

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 r^2 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.

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