or hand held grinder. The larger diameter wheel provides a more appropriate bevel to the blade. The slower rotation speed and courser textured wheel help to maintain blade temper by minimizing heat and as such minimize blade wear. In addition to maintaining a sharp edge, blades should periodically be checked for balance and trueness. There is nothing more obvious on an otherwise well manicure field than either dull blades or a bent blade. I know of businesses that sharpen blades every day. I would recommend sharpening every sixteen to twenty hours of use. Under no circumstances would I allow blade sharpening to go more than once per week under normal use.

In addition to blade quality the mower deck should be cleaned. Accumulation of clippings under the mower deck interferes with proper airflow, clipping discharge and quality of cut.

In order to optimize efficiency when mowing, I typically choose to maintain common ground at a higher height of cut thus allowing for a once per week mowing frequency while mowing the playing areas lower and more frequently. This only works if the mowing height of your machine can be adjusted efficiently without too much down time. On one site in particular due to budgetary restraints I was mowing the entire complex on a 4 – 5 day schedule in an attempt to keep the playing areas under control. At this mowing frequency I was unable to maintain the mowed height of the playing areas at 2.5" without excessive clipping accumulation. For this reason I started mowing the playing areas on a 3 – 4 day schedule at 2.5" and extended the frequency on the common ground to once per week (every other mowing of playing areas) while increasing the mowed height to 3.5". I managed to maintain the same number of man-hours per month, keep costs within the budget and increase the quality of the playing areas. The common areas showed little change in quality. If anything the common ground improved in quality and appearance due to reduced turf stress and less clipping buildup.

I believe turf maintained at a higher height of cut will maintain better density and quality as long as the 1/3 rule is followed, than would turf maintained at a lower height of cut while not following the 1/3 rule.

For me, a ¼" mowing height adjustment dictated by varying environmental conditions in combination with slight modifications to the mowing schedule have proven to be the greatest asset in maintaining a quality athletic turf. In order for this strategy to work mowing must be a priority in your work schedule.

If you are like most and maintain your athletic fields within a five-day workweek, you are limited in scheduling options if you intend to mow on a 3 or 4-day schedule. First, save Wednesday as a rain day. Monday & Tuesday, Thursday & Friday are mowing days. If you mow on Monday, you can either mow Thursday or Friday. If you mow Tuesday, you are limited to your follow up mowing being Friday, If you mow Thursday you are limited to your next mowing being Monday. If you mow Friday, you can either mow Monday or Tuesday.

"Tricks of the trade" **for maintaining the appearance and playability of your turf**

when mowing on a 3 – 4 day schedule**.**

1. Prioritize between playing areas and common ground.
2. Watch the weather reports and vary your Monday – Tuesday or Thursday - Friday mowing day based on the forecast
3. If growth patterns allow, you can lower the height by ¼" on the 3 day cycle to gain some wiggle room in the schedule
4. If you mow in the rain, or when the grass is excessively wet, you can raise the height ¼" to minimize clumping and lower it back on the next 3 day cycle
5. If clippings start to accumulate you can mow 3 consecutive 3-day cycles to help eliminate excessive clippings. (Tuesday, Friday, Monday, Thursday.) In this situation you would have to mow the following Monday to maintain a maximum of 4 days between mowings.
6. If you miss a day, raise the height ¼" the following day and lower it back on the next normally scheduled mowing day.
7. As growth slows later into the summer and again in late fall move to a 4 – 5 day schedule by mowing Friday, Wednesday, Monday, Friday (in that order). It's the only way to maintain a 4 - 5 day mowing schedule without mowing on the weekend. Only every other week requires two mowings, providing substantial labor savings while maintaining turf quality.

Regardless of what type of turf you maintain, when it comes to mowing management, "the proof is in the putting".

*Jim Hermann is President of Total Control Inc., Athletic Field Management and Consulting. ◆

Don't Miss the 2004 Rutgers Turfgrass Research Field Days!

by Brad Park, Rutgers University
park@aesop.rutgers.edu

The 2004 Rutgers Turfgrass Research Field Days - "The Finest Programs in the World" – are an annual highlight on the calendar of events sponsored by the New Jersey Turfgrass Association and the Rutgers Center for Turfgrass Science. The Lawn and Landscape Field Day will be held **Wednesday, July 28, 2004** at the **Adelphia Research Farm**. Registration will begin at **8:00 am** and the first 50 registrants will receive a free cap. Presentations will be given on a wide range of topics including turfgrass species that are commonly utilized on New Jersey sports fields and the latest weed control programs and products. Research plot tours will conclude at 3:00 pm.

The Golf and Fine Turf Research Field Day will be held on **Thursday, July 29, 2004** at **Hort. Farm II – Ryders Lane** in North Brunswick, NJ. Registration will begin at **8:30 am**. Tours will end at 3:00 pm.

A separate $35.00 fee (includes lunch and morning coffee) will apply for each day, but those who wish to attend both Field Days may do so. **Pesticide recertification credits will be offered on both days.** For additional information please call Dick Caton 856-853-5973; or Marlene Karasik 732-932-9400 x 339.

Also, it's never too early to mark your calendars for the **New Jersey Turfgrass and Landscape Expo 2004**. Expo 2004 will be held **December 7,8, and 9, 2004** at the Trump Taj Mahal Casino-Resort in Atlantic City, NJ. ◆

continued from page 5

soils, and therefore will have the effect of neutralizing acidity more quickly than a coarser grade lime source.

Burned lime and hydrated lime are other liming sources. These materials are not generally recommended for use in turf because of their caustic properties for applicators and their potential to cause burn on turfgrasses.

Calcium carbonate equivalent (CCE)

The lime requirement given in the soil test results by the Rutgers Soil Testing Laboratory and other labs is based on the use of pure calcium carbonate, which is assigned a relative neutralizing value of 100%. Therefore, a liming material that has the same neutralizing potential as pure calcium carbonate is said to have a calcium carbonate equivalent (CCE) of 100%. If, however, the CCE of the liming material chosen does not have a CCE of 100%, the amount of material to be applied must be adjusted to raise the soil pH to the desired level.

For turfgrass sites, lime requirements made by the Rutgers Soil Testing Laboratory are based on pounds of limestone (CCE=100%) required on a 1000 square foot basis necessary to raise soil pH to 6.3.

Based on the CCE of the material being used to lime a turfgrass area, the amount of material needed can be calculated in the following manner: Liming material needed = (Soil test recommendation/CCE of liming material) X 100

Tying it all together

An example of a soil test recommendation for the establishment of a sports field based on a determined soil pH of 5.35 is as follows:

The soil test indicates a strongly acidic soil, of which the pH is below the best range for the growth of most turfgrass. This soil should be treated with 95 pounds per 1000 square feet of limestone. Spread uniformly on the surface, then mix thoroughly to a 6 inch depth by shoveling or tilling.

In the case of this example, if the liming material available for use has a CCE of 85%, then the actual amount of material needed to be applied per 1000

square feet based on the lime recommendation is: (95/85)X100 = **112 lbs** liming material per 1000 square feet.

In the case of established sports fields and other turfgrass sites, lime requirements are often specified such that the amount of lime required is applied over multiple applications.

Literature cited

Carrow, R.N., D.V. Waddington, and P.E. Rieke. 2001. Turfgrass soil fertility and chemical problems. Sleeping Bear Press, Chelsea, MI.

Landschoot, P. 1994. Liming turfgrass areas. Penn State Col. Of Ag. Sci., Ag. Res. and Coop. Ext. Extension Circular 415.

Murphy, J. and J. Heckman. Managing soil pH for turfgrasses. Rutgers Coop. Ext. FS 635.

Plaster, E.J. 1992. Soil science and management. Delmar Publishers, Inc., Albany, NY.

**Brad Park is the Sports Turf Research & Education Coordinator for the Department of Plant Bio/ Pathology, Rutgers University* ◆

Turf-Tec Digest
For Golf Course Superintendents and Sports Turf Managers

By: John MascaroVolume 10 Number 2 – July 2004

Diagnostic tests and you.

There are a lot of Infiltrometers out there that you people have purchased and let's face it; some of you are letting them get dusty. I have a vision I would like to share with you. Diagnostic tools are not for the superintendent. They are designed for the assistant superintendent. They are a learning tool for the assistant and a way to find out the soil health for the superintendent. The ideas behind the tools are to give the superintendent real number to base cultural as well as financial decision upon.

The superintendent should have a schedule of diagnostic tasks that the assistant superintendent should do and then create a report to give to the superintendent.

A sample schedule would be as follows:

Daily: Moisture Sensor Readings – to be done by the irrigation technician and readings presented to assistant superintendent. The moisture sensor readings should be done at the one, two, three and four inch level in three different areas on each turfgrass area. In addition if any discolored areas are seen, they should be checked and recorded. These reports should be reviewed by the assistant and a summary given to the superintendent.

Monthly: Infiltrometer readings – These tests should be performed by the assistant superintendent and the final report should be given to the superintendent.

Monthly: Penetrometer readings – These tests should also be performed by the assistant superintendent and the final report should be given to the superintendent.

I have created an Excel Spreadsheet that contains all the necessary information to fill out. The file can be downloaded and the pages printed out, taken into the field on a clipboard, filled out by the assistant and then the data can be entered into the computer. The program will automatically calculate the average of all areas tested.

To view the page about the spreadsheets, go to

http://www.turf-tec.com/Download.html

To directly download the Excel spreadsheets,go to

For Golf Course Superintendents:

http://www.turf-tec.com/Excel/Golf-Tests.xls

For Sports Turf Managers:

http://www.turf-tec.com/Excel/Sports-Tests.xls ◆

Rutgers October Sports Turf Workshop 2004

By Brad Park, Rutgers University
park@aesop.rutgers.edu

Rutgers University will be hosting a Sports Turf Workshop in cooperation with Sports Field Managers Association of New Jersey on **Thursday, October 7, 2004** at **Hort. Farm II** in **North Brunswick, NJ**. Highlights of the day will include field tours of turfgrass traffic tolerance research and variety trials and the opportunity to receive pesticide credits. Lunch will be included with registration.

Keep an eye out for a promotional flyer in the mail and a schedule of events including a start time in the next newsletter.

'Sports Turf Drainage'

by Dr. James A. Murphy, Specialist in Turfgrass Management

Adequate drainage is essential to maximize field use, minimize maintenance problems and provide a desirable environment for turfgrass growth. The main idea in planning drainage is to protect the playing surface from excess water. Many fields attempt to accomplish this by surface flow (drainage). Catch basins and surface inlets (vertical drains) are used around the perimeter of the field to move the excess water away.

Techniques used to protect the root zone from becoming waterlogged include subsurface pipe to intercept a rising water table and vertical or slit drainage (shallow and very close spacing). High sand content root zones work quite well since the depth of the root zone aids in displacing the soil interface deeper so that saturated conditions would mostly occur well below the depth of turf rooting. Root zones constructed from native soil (often problematic) work by encouraging surface runoff (centerline to sideline paths for water flow off field).

Both internal and surface drainage must be considered. Good internal drainage allows excess water to move out of and away from the surface layer where it could be a problem. Surface drainage is sufficient when excess rainfall can runoff the surface layer. Turf areas with minimal surface drainage require high infiltration and internal drainage.

Good surface drainage requires a slope of 2% (1 foot fall over 50 feet). A 1% slope can be effective; however, any imperfections (depressions) along the run of the slope will likely pond water under high rainfall. When surface drainage is inadequate and internal drainage can not removed the

continued on page 17

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continued from page 15

excess water, vertical drains are necessary to remove the surface water.

Cross drains and perimeter drains are two types of vertical drains. Cross drains are a corrective action used when adequate surface drainage does not exist. Cross drains are placed directly on the playing surface to prevent water from accumulating and running to low portions of the playing surface. Cross drains can be as simple as silt trenches filled with a uniformly sized coarse sand or fine gravel, or prefabricated drains within the trenches. To be effective the trenches need to be open to the surface, thus the trenches should be back-filled to the surface with a readily draining material (i.e., sand, fine gravel, etc.). Covering with a finer-textured soil will seal off the trenches. Slit trenches of various widths and depths have been used successfully to improve surface water conditions. Typically, the trenches are no more than a couples inches in width.

Perimeter drains are placed outside the playing field areas to collect surface runoff (surface inlets) and move the excess water away. Cross drains may be connected with perimeter drains to the direct excess water away from the field.

Subsurface drain tiles are used in fine- and medium-textured soils to lower a water table that is too near the playing surface. Very wet (saturated) soil conditions must exist before water will move from the soil into the drain tile. Therefore, placing drain tiles at hallow soil depths will do little to create drier soil conditions. ◆

Fall Field Day Registration Form

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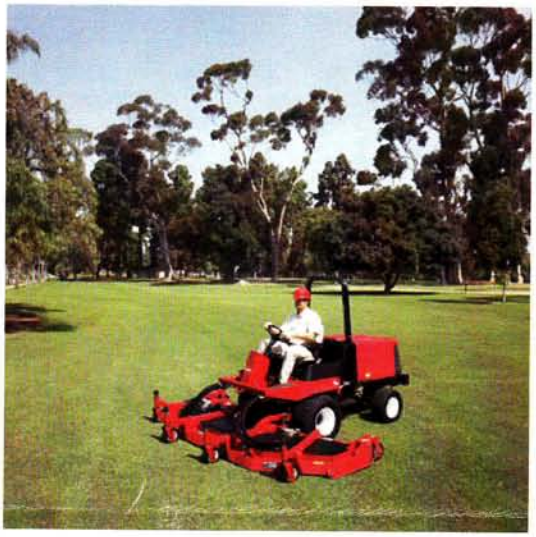

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