

TEAM and Individual Scores at the 2002 National Soil Judging Contest

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ABSTRACT

The 2002 National Soil Judging Contest was hosted by the University of Minnesota the fourth week of April near Red Wing, MN. Twenty-one universities from around the country participated in this educational event. For the third consecutive year a TEAM (Together Everyone Accomplishes More) aspect of soil judging was included. TEAM judging requires that the team judge two profiles in a similar fashion as the official judges by coming to a consensus on their description. Data from the 2002 contest shows that TEAM judging results in higher scores on most segments of the score card than individual judging. Only soil texture determination was significantly less for TEAM judging. Students and coaches like the aspect of TEAM judging at the national soil judging contest.

THE NATIONAL COLLEGIATE SOILS CONTEST is sponsored by the Student Activities Subdivision of the American Society of Agronomy, and the Soil Science Society of America. Each year since 1961 a team from a participating school has been declared the winner at the end of the competition (Table 1). The winning team score before 2000 consisted of the best three team members scores at four soil pits. This team score consisted of totaling individual team members efforts, since they could not collaborate with other team members during the contest. Recognition of the top 5 or 10 individuals has also been done at each national contest.

The objectives of a soil judging contest as defined by Post et al. (1974) are: (i) to gain knowledge about soil in an area with "in field" training; (ii) to allow students and faculty to exchange ideas with each other about common interests; (iii) to promote soil science; (iv) to have the opportunity to compete in a collegiate contest that can be put on a resume; and (v) to have fun. Winning is not emphasized in these objectives and Post et al. (1974) suggested that the winning aspect be de-emphasized.

Seldom is a contest held where the official score card is prepared by only one experienced soil scientist. In most cases the official score sheet is determined with two to four official judges working together to determine the soil morphology, soil profile characteristics, site characteristics, soil classification, and site interpretations. The idea of cooperative efforts by contestants for soil judging was not introduced at the national level until the 2000 contest when the University of Idaho introduced the TEAM aspect of soil judging. TEAM judging was used as a demonstration by the University of Arizona at the 1999 national contest.

TEAM (together everyone accomplishes more) soil judging was first tested in 1990 (Cooper, 1991) when the University of Minnesota at the Region V contest used one site as a TEAM site. TEAM soil judging requires that the entire team (four or more persons), as a group, describes the soil and turns in only one score sheet for grading. The team is truly working together in determining the answers, similar to the way official judges prepare the official site description. During the 1990 Region V contest only one TEAM site was used to contribute points toward the contest winner. This proved to be a rewarding experience for the students and the coaches. The TEAM approach was used for all sites in the 1991 Region V contest hosted by the University of Nebraska. That year the contest host, Dr. Dave Lewis, allowed schools to designate a four-person team for each of six sites and the team could vary between sites if a school brought more than four members. The contest was open book and students could communicate among themselves but not with their coaches. There were no individual awards. Lewis suggested if the coaches wanted to recognize individual effort they designate a "most valuable judger" award for each team.

In 1992 South Dakota State University hosted the Region V contest and Dr. Doug Malo, the contest coordinator, modified the 1990 and 1991 procedures to the current procedure used in Region V. The Region V contest now consists of five sites with two of the sites individually judged by four team members and three of the sites TEAM judged. There is no limit to the number of students that can work together on the TEAM sites. The contests are open book and coaches are allowed to be on-site during both events but cannot communicate with the team. Sixty minutes are allowed for judging a TEAM or individual site. Usually, the contest sites are judged on Thursday and the coaches help in grading papers that evening. The results and the awards are announced at a breakfast Friday morning. This helps in avoiding the all-night drive for teams who are anxious to return to their school for classes or football games.

In the national soils contests of 2000, 2001, and 2002, the team score consisted of the best three out of four individual scores at three pits added to the score the team obtained for two TEAM judged pits. This allows for individuals to be recognized for their individual effort, a school to be recognized for their total effort (individual added to TEAM scores) and also for a school to be recognized for the best TEAM effort. The traveling trophy goes to the school with the highest total effort score.

The objective of this article is to report on the results of the 2002 national contest for individuals, teams, and their TEAM effort. The 2002 contest was hosted by the University of Minnesota during the week of 20–26 April. The five contest and 19 practice sites were in Goodhue and Dakota Counties in southeastern Minnesota. The landforms and soils were varied to provide the contestants a wide variety of learning experi-

Abbreviations: TEAM, together everyone accomplishes more.

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Table 1. National soils contest winners.[†]

Year	Winner	Host
2002	University of Wisconsin-Platteville	University of Minnesota
2001	University of Wisconsin-Platteville	Pennsylvania State
2000	Penn State	University of Idaho
1999	Purdue	University of Arizona
1998	Texas A&M	University of Georgia
1997	University of Wisconsin-Platteville	University of Wisconsin-Madison
1996	Cornell	Oklahoma State
1995	University of Arkansas	University of Missouri
1994	University of Wisconsin-Platteville	University of Maryland
1993	University of Wisconsin-Platteville	Oregon State
1992	Iowa State	University of California-Davis
1991	Ohio State	Murray State (Kentucky)
1990	Ohio State	Purdue
1989	Clemson	Tarleton State (Texas)
1988	University of Wisconsin-Platteville	South Dakota State
1987	Virginia Poly Tech	Cornell (New York)
1986	Auburn	Colorado State
1985	University of Wisconsin-Platteville	University of Tennessee
1984	Maryland	California Poly Tech-SLO
1983	University of Wisconsin-Platteville	Ohio State
1982	Cornell University	University of Arkansas
1981	University of Wisconsin-Platteville	University of Nebraska
1980	Auburn	Penn State
1979	Auburn	Montana State
1978	Auburn	New Mexico State
1977	Texas Tech	Clemson University
1976	University of Wisconsin-Platteville	University of Illinois
1975	Texas Tech	Texas A&M
1974	Purdue	Iowa State
1973	Texas Tech	University of Maryland
1972	Maryland	Virginia Poly Tech
1971	Delaware Valley	University of Arizona
1970	Purdue	Michigan State
1969	Purdue	Oklahoma State
1968	Illinois	Kansas State
1967	Texas Tech	Cornell University
1966	Louisiana State	New Mexico State
1965	Illinois	North Carolina State
1964	Texas Tech	University of Wisconsin-Madison
1963	Texas A&M	Texas Tech
1962	Cornell	University of Minnesota
1961	Tennessee Tech	University of Kentucky

[†] Determined from the names on the traveling trophy.

ences. The weather was also variable with a 15-cm (6-inch) snowfall on Sunday, 21 April, followed by temperatures in the 70s on Tuesday, and a thunderstorm on Wednesday afternoon. The three individual sites were judged on Thursday afternoon with a 30 mph breeze and the two TEAM sites were judged Friday morning with the sun shining and the temperature near 28°F. The contest results were announced at 1500 h (3:00 p.m.) Friday afternoon.

RESULTS FROM THE 2002 SOILS CONTEST

The University of Wisconsin-Platteville, with a total effort score of 2775 (78.1%), was the first place school when the best three out of four contestants at the individual sites were added to the two TEAM sites. The second place school was Iowa State University, with a total effort score of 2713 (76.3%). The last place school had a total effort score of 2343 (65.9%). The school with the highest TEAM score was South Dakota State University with a score of 543 (78.6%), and the second place TEAM score school was North Carolina State University with a score of 536 (78.1%). The last place TEAM score was 441 (63.9%) (Fig. 1, 2, and 3).

Copies of all score cards were made before returning them to the teams at the awards ceremony. Table 2 provides the mean scores for selected score card categories for the total of the individuals that made up a team and the TEAM score. Cat-



Fig. 1. South Dakota State University working on TEAM Pit 4.



Fig. 2. University of Wisconsin-Platteville collecting samples at TEAM Pit 5.

egories were based on the categories of the score card. Horizons included the master, subhorizon, and number; texture was the textural class name; % clay was the estimated percentage clay; color was the hue, value, and chroma; and structure was the grade and shape. Soil profile characteristics included hydraulic conductivity of the surface and limiting layer, effective rooting depth, water retention to 150 cm, and soil drainage class. Site characteristics included landform, parent material, slope, hillslope profile position, and surface runoff. Soil classification included epipedon, diagnostic subsurface horizons and features, order, suborder, great group, family particle-size class, and particle-size control section. Site interpretations included dwellings with basements, local roads and streets, septic tank drain fields, and land capability class.

Comparisons between the individual totals and the TEAM totals provide some insight into how TEAM soil judging compares with individual soil judging. In six of the nine score card categories, the TEAM mean was significantly higher than the individual mean. Only in the Texture category was the individual mean significantly greater than the TEAM mean. The level of difficulty between the TEAM and individual soil pits



Fig. 3. University of Tennessee looking for horizons at TEAM Pit 5.

may not have been the same and this could account for these differences. The soil pits used for TEAM sites were 32 km (20 miles) from the individual sites and were on a different land-form. However, it could be assumed that the determination of color and structure is the same level of difficulty between any set of soil profiles. Therefore, with the TEAM scores being significantly higher for the categories of color and structure, the concept that working together as a TEAM will promote greater accuracy in soil judging is supported. Since texture did not show improvement in TEAM scores, perhaps developing a consensus of a horizon's texture is more difficult than color or structure.

It is interesting to note the schools with the highest individual score for texture at 78.1 and 73.4% finished one and two, respectively, in the overall school placings. The school with the highest score for TEAM texture finished 4th in the TEAM judging but 12th overall. For many years we have surmised that the contestants who do the best job of texturing soils usually are also doing the best job of writing the profile description, because the texture of the soil has a great influence on a significant portion of the scorecard. This was the case for the 2002 national contest.

RESULTS FROM SURVEY OF COACHES AND STUDENTS

After the contest, a survey for coaches and contestants was emailed to all coaches to distribute to the contestants. The responses were returned via email. Eleven of the 21 coaches

Table 2. Mean scores for individual totals for a team from three profiles and TEAM scores from two profiles.

Determination	Individual				TEAM			
	Mean	High	Low	SD	Mean	High	Low	SD
Horizons	55.9	64.0	49.6	3.6	74.6*	91.7	60.4	11.1
Textures	55.3	78.1	31.2	12.6	40.4*	90.0	16.7	18.5
% Clay estimate	51.8	71.8	26.5	12.1	49.2	83.3	16.0	18.9
Color	69.3	78.1	60.9	4.6	73.1*	88.9	58.3	6.9
Structure	63.5	74.2	56.2	4.8	71.3*	83.3	54.2	8.4
Soil profile characteristics	60.7	68.8	47.5	5.8	82.5*	100	62.5	11.6
Site characteristics	47.5	56.2	38.8	5.1	81.5*	100	62.5	10.4
Soil classification	42.4	50.8	33.0	6.0	84.4*	100	64.3	11.9
Site interpretations	58.4	70.3	46.8	6.4	57.5	87.5	25.0	18.4

* Significant at the 5% level.

(52%) and 22 of the 83 contestants (27%) returned the surveys. Items the coaches indicated they liked best about the contest included the following: the variety of soils and parent materials of practice pits, scheduled practice sites, organization of contest, interaction with students in the field, and a chance to have fun in the snow. Changes they suggested for the future included the following: have the student mixer earlier in the week, more interaction between teams, more geology information on practice sites, have the TEAM scores count more toward the total score, and make the contest open book.

Students indicated the things they liked best about the contest included the following: number and variety of practice pits, rotation of practice pits, two faces in contest pits, roomy contest pits, the chance to see new soil types, interaction with students from other schools, group judging, and the beautiful area around Red Wing. Things the students learned while at the contest included the following: what Mollisols look like, glacial parent materials and soil formation, team judging is more fulfilling than individual judging, Entisols can be in a national contest, soils in Minnesota are diverse, outwash and soft sandstone as parent materials, and team work.

CONCLUSIONS

The 2002 National Soil Judging Contest provided the opportunity for 84 contestants and alternates from 21 universities to learn about the soils of southeastern Minnesota. The 19 practice pits and five contest sites provided a unique look at Mollisols, Alfisols, Entisols, and Inceptisols formed in glacial parent materials, loess, colluvium, or bedrock residuum. The students liked the opportunity to learn about a region that is different from their home school and to interact with students from other parts of the country. Students generally did a better job of describing the soils in the TEAM judging when compared with the individual judging and found the TEAM judging experience to be rewarding. TEAM soil judging should continue to be a part of the ASA National Soil Judging Contest.

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