SUBJECT: Grand Mean tables

TO: Seed company personnel, researchers and breeders

FROM: Kevin N. Morris

DATE: February 27, 2002

There has been considerable discussion within the turfgrass industry concerning the usefulness of the so-called "Grand Mean", the average of all turfgrass quality ratings from all locations presented in Tables 1-3 in NTEP reports. This discussion has also been taken up by the NTEP Policy Committee over the past two years. The committee has requested and received much input from breeders, seed companies, marketers, seed producers, researchers, extension educators, statisticians and others about this issue. There are many valid opinions on both sides of the issue with pros and cons of either keeping or eliminating the Grand Mean.

Needless to say, the Policy Committee has taken a great deal of time to consider all sides and has come up with a compromise solution. Since there seems to be some misunderstanding about this decision and what it entails, the Policy Committee felt the need to communicate the decision-making process and their intentions.

Here are a few things you need to know concerning the discussion of this issue and the decision:

1.   As many of you know, the Policy Committee voted to eliminate the Grand Mean from NTEP reports, effective in 2002, at its June 2001 meeting. After that decision was made, more polls and opinions were received from various groups with some being adamantly opposed to the decision. There was not unanimous agreement to eliminate the Grand Mean, as the Policy Committee had previously thought. Thus, they agreed to revisit the issue at their most recent meeting.

2.   There is concern among some individuals (and several statisticians) that when a significant genotype x environment (G x E) interaction occurs, pooling data and subjecting these data to statistical analysis (ANOVA and LSD) is invalid. Since there is not a consensus on the invalidity or accuracy of our current procedures, we have attempted to alleviate this concern by calculating the Grand Mean and providing assorted ranking indicators on a separate table (see Table 1), but NOT running an analysis of

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variance and mean separation test on the grand mean data. The primary reason for including the grand mean on a separate table is to provide an <u>accurate</u> mean for those individuals who may otherwise calculate an incorrect mean on their own.

3.   The Policy Committee continually examines the issue of NTEP data reporting and statistical analysis. We are open to new ideas and approaches that will improve the accuracy of the data and help users interpret the results. Therefore, we just completed funding of five projects that investigated NTEP data analysis methods. The results of these studies indicated that statistically, current NTEP data analysis procedures are mostly appropriate but could also be improved. Therefore, we will continue funding one project that analyzes the G x E interactions. Hopefully, this will make NTEP data more useful in the future.

4.   The compromise decision reached by the Policy Committee results in the following:

Tables 1-3 as you know them will be eliminated from NTEP reports published in 2002. We will publish turfgrass quality tables grouped and analyzed by management levels, regions, shade, traffic, etc. as we have done in past reports. In addition, we will compile and publish a summary table in the **back** of the NTEP reports. This summary table will look like the following table.

I hope this provides some information on the recent decision by the Policy Committee. If you have any questions or comments, please feel free to contact me at 301-504-5125, 301-504-5167 or kmorris@ntep.org.

Summary of turfgrass quality ratings (published in the back of NTEP reports)

Entry	All Locations			Statistics for all locations				
	Mean 1/	Rank 2/	Sum of Ranks 3/	Rank 4/	Highest Rank 5/	Lowest Rank 6/	Maximum in Top 25% 7/	
(alphabetical order)	(Average of all locations)						(%)	
Entry A	6.2	52	712	57	3	117	52	
Entry B	6.4	4	557	16	1	98	68	
Entry C	6.4	11	604	8	2	66	73	
Entry D	5.9	110	960	101	15	125	15	

Explanation:

1/   Mean - an average of all the turfgrass quality ratings from all locations.
2/   Rank - ranking of the mean of all quality ratings.
3/   Sum of Ranks - a sum of all the rankings from the various locations.
4/   Rank - the ranking of the Sum of Ranks.
5/   Highest Rank - the highest ranking achieved by that entry at any one location.
6/   Lowest Rank - the lowest ranking achieved by that entry at any one location.
7/   Maximum in Top 25% - the percentage of locations where that entry finished in the top 25% of all entries.