

The plots were sodded to a blend of Kentucky bluegrass turf in mid-August. Initial testing was conducted by applying bromide, Br-, to the lysimeters and then measuring the time it took for the bromide to leach through the soil cores. Bromide is an inorganic anion that behaves similarly to nitrate. Results of these leaching studies are discussed elsewhere in these proceedings (see article by Miltner in this issue).

We have received a grant from the United States Golf Association Green Section Research Committee to investigate the leaching of a variety of pesticides commonly used in turf management. We will also study the fate of nitrogen in turfgrass soils using the lysimeters to quantify the amount of nitrate leaching that occurs from a single application of 1 lbN/M of urea applied in the late fall or early spring.

1990 VARIETY EVALUATIONS

Seven active variety trials are currently being evaluated at Hancock Center and other sites around the state. Three of particular interest are presented here (Tables 3-5). Those trials are the bentgrass variety trial, the Kentucky bluegrass variety trial, and the tall fescue variety trial. The bentgrass variety trial is new and was seeded in the fall of 1989. The trial consisted of 21 varieties established as a green. Mowing height was 1/4" and will be lowered to 1/8" over the course of the next growing season. Ratings were taken at the end of the 1990 growing season as the trial began to mature. These data have to be evaluated with caution since these are strictly quality data without any traffic being applied to these plots.

The data on Kentucky bluegrass shows Princeton 104 to be an outstanding variety. A current list of recommended varieties can be obtained through the Cooperative Extension Service. Remember when picking varieties, a general rule-of-thumb is that any variety in the top 25% of the trial will give excellent turf quality. Many people look at these trials and want the variety at the top of the list. Often there is very little difference in quality between the top rated varieties in a trial. In fact the performance of Princeton 104 in this trial is very unusual in that it stands so far above the other varieties in performance.

The tall fescue varieties continue to be attractive for use in medium maintenance turfs especially where irrigation may not be available. The number of newly released varieties in this species is impressive but makes it difficult for the turf manager to keep up with all the new varieties. The tall fescues offer several advantages to Kentucky bluegrass in medium maintenance situations. First they have excellent disease tolerance with the most serious disease being brown patch which does not occur frequently in Michigan due to our cooler climate. The wear tolerance of this species is excellent and it needs less frequent irrigation because of its deep and extensive root system. Drawbacks of this species are that it does not blend well with other grass species and it is only weakly rhizomatous.

Table 3. 1990 Evaluations of the Bentgrass Variety Trial.

Variety	8-13-90	9-26-90	Grand Mean	Yellow Tuft
88.CBE	7.3	8.5	7.9	1.8
PROVIDENCE	7.5	8.2	7.8	0.3
88.CBL	7.5	7.8	7.7	0.7
NORMARC 101	7.2	8.0	7.6	0.3
SR 1020	6.7	8.0	7.3	1.3
COBRA	7.2	7.3	7.3	1.0
PENNCROSS	7.3	7.0	7.2	0.7
PENNLINKS	7.3	7.0	7.2	0.7
PUTTER	5.8	7.7	6.8	2.3
MSCB-6	6.0	7.0	6.5	0.2
UM 84-01	5.8	7.0	6.4	2.5
TAMU 88-1	6.5	6.2	6.3	1.0
MSCB-8	5.7	6.8	6.3	1.5
CARMEN	6.0	6.3	6.2	2.8
FORBES 89-12	5.3	6.8	6.1	2.0
WVPB 89-D-15	5.3	6.7	6.0	1.7
EMERALD	6.2	5.0	5.6	1.0
NATIONAL	5.2	5.8	5.5	2.3
EGMONT	2.3	1.0	1.7	0.0
BARDOT	2.0	1.0	1.5	0.0
ALLURE	1.3	1.0	1.2	0.0
TRACENTA	1.3	1.0	1.2	0.0
BR 1518	1.0	1.0	1.0	0.0

Table 4. 1990 Evaluations of the National Kentucky bluegrass trial established in 1986.

Variety	Quality Ratings					Grand Means
	6-4-90	7-11-90	8-8-90	9-7-90	10-7-90	
P-104	8.2	6.5	8.7	7.7	7.5	7.6
MIDNIGHT	7.0	6.0	7.3	7.0	7.2	6.7
ECLIPSE	6.8	7.7	6.8	5.8	6.0	6.6
CHALLENGER	6.2	6.7	6.8	5.8	6.3	6.3
LOFTS 1757	6.0	6.3	6.7	6.2	6.3	6.3
SOMERSET	5.2	5.7	6.7	6.8	6.2	6.3
ASSET	7.0	6.3	6.3	5.8	5.7	6.3
K3-178	5.3	5.3	6.5	6.2	6.2	6.2
ASPEN	6.0	6.8	6.3	7.0	6.2	6.1
MYSTIC	5.5	6.3	7.7	6.7	5.3	6.1
ADELPHI	6.2	5.8	6.5	6.0	5.8	6.1
BA 72-441	6.0	6.3	6.2	5.2	5.5	5.8
BA 70-242	5.8	6.0	6.3	5.7	5.3	5.8
MERION	4.8	6.2	6.7	6.5	5.0	5.8
ABLE 1	5.8	6.2	7.0	5.5	5.2	5.7
WABASH	4.8	6.3	6.2	5.8	5.0	5.7
NE 80-88	5.3	6.2	6.3	6.5	4.5	5.7
PARADE	5.5	5.3	5.5	5.8	5.7	5.7
HUNTSVILLE	5.2	6.0	6.5	5.7	5.0	5.6
AQUILA	5.7	5.7	6.8	4.5	5.3	5.6
MONOPOLY	5.0	5.8	5.8	6.3	4.8	5.6
VICTA	6.0	5.8	6.3	5.2	5.2	5.6
DAWN	5.8	5.2	5.7	5.2	6.5	5.6
PST-CB1	5.2	5.5	6.2	5.2	5.7	5.6
BAR VB 577	5.2	5.7	6.0	6.0	4.8	5.6
BA 73-626	6.0	6.0	6.2	5.7	5.3	5.5
TENDOS	5.7	5.8	6.2	4.8	5.2	5.5
MERIT	5.7	5.7	6.7	5.0	5.0	5.4
GNOME	5.5	5.8	6.2	5.0	4.8	5.4
WW AG 468	6.7	5.8	6.2	5.0	4.3	5.4
JOY	4.8	5.3	5.3	5.2	5.3	5.4
MAJESTIC	5.7	5.0	5.7	5.2	4.5	5.4
F-1872	5.3	5.3	6.0	4.7	5.2	5.3
BRISTOL	5.7	5.2	4.8	5.0	5.7	5.3
CLASSIC	5.3	5.5	6.3	5.3	5.2	5.3
RAM-1	5.8	5.7	5.7	4.3	4.7	5.3
BA 70-139	5.7	5.3	6.0	5.2	4.5	5.3
K1-152	5.2	4.8	6.2	4.7	5.5	5.3
GLADE	6.2	6.0	5.7	4.8	4.3	5.3
SYDSPORT	5.3	5.0	6.2	5.0	5.7	5.3
CHERI	5.2	5.5	5.5	4.5	5.5	5.3
WELCOME	6.5	5.3	5.5	4.7	4.8	5.2
TRENTON	4.7	5.3	5.3	5.2	6.0	5.2
TOUCHDOWN	5.5	4.8	6.0	4.7	5.2	5.2

Table 4. 1990 Evaluations of the National Kentucky bluegrass trial established in 1986 cont'd.

Variety	Quality Ratings					Grand Means
	6-4-90	7-11-90	8-8-90	9-7-90	10-7-90	
AMERICA	5.3	6.3	5.7	5.5	5.0	5.2
HARMONY	5.8	5.3	6.2	4.5	4.7	5.2
DESTINY	5.7	5.5	6.0	4.0	4.7	5.2
239	5.3	5.2	5.5	4.2	5.5	5.2
BLACKSBURG	5.8	5.2	5.8	4.5	5.3	5.1
LIBERTY	5.7	5.3	5.7	4.0	5.3	5.1
SOUTH DAKOTA CERT.	4.8	5.3	5.3	4.7	5.0	5.1
KENBLUE	4.3	4.8	5.2	5.5	4.8	5.0
ANNIKA	4.3	5.8	6.0	5.5	5.2	5.0
NASSAU	5.2	5.5	5.8	4.5	4.8	4.9
HAGA	5.0	5.0	6.0	4.0	5.2	4.9
BARON	5.2	5.0	5.7	5.2	4.5	4.9
IKONE	5.8	4.3	5.0	4.5	4.8	4.9
HV 97	5.3	4.8	5.2	4.5	4.7	4.9
BA 72-500	5.5	5.5	5.8	4.0	4.5	4.8
CONNIE	4.8	4.8	5.8	5.0	4.7	4.8
BA 73-540	6.2	4.2	5.8	3.8	4.0	4.8
RUGBY	5.5	4.8	5.3	4.0	4.7	4.8
GEORGETOWN	4.3	4.8	5.3	4.0	5.3	4.7
BA 69-82	5.7	4.0	5.7	4.2	4.2	4.7
WW AG 491	5.3	4.7	5.7	4.3	4.0	4.7
COMPACT	4.8	4.8	5.3	4.3	4.5	4.6
JULIA	5.3	4.5	5.2	4.5	4.0	4.6
AMAZON	4.7	4.7	5.0	4.8	4.0	4.5
CYNTHIA	4.2	4.2	5.3	4.7	4.5	4.5
WW AG 496	5.3	4.3	5.0	3.7	4.2	4.4
BARZAN	4.0	5.0	5.0	4.5	4.7	4.4
WW AG 495	4.8	4.7	5.7	3.5	4.0	4.4
BAR VB 534	4.3	5.0	4.7	4.7	4.0	4.3
A-34	5.3	4.8	5.0	3.2	3.5	4.3
BA 72-492	4.7	3.8	4.7	3.0	3.7	4.0

Table 5. 1990 Evaluation of the Tall Fescue Variety Trial.

Variety	5-1-90	6-4-90	7-11-90	8-9-90	9-7-90	10-7-90	Grand Means
Aztec	6.0	6.0	7.5	8.0	7.2	6.7	6.9
Eldorado	7.0	6.5	6.8	7.0	7.2	6.2	6.8
Avanti	6.7	6.2	7.2	7.7	7.0	6.0	6.8
Normak 99	6.2	6.2	7.7	7.0	7.7	5.8	6.8
Crossfire	6.0	6.5	6.8	7.7	7.0	6.3	6.7
Cohise	5.8	6.3	7.0	7.3	7.5	6.3	6.7
Hubbard 87	6.5	6.2	5.8	6.8	6.5	6.7	6.4
Guardian	5.8	6.2	6.3	6.7	7.5	6.0	6.4
PE-7	5.5	6.7	6.3	7.0	6.5	6.2	6.4
Legend	6.0	6.0	6.8	7.0	6.2	6.2	6.4
Shortstop	5.8	6.2	5.8	7.3	7.0	5.8	6.3
PST-5MW	6.0	6.0	6.0	7.3	6.8	5.8	6.3
Cimmaron	6.3	6.3	6.0	6.3	6.8	6.0	6.3
PST-5AG	6.2	6.5	5.7	7.3	6.7	5.5	6.3
Phoenix	6.0	6.2	6.8	6.3	7.0	5.3	6.3
Monarch	6.0	6.3	6.2	7.0	6.7	5.5	6.3
Tribute	5.5	5.7	6.7	6.5	7.2	6.2	6.3
KWS-DUR	5.5	6.2	7.0	6.7	6.3	6.0	6.3
Silverado	6.0	5.7	6.7	6.7	6.8	5.8	6.3
Mesa	6.5	6.0	6.3	6.2	6.8	5.5	6.2
Maverick II	5.7	5.7	6.0	7.0	7.2	5.8	6.2
Amigo	5.8	6.2	6.7	6.8	6.3	5.3	6.2
Bel 86-2	6.0	6.7	6.8	6.2	6.0	5.3	6.2
Winchester	6.0	6.2	6.3	5.8	6.8	5.7	6.1
Wrangler	6.2	5.8	6.0	6.8	6.0	6.0	6.1
Trailblazer	6.2	6.5	6.5	5.0	6.2	6.2	6.1
Thoroughbred	5.0	6.0	5.8	6.3	7.0	6.2	6.1
Taurus	5.3	6.0	6.5	6.0	6.3	6.2	6.1
Rebel II	5.3	5.5	6.2	6.0	6.8	6.3	6.0
Bonanza	6.3	6.3	5.8	6.3	6.0	5.3	6.0
PST-5EN	5.7	6.5	6.7	5.0	6.7	5.7	6.0
Chieftan	5.7	6.2	6.0	6.0	6.7	5.7	6.0
Olympic II	5.5	6.0	6.3	6.3	6.5	5.3	6.0
PST-5DM	5.5	6.0	5.7	6.3	6.3	5.7	5.9
Jaguar II	5.2	5.8	6.0	6.3	6.5	5.7	5.9

Table 5. 1990 Evaluation of the Tall Fescue Variety Trial cont'd.

Variety	5-1-90	6-4-90	7-11-90	8-9-90	9-7-90	10-7-90	Grand Means
Bel 86-1	6.5	6.3	6.3	5.3	5.7	5.3	5.9
PST-5AP	6.2	5.5	6.0	6.0	6.3	5.5	5.9
JB-2	5.5	5.5	6.3	6.0	6.7	5.2	5.9
Olympic	5.8	5.8	6.2	4.7	7.3	5.3	5.9
Sundance	5.7	5.5	6.0	5.0	6.5	6.0	5.8
Apache	5.5	5.7	5.3	6.2	6.5	5.3	5.8
Trident	5.2	5.8	5.8	5.3	6.3	5.8	5.7
PST-DBC	5.3	5.5	5.5	6.3	6.8	4.8	5.7
Rebel	4.7	5.8	6.0	5.2	6.8	5.5	5.7
Jaguar	5.0	6.0	5.8	5.3	6.0	5.3	5.6
Murietta	5.0	6.0	5.7	5.7	5.8	5.3	5.6
Richmond	5.5	4.8	5.3	5.0	7.0	5.7	5.6
Titan	4.8	5.3	5.7	6.7	5.8	5.0	5.6
Arid	4.8	5.0	5.7	6.0	6.2	5.5	5.5
Emperor	5.8	5.2	6.2	4.3	6.0	5.5	5.5
Carefree	5.5	4.8	5.8	5.2	6.0	5.5	5.5
Falcon	5.5	5.3	5.3	5.0	6.5	5.2	5.5
Willamette	5.0	5.3	5.2	5.3	6.3	5.3	5.4
Finelawn 5GL	4.7	5.5	5.5	5.3	6.2	5.3	5.4
Aquara	5.2	5.0	5.2	5.3	5.8	5.3	5.3
Finelawn I	5.5	5.5	5.3	4.3	6.0	5.2	5.3
Adventure	4.7	5.0	5.5	6.3	5.8	4.3	5.3
Tip	5.2	4.7	5.5	3.7	6.3	5.3	5.1
Pacer	4.7	5.2	5.3	4.0	5.8	5.5	5.1
Fatima	5.3	4.5	5.3	4.3	6.3	4.5	5.1
KY-31	4.3	4.7	5.0	3.0	5.3	4.5	4.5