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of plant growth regulator applications.

● Because plants and insects share this heat-related phenomena, field observations of plant activity can also help determine insect and weed activity. For example, pre-emergence crabgrass control can be applied when the bridal wreath spirea (*Spiraea x vanhouttei*) blooms. In this case, the bridal wreath spirea is an indicator plant for the conditions of crabgrass germination.

We have a garden of indicator plants growing on the golf course, and next season we will make comparisons of DD values versus indicator plant responses.

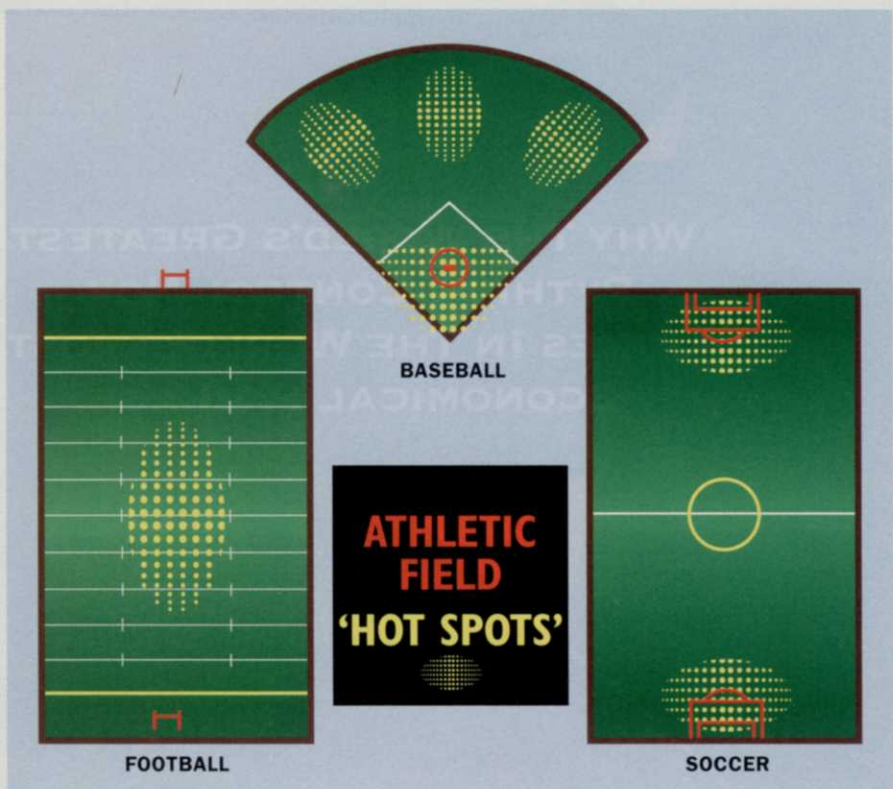
Disease control—This weather station has three prediction models for turf diseases: pythium blight (*Pythium aphanidermatum*), brown patch (*Rhizoctonia solani*) and dollar spot (*Lanzia & Moellerdiscus* spp.). The predictive models, based on complex mathematical calculations, are used as indicators of favorable environmental conditions for disease.

They do not account for inoculum pressure, species or cultivar resistance to disease, fertility or future weather (environmental) conditions. Ultimately, the turf manager makes the decision on disease pressure versus needed controls.

What's to come—Considerable work is still needed to establish historical databases for weather data and to accumulate field observations that relate to it. More disease models must be constructed. Degree-day models need to be calculated for other pests as well as for beneficial insects. "Home grown" research based on collected data coupled with field observations is needed. We are looking at soil temperature readings to help fine tune the timing of green cover applications, day length and how it may affect plant responses, solar thermal units to further refine degree units, and soil temperature versus root growth.

The uses and applications are limited to your imagination. That's what makes the weather station an exciting tool.

—The author is superintendent of grounds at North Shore Country Club in Glenview, Ill.



Managing athletic fields for specific use patterns

Save money by localizing your maintenance areas, this expert tells the STMA.

■ You can maintain an athletic field with less than \$1,500 a year in materials, if necessary, says Dr. Henry Wilkinson of the University of Illinois.

Wilkinson, speaking at the Sports Turf Managers Association's annual conference in Florida last month, said, "In general, the greater the shear force, the higher the cost of maintenance." That means that football fields—especially on the professional level—are the highest maintenance, followed by soccer, baseball and softball fields, respectively.

Maintenance factors which influence field safety, playability and appearance are, in order of importance:

- 1) selection of turfgrass species
- 2) irrigation
- 3) mowing
- 4) fertilization
- 5) use patterns
- 6) damage repair

- 7) aeration
- 8) pest management

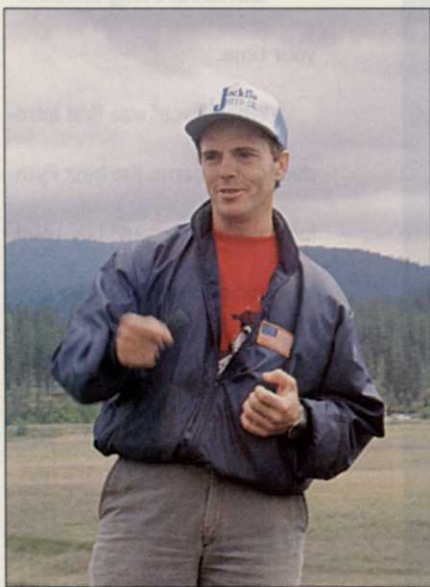
"Sports fields do not need uniform maintenance," Wilkinson told the group. "Certain areas need more maintenance than others." For instance, the areas of highest use (and, thus, maintenance) are:

- **Football fields:** between the hash marks, from 30-yard line to 30-yard line
- **Soccer fields:** in front of the goal mouth
- **Baseball/softball fields:** around home plate, the pitcher's mound and the three areas where outfielders normally stand

Just as use areas vary, you should vary your maintenance patterns for cost-effectiveness. "If you manage a football field for the borders, the center won't last," Wilkinson said. "Likewise, if you manage for the center, you're over-managing the borders. So if you can localize your maintenance, you can afford to do more."

Wilkinson offered these tips for low-cost athletic field maintenance:

- 1) Look for wear-tolerance in the high-use seasons when you select grasses.
- 2) Water the entire rootzone, and don't



Dr. Henry Wilkinson suggests 'don't guess' when it comes to irrigating your athletic fields.

guess. Established turf will take about one inch of water per week.

3) Mow regularly, and in non-use areas, raise the cut 1/2-inch.

4) Do not collect clippings.

5) Fertilize as needed, and lower the amount you put down each application. In general, 2 to 3 lbs. of N per year per acre should be sufficient.

6) Use creative encouragement to vary use patterns. Tell the people that are using the fields to try and spread their use, and offer to show them how.

7) Aerify high-activity areas more. Aerifying should be done at least once a season during cool, growing periods.

8) Repair damaged areas only. During the off-season, repair by seeding; in-season, you almost have to use sod.

9) Use soil conditioners when you make repairs.

10) Generally, pest management will be limited to insect control, and only when insects reach a point where they are actually damaging the turf.

Using his recommendations, and figuring the normal football/soccer field as being 1.4 acres and the normal baseball field as 1.6 acres, Wilkinson came up with these minimum costs to maintain a field for one year:

| | Football | Baseball |
|---------------|----------|----------|
| Fertilizer | \$210 | \$240 |
| Aerification | \$550 | \$600 |
| Pest mgmt. | \$95 | \$106 |
| Damage repair | \$200 | \$200 |

—Jerry Roche

Working with volunteers takes a special effort

Volunteers claim a facility as their own. You reap the rewards of their work and their pride in the community's facility.

by Mike Calhoun

Today's limited budgets, combined with increased use of sports and recreational facilities, force us to seek ways to do more with less. One option is to work with volunteer groups to extend the scope and efficiency of your programs with little added cost.

Opening volunteer programs to just anyone can lead to disappointment when "helpers" need too much supervision or simply are unable to do the job. So you must decide what you want to accomplish, the level of expertise needed, and standards of ability and experience that are acceptable.

Tap into the resources of the people you'd like to volunteer. First, identify the target groups and their key interests. For instance, seek out horticultural clubs for assistance with landscaping and flower beds. Look to facility user groups and those affiliated with them—such as parents and booster clubs—for site-specific tasks.

Make assignment schedules flexible enough to attract volunteers from numerous groups. For example, students at area universities can make excellent volunteers. They may not be able to make a year-long commitment, but often can devote blocks of time to specific tasks.

Such volunteer efforts can be beneficial to the students, too. Many students are "book smart" but have little hands-on experience. If we, as professionals, expect to find experienced personnel, we need to provide more opportunities for them to gain the experience. The combination of altruistic effort and hands-on experience will look

doubly good on a resumé.

Recognition—The most important element of successful programs is to recognize the efforts of volunteers. Let them know how important their service is when they agree to tackle the job, as they perform the task, and after their work is completed. Here are some other ideas:

- Write thank-you letters.
- Host picnics or luncheons.
- Distribute special badges, shirts, jackets or caps.
- Provide certificates of service.
- Write public thank-yous in the local newspaper or your newsletter.
- Give volunteers preferential treatment, such as "preview" tours of new or upgraded facilities before these sites are open to the public.

Keep a separate file on each volunteer. List:

- 1) full name, address, work and home phone numbers;
- 2) special interests and abilities; and
- 3) complete records of service, including where, when, what and how much time was spent.

Hold an annual celebration. Include everyone. Use your volunteer files to track



Volunteers help build a handicap-accessible walkway to a fishing pier at North Shields Pond in Fort Collins, Colo.