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NTEP *Comings and Goings*

Dear Kevin,

In this issue of NTEP *Comings and Goings* we share some insights into NTEP data collection as well as a profile of two of our trial locations. Also, considering the heat and humidity suffered by many this summer, we offer help in locating data that may be useful in selecting improved grasses for seeding this fall.

In any case, if there is any information we can help you with, or if you have suggestions for future information needs, please feel free to contact us.

Volume 1, Issue 4
August 2010

NTEP Cooperative Efforts



NTEP trials are a partnership (part one of a series)

You may not be aware, but NTEP has been collecting turfgrass data for the past thirty years. In that time, we have seen species such as tall fescue and perennial ryegrass improve in quality and persistence many-fold. We have watched the breeding and development of seeded bermudagrass, such that their improvements move them much closer to the quality of vegetative cultivars. We have witnessed the insect resistance of endophyte-enhanced cultivars (on right in following photo):



We have seen fineleaf fescues go from this (in 1989):



to this (2009):



This level of improvement can be attributed to the toil and expertise of breeders and their staffs, however, NTEP and its evaluators have played a role in scrutinizing these grasses under varying conditions. And NTEP would not be able to provide the level of evaluation without their university evaluators, the support from the universities (and in some

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NTEP Trial location spotlight: Raleigh and Pinehurst, NC



Summer patch damage on a Kentucky bluegrass entry at Raleigh, NC - note entry on right with no summer patch



2007 NTEP bermuda trial at Raleigh, NC

NTEP visits its test locations to inspect their trials, talk to the researchers, address any issues or concerns they have, and offer advice and if needed, constructive criticism. On occasion, NTEP will decide to abandon a particular trial based on its condition.

Recently, Kevin Morris visited trial locations at Virginia Tech (Blacksburg, VA) and North Carolina State (Raleigh and Pinehurst, NC). In this section, we profile the Raleigh and Pinehurst, NC locations.

The Raleigh trials are located at the Lake Wheeler Road research center, just south of campus. The center conducts turfgrass research on over twenty acres, as well as research on other crops on the remaining acreage. Cultivar trials, management studies and chemical/disease/insect trials are featured at the center along with an expanding breeding program. The turf research was moved from an on campus location to this center starting in 2003. Much of the trial area is not flat, therefore, soil has been moved to create terraces in several places on the center. This makes this land much more useful for turf research. In-ground irrigation is available in much of the site and new equipment and facilities are being added.

The soil at the center is somewhat rocky and not particularly fertile. This is a challenge that the researchers and farm manager must deal with. However, this also makes for more stressful plant conditions. Due to significant weed pressure at the farm, the Principal Investigators (PI's) use methyl bromide soil fumigant before establishing NTEP trials.

Dr. Grady Miller and Casey Reynolds evaluate the NTEP trials at the center. Dr. Miller is a turfgrass extension specialist that has been at N.C. State since 2006. With Dr. Art Bruneau now retired, Dr. Miller has taken over all responsibilities for the NTEP trials. Casey Reynolds is a technician in the unit with some extension responsibilities. Casey previously worked for Dr. Bruneau, but now works for Dr. Susanna Milla-Lewis, a new turfgrass breeder in the turf unit. Casey collects much of the NTEP data. The center has a core group that conducts the day-to-day maintenance on the NTEP trials, per Casey and Dr. Miller's specifications and direction.

Currently, the Raleigh location hosts NTEP cool-season grass trials of tall fescue and Kentucky bluegrass, and warm-season grass trials of bermudagrass, st. augustinegrass and zoysiagrass. All of these species are used in the state, with its diverse climatic regions; tall fescue is the most popular species for home lawns while bermuda is the most popular choice for athletic fields. However, because of the summer stress, cool-season grasses suffer from heat and disease damage, while warm-season grasses occasionally suffer winter injury.



NTEP bentgrass trial at the Pinehurst resort

Bentgrass is the predominant species used on putting greens in North Carolina, however, summer heat and humidity take its toll on these grasses. To better address the performance of bentgrasses under the stress of golf course conditions, our latest bentgrass putting green trial was established in fall 2008 at the Pinehurst resort, on a new chipping and putting green. Maintained by the superintendent using the same management as the adjacent practice green, the green receives considerable use.

Thus far, the summer of 2010 has been warmer than average and some grasses have suffered (see photo below). It will be interesting to see the results of this trial at the end of this summer, and watch how the entries recover in fall and winter.

cases, state associations), financial support from breeders and seed companies, and facilities provided by USDA. Therefore, NTEP is a [cooperative effort](#) between many organizations and individuals.

Trial planning

Developing and implementing consistent evaluation trials takes planning, execution and follow-up. The process of establishing a new trial starts with an advisory committee, consisting of turfgrass breeders, seed company marketers and university evaluators. This group, working 12-18 months in advance of the trial initiation, uses its knowledge and experience to develop recommendations for the new trial. These recommendations include the trial locations, types of additional tests to run, maintenance levels and other details. Final approval of the recommendations, like [these](#) developed for the new perennial ryegrass trial, come from the NTEP Policy Committee.

The Policy Committee is akin to a board of directors for NTEP. Consisting of members from the turf industry and academia, the [NTEP Policy Committee](#) sets all policy and direction for the organization. [Members](#) of the Policy Committee are appointed for four-year terms by their respective organizations. These individuals volunteer for this duty to give back to their industry.

Seed submission, packaging & delivery

After the trial locations are identified and notified, information on the amount of seed needed to submit an entry, submission deadlines and entry application forms are developed. Seed companies scramble to harvest, clean and mail seed of entries to NTEP by a mid-August deadline. NTEP then scrambles to divide, package and mail seed entries to their evaluators within 10 days after submission deadlines. Seed must be delivered to evaluators in late August to ensure planting by most locations in September.

Vegetatively propagated grasses

Vegetatively propagated warm-season grasses are handled differently than seed entries. NTEP receives the vegetative entries from sponsors in plastic trays of 3" plugs. NTEP then grows all entries in their greenhouse, fertilizes, inspects them for diseases and insects, and generally ensures their health before shipping to evaluators. NTEP also grows all standard entries (those well-known grasses selected for comparison).



Performance differences among bentgrass entries in Pinehurst, NC



This is time-consuming and labor intensive process that is necessary to ensure that all locations receive consistent and healthy plant material of each entry.

Trial establishment

After seed or vegetative entries are mailed, evaluators work quickly to plant the grasses. However, evaluators have already spent considerable time and effort in preparing the test area; spraying (in some cases fumigating), rototilling, leveling, fertilizing, etc. to develop a uniform trial site.

When received, each entry is divided into three groups (or replications - more about that later) and are planted. Entries are planted in plots 25 - 50 sq. ft. in size. For seeded entries, evaluators and their staff normally use some type of planting box (see photo below) to ensure that entries do not move from their plot.



Often, a fabric cover is placed over the newly seeded trial to protect against seed movement during watering or rain.

Next month: trial maintenance and applying stress

Find that NTEP data you need to restore your turf areas



In many U.S. locations, this year's summer is one for the record books. Record high temperatures, coupled with stretches of drought and/or high humidity have left many lawns and other turf areas in dire need of repair. If you are looking for that disease resistant, drought tolerant turfgrass, NTEP has information that you can use.



For instance, if brown patch (*Rhizoctonia solani*) has thinned your tall fescue, NTEP has data that demonstrate cultivar differences. [Data from the newest tall fescues](#) (collected in 2009) or [four years of summarized data](#) from our last complete trial can help in identifying better brown patch cultivars. Complete data summaries on turf quality, color, density and other characteristics can be found [here for the most recent year](#) and [here for previous years and trials](#).

Damage from heat, drought, diseases and other summer stresses can combine to wreak havoc on lawns. NTEP has data on lawn type maintenance from recent trial data of [perennial ryegrass](#), [Kentucky bluegrass](#) and [tall fescue](#). One may also consider information from completed trials, like the [2000 Ky. bluegrass test](#), as these trials offer data summarized over several growing seasons. If a lower maintenance species is desired, maybe the [fineleaf fescues](#) should be considered.



For data from a specific state, go to our [state page](#), click on your state and see the trials and locations listed for review. In some cases, your state may not have evaluated a particular NTEP trial, therefore, find an adjacent state that has. In some cases, you may need to consult a location in a neighboring state that has a similar climate.

Please remember to apply the Least Significant Difference statistic (LSD Value) when evaluating data. A guide to using the LSD can be found [here](#).

Thanks for reading again, in this issue about what is happening at NTEP. If you have any questions, comments or suggestions, please feel free to contact me at 301-504-5125 or kmorris@ntep.org.

Sincerely,

Kevin Morris
Executive Director
National Turfgrass Evaluation Program

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