



>> **Figure 1. ROOTING BOXES** were installed on the day of sod installation.

Alternative sod installation timing to extend the growing season in the Northeast

THE NEED FOR TURFGRASS ESTABLISHMENT can come in many forms; new construction, a playing surface conversion, upgrading to newer cultivars, intense athletic field use, etc. However, the options and opportunities for establishing cool-season turfgrasses on athletic fields are limited. The very short amount of time that is available to prepare a traffic tolerant turfgrass stand before field use, particularly fields that supports spring, summer, and fall sports, can be extremely challenging. Additionally, given the popularity of fall

and spring sports, time periods considered optimal for establishing our cool-season friends are also typically periods of peak field use.

Establishment of athletic fields in the Northeast United States is further complicated by the slow germination and

development of Kentucky bluegrass. Therefore, many fields are established using sod. Sod provides instantaneous turfgrass cover and minimal weed competition, but obtaining sufficient root development prior to field use is a problem which can result in excessive divoting and

poor playing surface quality, such as poor traction and an uneven playing surface.

ONLY CHOICE SPRING?

Depending on the sport that is played, athletic fields in the Northeast United States are typically used until late Novem-

Late fall installed sod produced similar or higher rooting strength in May of the subsequent growing season compared to rooting strength values in August



>> **Figure 2. A ROOTING BOX** following extraction from a covered December sodded treatment, April 2007.

ber/early December, leaving the spring as the primary turfgrass establishment time of year. Unfortunately, this is also a time when many athletic field managers are pressured to open fields for use by those participating in spring sports. Early season field use and non-optimal environmental conditions of the early summer months can make turfgrass establishment difficult during this critical period. Success of a conventional sod installation and subsequent root development depends heavily on a number of different factors such as environmental conditions, matching the soil texture on the sod to your site, the condition of the sod (i.e., amount of thatch, time from harvest to installation, soil depth uniformity, etc.), soil nutrient levels, soil pH and time.

Time, the factor that's probably the most predictable, but unfortunately often times is the most difficult to control given the amount of scheduled field use. Assuming good environmental conditions, high quality sod, and proper soil fertility, 6-8 weeks from installation to field use would be a desirable, estimated timeframe for sufficient rooting to produce a quality playing surface. However, a timeframe of that magnitude is very difficult to obtain on a field that is traditionally heavily depended upon to support many athletic activities.

The difficulty remains in identifying low/no use time periods for turfgrass establishment. For those in the Northeast, I think many would agree from December through March could be labeled a low/no use time period. Research was initiated in 2005 at the University of Connecticut Plant Science Research and Education Facility to determine if there were any potential benefits or hazards related to late fall sod establishment in the northern region.

The objective of this research was to quantify the effect of sod installation timing on the rooting strength of Kentucky bluegrass. This study looked at four sodding dates (December 2005, May, June, and July 2006) with anticipated field use in early August 2006, simulating a typical field renovation or new construction that may occur. The May 2006 date served as the control, which would be considered a typical spring establishment date. The December 2005 sodding date had a covered treatment and an uncovered treatment. The covered treatment was covered from 2 December 2005

until 6 April 2006 with green Evergreen turfgrass cover (Covermaster, Inc. Rexdale, ON).

Sod was harvested from a local sod farm and then installed on the sandy loam soil at the research site. Sod rooting strength was determined using rooting boxes that were installed beneath the sod (Fig. 1). The peak force required to extract each rooting box was recorded (Fig. 2). Root pulls were conducted monthly to assess root development over time; May, June, July, August 2006. The study was repeated the following year. During the second year of the study, root pulls were conducted in April, May, June, July, and August 2007.



>> **Figure 3. DECEMBER COVERED TREATMENTS** exhibited higher color ratings through the month of April during 2006 and 2007. Note the uncover December sodded treatment located between two covered December treatments, April 2007.

RESULTS

Sod installed in December consistently increased rooting strength over all other sod installation dates indicating a considerable advantage to late fall sod installation for more extensive root development throughout the subsequent growing season. Additionally, during both years of the study late fall installed sod (December covered and uncovered) produced similar or higher rooting strength in May of the subsequent growing season compared to rooting strength values in August. This suggests that athletic fields established in December may be ready for play in May of the next year. Based on the differences produced using the turfgrass covers, between year 1 and year 2, if spring athletic field use is anticipated and/or maximum root development is desired the newly sodded field should be covered from the sod installation date until shoot growth begins in the spring. The turfgrass covers will also ensure better turfgrass color early in the spring (Fig. 3).

This primarily benefits athletic field managers that have intense field use in the fall coupled with spring and early summer athletic field use the next year. The primary increase in rooting strength in the 2006-2007 study occurred from April to May in both the December and December covered treatments (Fig. 4). These data suggest that if spring installation is imperative, establishing sod as early as possible in the growing season is essential to enable the turfgrass to produce the highest possible rooting strength prior to fall athletic field use. In both years the study was conducted, sod rooting

strength was constant or decreased from June through August, indicating that very little root development occurs from June through August. Very few increases in rooting strength occurred from May to June, indicating that installation by early April would be highly desirable.

Late fall sod installation is an attractive alternative to traditional spring sod installation for three main reasons: 1) sod rooting strength will be considerably greater than spring or early summer installed sod throughout the growing season, 2) the greatest root development occurs fairly early in spring (i.e. April to May) when sod installations are typically difficult due to wet soil conditions, busy contractors, or anticipated athletic field use, and 3) based on the rooting strength data collected, athletic fields established in early December will likely be ready to use in May of the next year. The primary advantage to late fall sod installations is having the ability to re-establish an athletic field during a time when typical field use is minimal.

A more comprehensive form of this research has been published in *Applied Turfgrass Science*, an online journal for applied turfgrass science professionals.

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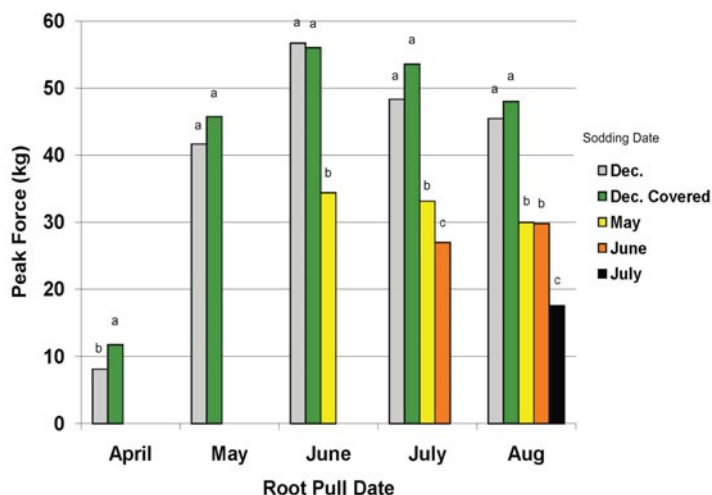


Figure 4. ROOTING STRENGTH of Kentucky bluegrass in relation to sod installation and root pull dates, 2007. Means within a root pull date followed by the same letter are not significantly different ($P < 0.05$).

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