SUBJECT: Call for Proposals - Automated Sensing Technologies

TO: NTEP Evaluators and Others

FROM: Kevin N. Morris, NTEP Executive Director

DATE: March 18, 2003

Please find attached a Research Funding Proposal (RFP) investigating new technologies to improve NTEP data acquisition. The NTEP Policy Committee developed this proposal in an effort to standardize, mechanize and increase the accuracy of turfgrass data collection. Please note that the RFP has a rather short deadline, May 5.

If you have any questions or comments, please feel free to contact me (office 301-504-5125, fax 301-504-5167, mobile 301-873-6545, kmorris@ntep.org). Thanks!

CALL FOR PROPOSALS

National Turfgrass Evaluation Program/National Turfgrass Federation, Inc.

In an interest to improve the acquisition of National Turfgrass Evaluation Program (NTEP) variety trial data, the NTEP Policy Committee has initiated a call for funding proposals. A total of $30,000 is available to fund one or more proposals over the next 2.5 years. A proposal of no more than seven pages in length is due in to the Executive Director's office by May 5, 2003 (See Guidelines for more information).

The successful proposal(s) will explain how the prospective investigators will use research-based techniques to study the four (4) challenges presented below. Items 1, 2 and 4, must be addressed in order for a proposal to be considered for funding. Addressing item 3 is optional.

Proposals will be considered that effectively address the challenges below:

1. Determine which (how many) of the traditional NTEP trial performance parameters can be collected using automated sensing or derived from machine sensed data. Traditional performance parameters include turfgrass quality, genetic color, texture, density, uniformity, color retention, percent living cover, establishment rate, percent kill or damage from any number of pests or abiotic environmental stresses. If the depth of the existing scientific literature is such for some parameters that no additional basic research in sensing is required, provide a review of scientific literature to support this stance. Parameters collected by automated sensing techniques must ultimately be useful to the NTEP and its users for assessment of cultivar performance. Validation of any sensing methodology/equations using an independent data set, as well as an existing NTEP trial, is highly recommended.

2. Document the advantages and limitations that automated sensing offers over collection of data in NTEP trials by the traditional human evaluator. Determine differences in precision and accuracy present among datasets collected by the human evaluator vs. those collected using automated sensing technology. Provide a cost/benefit analysis as a basis for comparison of the two or more approaches as well.

3. Collection of nontraditional data may be possible with automated sensing technologies. If the investigator feels that these nontraditional performance parameters are important, present supportive information on why the parameters would be useful to the audience that uses NTEP data to make cultivar selection decisions. (Work on Challenge #3 is not a requirement of all successful proposals. Working on Challenge #3 should not be the main thrust of any proposal, although it can be a part of a successful proposal).

4. Using findings developed under objectives 1-3 coupled with the existing scientific and/or engineering technology literature base, develop Specifications/protocols for automated sensing of the useful turfgrass performance parameters. Equipment and software referred to in the Specifications must be commercially available. Specifications must be written clearly enough to avoid confusion, yet flexible enough to allow competitive bidding to

occur on products specified. Protocols for gathering data should be written such that they can be followed by the typical NTEP Official Trial Site Cooperator. Detailed specifications on equipment use, software employment, techniques and data conditioning must allow the user to output collected performance data in a format suitable for submission to NTEP in the traditional year-end data submission package. The specifications must clearly state applicability to warm and cool-season turfgrasses being grown in NTEP Trials and the type of trial (putting green, fairway/tee, lawn, overseeded fairway, etc) on which the sensing technique can be utilized. Manufacturers' suggested retail prices on suitable equipment and software cited in the Specifications is required, as is a list of equipment and software sources. Labor hours required to employ the techniques to collect and manage the various NTEP trial data packages should be estimated and included in the Specifications.

GUIDELINES FOR PROPOSALS

A. GENERAL

1. NTEP encourages the cooperation of turfgrass researchers, pest management scientists, economists, engineers and their respective university or experiment station statisticians on these proposals. Interdepartmental, interagency and/or interstate cooperation is highly encouraged.

B. RESEARCH FUNDING PROPOSAL FORMAT AND TIMETABLE

1. Please submit three (3) hard copies of the proposal (no more than 7 pages total) such that they arrive at the National Turfgrass Evaluation Program no later than 5 pm Eastern time on May 5, 2003. Only hard copies of proposals are acceptable; electronic/digital copies of proposals will not be considered for funding.

2. Proposal Format:

Page 1:	An 'Executive Summary' should be completed and accompany each copy of the proposal. Please consider this one page summary as the cover sheet of your proposal. Include the University/Agency name, proposal title, principal investigators name, and total of funding requested on this page.
Pages 2-5:	Up to 4 single-spaced pages with one (1) inch margins, and minimum font size of 10 points. Proposals should briefly review prior relevant work, outline the objectives of the project; research methodology; available research expertise and facilities; and results reasonably expected at the project conclusion.
Page 6 (or next page):	Project budget, which does not include funding for indirect costs (see Section 'C. Funding' below).

Page 7 (or last page): Brief one page biographical description of the Principal Investigator and research team members.

3. No proposals will be considered that arrive later than 5:00 PM Eastern Time, May 5, 2003, at the NTEP office.

4. Only hard copies (paper copies) of proposals will be considered for funding – do not submit proposals by email or on disk, CD or on any other magnetic media.

5. A decision concerning funding will be made in late June. Funding will begin July 1, 2003 with the first project year ending January 31, 2004. Subsequent project years will be February 1 through January 31, 2005 and 2006. Awards amounts will carry forward to allow use of unspent funds from previous funding years. Unspent funds at the end of the project shall be returned to the NTEP Program.

6. When a proposal is accepted for funding, this document (including the project budget) will become EXHIBIT A of the formal Agreement between the University or institution and the NTEP.

C. FUNDING

1. NTEP will fund research projects of up to $15,000 total for a maximum of two and one half (2.5) years total. No more than $10,000 of this funding will be administered to a project during the first contract year of the project.

2. NTEP project funding may be used for capital expenditures (equipment & software), faculty salaries, graduate student research support, graduate student tuition, technician salaries, and labor costs.

3. NTEP has a stated policy that it does not support overhead or administrative costs. The NTEP is a program of the National Turfgrass Federation, Inc., a not-for-profit 501(c)3 corporation. As such, it is vitally interested in providing the maximum direct support to research from available funds.

4. Please indicate if other agencies are committed to or are funding the same project. A letter from a local or regional funding agency is appreciated. NTEP responds favorably to project proposals where university, local or regional funding is contributed to the project.

D. LIMITATIONS - USE OF DATA

1. NTEP data may not be copied or transferred to any computer system or media that is not designated to perform the tasks stated in the proposal.

3. NTEP retains the rights to all datasets collected from any NTEP trials used in any approved project. These datasets may not be used for any other analysis or statistical review unless prior written permission is received from NTEP.

E. REPORTS AND ARTICLES

1. The university or research institution shall submit yearly research reports to the NTEP. These reports describing the research initiated, progress and research results will be due February 1 of each year.

2. At the conclusion of the project, a final report summarizing the entire project, including Specifications (see item 4 on page 1) will be due by February 1, 2006. The final report should include an executive summary not to exceed one page, plus materials and methods, results and discussion, conclusions, plus an extensive section on Specifications for Data Collection. The report shall be comprised of single-spaced, typewritten pages. Technical language plus lay terminology shall be present in the publication.

3. Any articles resulting from this research must acknowledge NTEP's contributions to the project.

Please forward hard copies of the proposals to the NTEP office at the following address. If more information or clarification is required, please contact Kevin Morris, NTEP Executive Director.

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