REVIEW OF CORRELATION COEFFICIENTS CONDUCTED ON NTEP TRIALS

Kevin Morris, June 2007

At the February 2007 Policy Committee I submitted correlations that NTEP staff had run at the request of the Policy Committee. The correlations utilized the six most recently completed trials; five cool-season and one warm-season with four or five years of data for each. Since NTEP data is now analyzed by region and management level, we ran the correlations based on the different management schemes for each trial. This gave us fifteen different groupings of correlations, based on species and management level.

Consequently at the February meeting, the Policy Committee asked me to review, summarize and give my opinion on the correlations, related to the ability of NTEP trial locations with breeding programs to produce data that is consistent with other locations.

To perform that task, without considering whether a location employed a turfgrass breeder or not, I needed to define the criteria I would use to make this determination. I decided to summarize the trials and locations based on how well they correlated with the mean of all the locations in each particular analysis (management level group). Any location that had a r^2 value of 0.4 or lower with the overall mean for that analysis (management level group) would be flagged and identified. To me, this meant the location was at least somewhat non-conforming, in comparison to an average of all locations in that group. There may be many reasons for the lower r^2 value, some perfectly reasonable. However, at least if a location performed different from the average, it would be identified.

The results of this location review can be found in the accompanying table. As you can see, I listed the trial, management schedule for that group, number of locations in the analysis and the locations that fit the criteria (r^2 of 0.4 or lower compared to the mean of the group). Some trials/management groups had no locations that fit the criteria while one had four of the eight locations fitting the criteria. Eleven of the fifteen trials/management groups had either no locations or only one location that fit the criteria.

Three locations that have active breeding programs (RI1, OK1, TX1) each were identified one time as fitting the criteria. However, OK1 and TX1 fit the criteria for a species that they are not actively breeding (tall fescue). The other location (RI1) was flagged for a low r² in the Kentucky bluegrass trial, a species I do not believe they breed actively. Another location, NC1, was flagged for its bentgrass trial, but I do not believe they have any breeding activity in bentgrass (unsure about that).

The largest public breeding programs in warm-season (Oklahoma State) and cool-season (Rutgers) are NTEP cooperators but have r^2 values that are consistent with other locations. For instance, OK1 has an r^2 =0.808 for bermuda and NJ1 and NJ2 have r^2 values of 0.939 and 0.952 respectively, for perennial ryegrass, compared to the mean of all locations in that management grouping. The story is the much the same when considering other species for the two large breeding programs or smaller breeding programs at locations such as Dallas, TX, Kingston, RI and University Park, PA.

In conclusion, since r^2 values are high, there is not large variability in data collected from locations with public breeding programs, compared to the averages of locations with similar management regimes. Therefore, I see no need to eliminate public breeding programs from consideration as NTEP cooperators.

IAL I OCATIONS WITH R2 VALUES OF 0.4					
	OR LESS, CORRELATED WITH MEAN				
	OF THOSE		LOCATIONS		
1997 Bermuda, Schedule A	VA1				
9 locations	0.0483				
1997 Bermuda, Schedule B	none				
11 locations					
1998 Bent Fairway, 3'8" mowing	none				
4 locations					
1998 Bent Fairway, 1/2" mowing	QE1				
11 locations	-0.399				
1998 Bent Fairway, 5/8" mowing	MA1	MO1	SD1	UT1	
8 locations	0.294	0.1436	0.1503	0.324	
1998 Bent Green, Sand Based	NC1				
14 locations	0.2401				
1998 Bent Green, Soil Based	MA1	ME1			
10 locations	0.3466	-0.0409			
1999 P. Rye, Schedule A	NY1				
10 locations	0.3564				
1999 P. Rye, Schedule B	NS1				
10 locations	0.1647				
1999 P. Rye, Schedule C	QE1				
8 locations	0.2714				
2000 Ky. Blue, Schedule A	none				
9 locations					
2000 Ky. Blue, Schedule B	RI1	WA3	WY1		
15 locations	0.3237	0.365	0.0457		
2000 Ky. Blue, Schedule C	none				
6 locations					
2001 Tall Fescue, Schedule A	OK1	TX1	TX3	WA3	
19 locations	0.2487	0.3626	0.0658	0.3542	
2001 Tall Fescue, Schedule A	none				
11 locations					