewings | 1.7 | 3.2 | 2.3 | 2.0 | 3.2 | 3.8 | 4.3 | 4.7 | 3.8 |
| Tjelvar (NRT) | 2.5 | 3.5 | 3.0 | 3.7 | 4.4 | 3.6 | 3.4 | 3.1 | 3.8 |
| Pennlawn red (NRT) | 1.8 | 2.9 | 3.7 | 2.7 | 3.6 | 3.5 | 4.8 | 5.3 | 3.9 |
| Cascade Chewings | 2.2 | 3.2 | 3.0 | 2.3 | 3.9 | 3.9 | 4.4 | 5.4 | 4.1 |
| Oasis Chewings (NRT) | 1.7 | 4.5 | 3.3 | 2.7 | 4.0 | 3.8 | 4.6 | 4.8 | 4.0 |
| Sceempter Chewings(NRT) | 1.8 | 4.5 | 3.3 | 3.3 | 4.6 | 4.1 | 3.3 | - | 4.1 |
| Ruby red | 2.3 | 3.2 | 4.0 | 3.0 | 4.2 | 4.2 | 4.4 | 3.2 | 4.2 |
| Illahee red | 1.5 | 3.8 | 3.7 | 2.3 | 4.0 | 4.2 | 4.6 | 6.0 | 4.3 |
| Common Chewings (NRT) | 1.7 | 3.4 | 3.3 | 2.7 | 3.9 | 4.3 | 4.8 | 5.8 | 4.3 |
| Boreal | 2.3 | 3.6 | 2.3 | 2.7 | 4.8 | 4.3 | 4.3 | 3.8 | 4.4 |
| Olds red | 2.1 | 2.8 | 3.3 | 3.0 | 5.4 | 4.7 | 5.0 | 4.8 | 5.0 |
| Duraturf red | 1.3 | 5.5 | - | - | 6.5* | 4.0* | - | - | 6.0 |

[1] No. in parenthesis are numbers of observations in the mean.

[2] 1 = excellent, 9 = poorest

[3] 1 = resistant, 9 = susceptible

The long term performance of the Kentucky bluegrass cultivars is summarized in Tables 2 and 3. In late summer of 1972, Fylking and Pennstar were severely thinned by Fusarium blight. The damage to these two cultivars was greater than on any of the others. The most striking observations at this Field Day are the differentials in annual bluegrass invasion among the cultivars. Annual bluegrass is now the dominate species in many of the more leaf spot susceptible cultivars. In contrast, certain top performing cultivars have essentially no annual bluegrass invasion.

The red and chewings fescues are best adapted to shaded sites and droughty, sandy soils maintained at a minimal nitrogen fertility and irrigation level. Forty-five fine leaf fescue cultivars were established September 13, 1968, for comparative evaluation under lawn-turf conditions. The plot size is 5 x 8 feet with 3 replications. The experimental area is cut at a height of 1.2 inches twice per week with clippings returned. Irrigation is supplied as needed to prevent wilt. A split-plot nitrogen application has been made across the plots at rates of 2 and 4 lbs nitrogen per 1000 square feet per year.

The long term performance of these chewings and red fescue cultivars is shown in Tables 4 and 5. As a group, the chewings fescues have ranked superior to the red fescues in monostands. The chewings fescues tend to have a more bunch type growth habit and high shoot density while the red fescues have a creeping (rhizomatous) growth habit and lower shoot density which makes them more compatible in mixtures. None of the cultivars being evaluated possesses adequate leaf spot resistance.

## STOP 3

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### Kentucky Bluegrass Blend, Fine-Leaf Fescue Blend, and Mixture Evaluations

A blend is a combination of two or more cultivars within one species only. Four studies concerning Kentucky bluegrass blend evaluations have been underway at East Lansing. One was established in 1962 and contained 11 different combinations of Merion, Newport, Park, Delta, and Kenblue. A second blend study was established in September of 1968, which included 11 different combinations of Merion, Newport, Park, Fylking, Windsor, and Prato (Table 6). Subsequently, a more extensive series of 18 blends was established in September of 1971 (Table 7). Over this 11-year period of four studies the blends containing at least one Helminthosporium leaf spot resistant cultivar were not significantly different in terms of visual turfgrass quality. The only time when the blends containing only leaf spot susceptible cultivars ranked inferior was during the May-June period when leaf spot thinning was visually evident. Since no one Kentucky bluegrass cultivar ranks superior in all desired characteristics, it is desirable to combine three or four cultivars that contain unique individual characteristics in terms of adaptation and disease resistance or appearance. The result is a turf that has better overall performance and adaptation to a range of soil and environmental conditions as well as a greater capability to persist under severe attacks from any one disease organism.