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Analyzing Your Records — What Worked? What Didn't?

By Dr. Gil Landry

The demand to do more with less is a fact of life in the turfgrass industry. The best way to cope with increasing pressures to produce better results, despite limited resources, is to increase the efficiency and effectiveness of your programs.

Change always starts with analysis. Establishing and maintaining a comprehensive record-keeping program gives you the data to analyze. While a good manual record-keeping system can be effective, computers make record keeping faster and easier, and provide rapid access to data. Whatever system you choose, systematic, accurate data entry is an essential part of the process. Let's face it — good records show professionalism.

Sports turf management is a complex job in part because maintenance procedures are impacted by field use and weather conditions. The better your records of all three of these components the easier it becomes to evaluate any interactions and make adjustments for next year's field maintenance program.

Establish a Baseline

A good sports turf management record-keeping program begins with complete data on the areas to be maintained. If you haven't done so already, develop a map or grid layout of all the areas within your program. This may be a simple series of blocks on the computer screen with maintenance areas highlighted or lines drawn out on the developer's plot plan for your facility or an enlarged version of a city map.

Then sketch out each individual area and note the pertinent details of each specific area. For example, the maintenance areas might include stadium surrounds, a sand-based turfgrass game field, multiple native soil or amended native soil outdoor turfgrass practice fields and an enclosed artificial-surface practice field. The landscaped area surrounding these fields, the parking lots, and the buildings also could be within the maintenance program.

In this example, the high-wear areas of each of these fields would receive a higher level of maintenance than the lesser-used portions of the fields. The sand-based, amended-soil and native soil fields also would have different maintenance plans. General turf within the landscape, the trees, shrubs, flower beds and other landscape features would have still different maintenance needs.

Once you have a complete picture of your maintenance areas, the different categories or levels of maintenance become more obvious. The overall maintenance program would then include adaptations to accommodate the needs of the different categories.

Some sports turf managers assign a number or letter of the alphabet to each different maintenance category and refer to those letters or numbers when making crew assignments. The landscape turf might be category G, the lesser used areas of a practice field category E, and the high-wear areas category D. Crews might be asked to aerate D and E, but only to overseed and topdress D.

Track Data

Use the basic grid to track your maintenance program. Records need to cover such basics as what you did, and when and how you did it. For example, your crews applied fertilizer to the football game field in early August. At a minimum, your records would indicate:

- the specific area where the material was applied (which field and what part of that field);
- the date and time of application;
- the authorized (and licensed if need be) crew member who made the application;
- the specific product applied — including the manufacturer name, product name and product formula (such as 10-18-22 for a fertilizer product);
- the rate of application (including the pounds of N, P and K applied per 1,000 square feet for a fertilizer product).

Recording additional information gives you more pieces of the puzzle. Such details should include:

- the condition of the field prior to application,
- weather conditions at the time of application (wind speed and direction, temperature, humidity level, or evapotranspiration [ET] readings if you have them),
- pre- and post-application procedures,
- pre- and post-application irrigation details (timing of irrigation cycles, amount of water applied, and at what rate).

Ideally, you'll have daily ET records for review. If not, consider recording the temperature, humidity level, prevailing wind conditions and precipitation amounts (including when that precipitation occurred and if it fell as rain, snow, sleet) on your daily calendar. Do note at least the temperature low, high and average for the day.

Keep records of pre- and post-game procedures. Here, Don Follett paints a center-field logo at the Washington Redskins' new Jack Kent Cooke Stadium. Photo courtesy: Trusty & Associates.

You'll also want to record field-use schedules including who used which field when, how long and for what. Here again, the more complete the records, the better. Obviously, a peewee soccer team practicing on the field for two

At a minimum, record where materials were applied, who applied them, the time of application, the specific product and the rate.

hours on a rainy Saturday morning will produce less damage than a high school or college team practicing on the same field during the same time period.

Add your own assessment of field conditions to your records: the percent of turf cover, turf density and color, and the amount of clippings being cut. You may be making field checks daily, weekly or bi-monthly, depending on the number of fields in your maintenance program. At each field check, you develop an assessment of actual conditions compared to your expectations. Develop a simple ranking system (such as 1 to 10) to correspond to that assessment and note the ranking in your records.

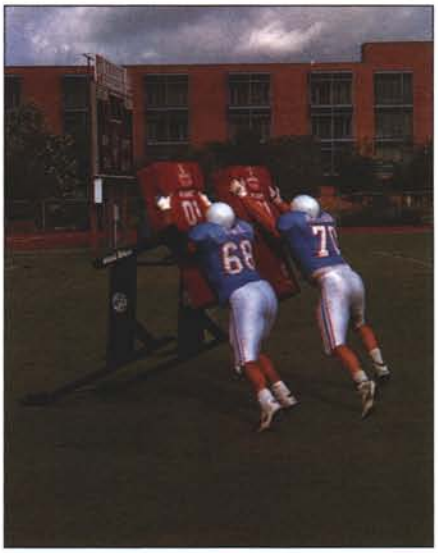
Analyze Your Records

Tracking all this information will give you some fairly definite patterns that will help in analyzing your maintenance program. You'll be able to determine that overseeding by date X produced playable turf by date Y under certain weather conditions. Additional aeration between the hash marks of the football game and practice fields kept the turf in good shape throughout the season. The fertilization skipped because of a tight budget showed up in reduced density on the heaviest wear areas of the fields.

Also note the exceptions to expected patterns. Determine why the exceptions occurred.

For example, in a parks or school system maintenance program, the fields used primarily by the younger players should have better turf conditions at the end of a sport's season if the type of soil profile, types of turfgrasses and irrigation systems are the same and the initial field conditions, level of maintenance and use schedules are comparable.

Suppose the turf of one field out of 20 youth soccer fields doesn't fit these expectations. You'll need to compare all the possible variables to find out why. Maybe this is the corner field in an open complex with greater exposure to wind so it dries out more quickly. Maybe it has a slightly greater elevation than surrounding areas and rainfall runs off before it penetrates the soil. Maybe this is the field nearest the parking lot, so most of the players and spectators walk over it on their way to and from other fields, increasing compaction problems.



In your field-use schedules, record who used which field when, how long and for what. The more complete the records, the better. Photo courtesy: Mike Schweitzer, Trinity University.

Specific sections of certain fields also may vary from the overall pattern. The turf in a corner section of a stadium-enclosed game field may have less density and less root development than the rest of the field. Maybe the shadow cast by the stadium keeps this turf shaded longer than the rest of the field. Air movement in that corner may be restricted, or it may be greater than in other areas of the field. Maybe the cheerleaders cluster in that area during especially hot or cold weather.

Changes in weather conditions or in field-use scheduling may alter the expected patterns of specific procedures in some, or all, of your fields. Maybe baseball team practices started a week earlier last spring, giving the turfgrass from the previous winter's dormant seeding less time for establishment. Maybe heavy rains during the last two football games of the season caused more damage than could be repaired before winter snows started. Maybe a soccer tournament was moved to your fields because of poor conditions elsewhere, resulting in a tighter schedule for your major renovations.

Determine what patterns need adjustment to conform to next season's budget and play schedules. Decide which pattern variations are one-time events and which have a long-term impact that should be and can be corrected.

Once your analysis is complete, not only will you know what worked and what didn't, you'll have the tools to minimize your failures and build on your successes, including a written summary report you've developed for future reference. ❑

As extension turfgrass specialist with the University of Georgia, Dr. Gil Landry provides leadership in the development of statewide educational programs in turfgrass management. He's a past president of the national Sports Turf Managers Association, co-chair of the Public Relations Committee, and recipient of STMA's highest award, the Harry C. Gill Memorial Award: STMA Groundskeeper of the Year.