



**PROJECT TITLE: TRAFFIC TOLERANCE TESTING OF GRASSES FOR ATHLETIC FIELDS**

Rationale/Description of Problem:

A joint project between NTEP and the Sports Turf Managers Association (STMA), Safer Athletic Fields Environments Foundation (SAFE), this project evaluates traffic tolerance and performance of cool-season grasses used on athletic fields under *simulated football-type* conditions. There are many species, blends and mixtures available to turf managers but little information on their relative traffic tolerance and persistence under athletic field conditions. NTEP conducts traffic tolerance evaluations as ancillary evaluations of their official trials, however, the number of sites is very limited, blends and mixtures are not evaluated, and different species are not evaluated and compared, side-by-side, in the same trial. This project proposes to take the next step in athletic traffic evaluations, with more trial locations and comparative evaluations of species, blends and mixtures.

Objectives:

To determine the best cultivars, blends, mixtures and species for football traffic on athletic fields. We want to obtain specific information on establishment, color, density, traffic tolerance, recovery from traffic, disease and other problems. Our project is unique in being the only coordinated traffic tolerance trial, national in scope, covering broad geographic areas with extensive data collection.

Materials & Methods

Evaluation protocols and site selection will be jointly undertaken together by representatives of STMA, SAFE, university scientists, seed company representatives and NTEP, via an advisory committee. Eight university locations will be chosen to conduct this trial. The university locations will be chosen based on their geographical location, traffic equipment available, willingness to participate and their ability to conduct high quality trials. Trials will be conducted for three full growing seasons. Trial locations will be established in fall 2009, with traffic applied in fall 2010, fall 2011 and fall 2012. Plot areas will large enough to allow for uniform traffic application, based on the traffic simulator used at each location. Seeding rate for single cultivars, blends and mixtures will be determined in advance by the advisory committee on a square foot basis. Each entry will be replicated three times at each location.

For each season (8-10 week period in fall), traffic will be applied such that plots experience a 30% loss of ground cover by mid-season and a 70% loss of ground cover by the end of the season. The number of simulated traffic passes applied per week will be suggested by the advisory committee but ultimately, the cooperator at each location will need to determine the number of passes needed to achieve the above ground cover goals. The number of passes applied will be based on soil moisture, trial location, response from entries, weather, etc.

To simulate reseeding that typically is undertaken on athletic fields, one-half of each plot will be overseeded sometime after traffic is completed for each season. The same seed used for the original planting will be used in the overseeding. Details on overseeding methods will be determined by the selected cooperators and advisory committee members.

Soil moisture levels are an important variable in athletic traffic tolerance. Therefore, the advisory committee, in conjunction with the selected cooperators, will determine an appropriate measurement strategy to 1) document moisture levels before applying traffic, and 2) to develop a uniform policy for cooperators to follow in deciding when traffic should not be applied.

### Trial Specifics

The NTEP will function as the coordinating agent for this three-year trial. Trials will be conducted under mutually agreed upon guidelines, procedures and funding outlined in a research agreement to be drafted and signed by appropriate representatives of STMA/SAFE and NTEP. Trials will be conducted under the leadership of a university turfgrass research scientist (i.e. research cooperator), who has a faculty appointment. This person will sign a research agreement and will be responsible for establishment of the trial, coordination of the maintenance regime, collection and submission of the data to NTEP.

NTEP will solicit entries for the trial from sponsoring companies. Trials will be conducted with named cultivars and commercially available blends or mixtures. Various cool-season species used on athletic fields, such as perennial ryegrass, tall fescue and Kentucky bluegrass will be allowed. Experimental lines that will be released in the immediate future (i.e. before the end of the testing cycle) may also be included in this trial at the sponsor's discretion.

Trials will be maintained according to agreed upon procedures. Establishment and maintenance procedures will be based on recommendations set by an advisory committee consisting of representatives from STMA, SAFE, NTEP, universities and the turfgrass seed industry.

NTEP will administer the program and its funding, set the advisory committee and gather their input and recommendations for the trial. NTEP will organize and distribute the seed which will constitute entries for each trial location. NTEP will also provide maintenance and data collection protocols to each site, collect, analyze and disseminate the performance data in annual and final reports, and conduct an annual site visit of each trial site.

### Data Collection

The research cooperator will be responsible for data collection. Specific data collection will be defined by the advisory committee, however, most likely data collection will consist of turfgrass quality ratings, density, color, percent ground cover, recovery from traffic, etc. The research cooperator will be responsible for submission of data to NTEP by February 1 of each year. Annual funding will be based on receipt of a complete set of data by the February 1 deadline.

### Planting Dates and Funding

We propose that trials be established in late summer or fall 2009. Research cooperators will be paid a total of \$15,000 if all requirements of the research agreement are fulfilled.