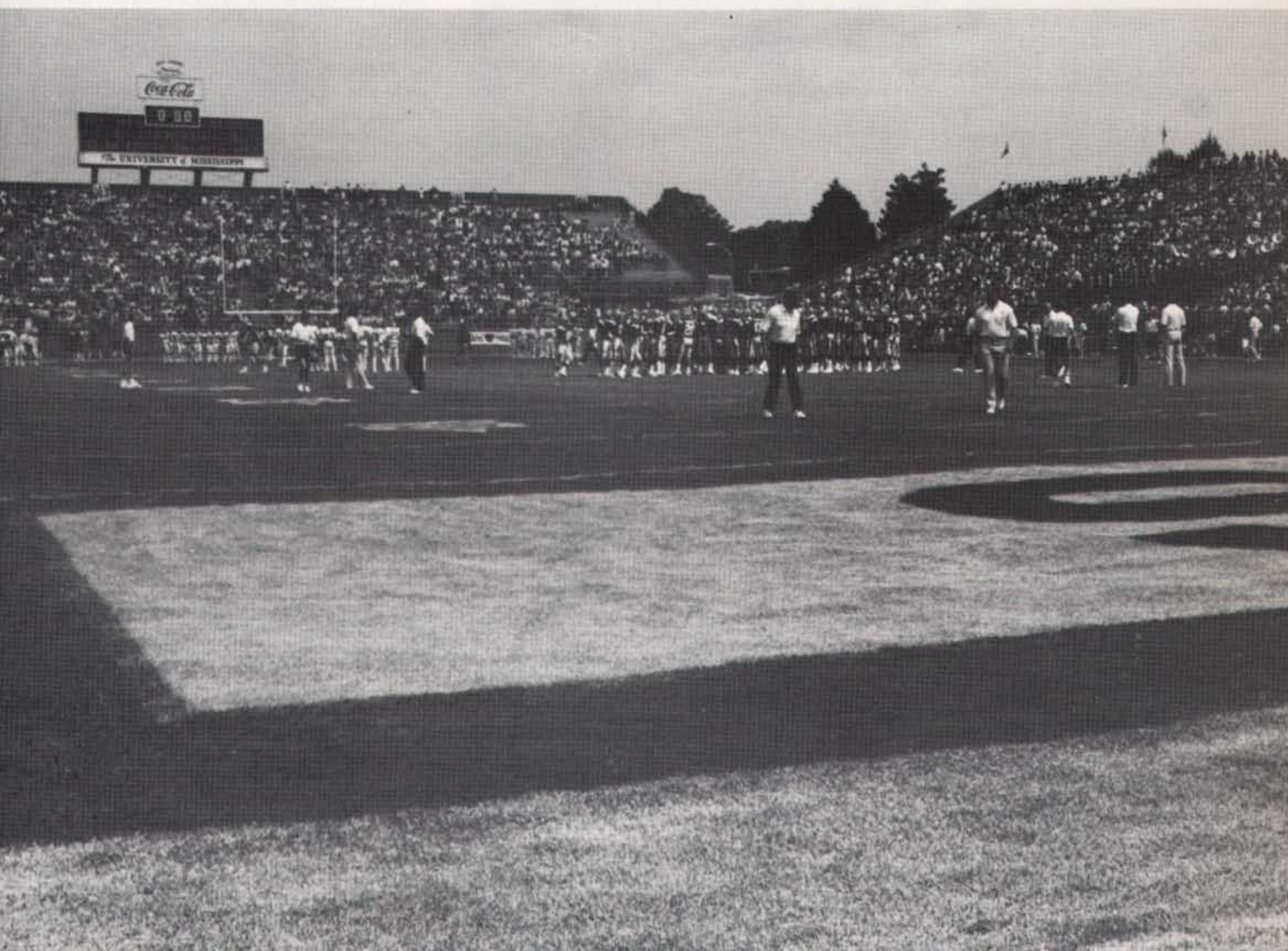


Taking the First Step Toward Sports Field Improvement

By William H. Daniel



The Purdue Field is a luxury for visiting teams who are used to harder surfaces. Turfgrass roots penetrate more than 18 inches deep into the sand rootzone. Despite its excellent condition, the field is aerified regularly.

A few tried and true techniques to improve tired sports fields might be just the motivation needed to get a field improvement program off the ground.

In fact, start with one field and use two or three of the following budget-minded improvements. Don't put off field improvements with the idea every field must be rebuilt. Even though some of the basic requirements of adequate drainage, healthy rootzone, and uniform irrigation may be less than adequate, start with these primary steps on a few fields and work your way up to safe, uniform fields.

Beef Up Fertilizer

Any injured organism requires more nutrients than healthy ones. Sports turf is regularly injured while serving its purpose to reduce injuries to players. Sports turf needs extra fertilizer to replace injured leaves, torn roots, and tillers. Heavy wear areas need twice the nutrients as the rest of the field.

When seeding, apply 100-100-100 lbs. acre of nitrogen, phosphorus, and potassium to the prepared seedbed. After the seed germinates, but prior to the first mowing, apply fertilizer again at half the

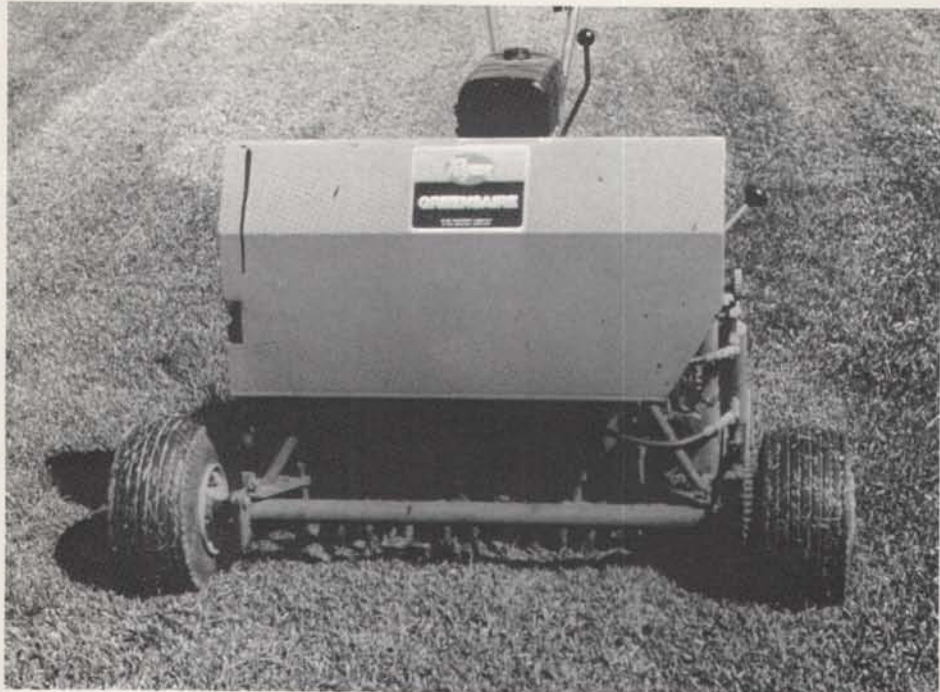
above rates to favor rapid growth and earlier use of the field.

Fertility requirements vary by the location and the turfgrass type. Three or more applications per year are recommended. Start fertilizing in late winter to encourage early spring growth. Follow this in mid-spring with an application of fertilizer and crabgrass preventer.

In midsummer, apply a third round of fertilizer including broadleaf and viney weed killer. This is the right time to apply insecticides for grubs as well.

Just prior to the start of the football sea-

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Ryan Greensaire, although designed for golf greens and slower than drum aerifiers, is used by many athletic field managers since it makes clean holes in the surface that are closer together than drum aerifiers.

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son, repeat fertilization, and insect control if necessary. About midseason and the onset of cool weather, fertilize for a final time.

Consider contracting the services and technology of a professional lawn care company. They are equipped to provide the needed products at correct rates of

application. This is especially true for weed and insect control.

Overseed Liberally

The capacity of turf to rejuvenate from damage can be phenomenal under favorable conditions, but divots should be quickly repaired and seeded following games to prevent player injuries and weed encroachment.

Overseeding is strongly recommended

for perennial ryegrass and tall fescue sports turf.

During the year, overseed as early as possible, even in late winter, to give the seed time to germinate. The freeze and thaw plus rainfall favor seed-soil contact. As the soil warms the seed begins to germinate.

The use of pregerminated or presoaked seed is gaining application at the professional and college level. The seed, soaked in a special solution at a controlled temperature, germinates in tanks and is then applied to damaged areas mixed with mulch, sand, or other spreadable material.

Only seed with soil contact will germinate and survive. Machines (seed drill or aeroseeder) are helpful in overseeding since they cut a groove for the seed and roll the area for good contact. Prior to slitting or aerifying is also a good time for seeding. Seed, aerify or slit, and then irrigate or water in the seed.

Core Aeration

Compaction is a recurring problem on intensely used sport turf. Coring, a process which loosens the surface to a depth of roughly three inches has been vital in improving the quality of sports turf surfaces and enhancing the safety for players.

Core aerify as much as practical. Follow with a harrow or drag to break up and distribute any soil cores.

Annual intense vertical cultivation or coring is considered a minimal requirement. If done only once, the best time is late summer. Make enough passes across the field so that holes are an average of two to three inches apart. The cores will dilute the thatch, aid in smoothing the surface, and provide improved resiliency for the players.

Initially, you may want to rent an aerifier, planning the work so it can be done in one day. Once a full aerification program is implemented, however, you may find owning either a pull-behind or self-powered aerifier more convenient to fit into field schedules.

In some cities there are sports field maintenance companies that specialize in aerifying and vertical trenching.

Sand Topdressing

Sand topdressing is as old as the game of golf but a relatively new technology for other sports surfaces. An application of 40 tons of fine textured "rootzone" sand is commonly used for one application of sports fields in Scotland and in some sports facilities in this country.

It is estimated that more than 80 percent of all golf greens in the U. S. are currently being topsanded. The fine sand offers more stability under foot and retains more water for root uptake than the coarser particle sands.

Although sand is applied over the sur-



Natural field shows effects of 40 games. Notice patches of perennial ryegrass that have survived the season.

face, the coring process and cleat action incorporate the sand into the rootzone. Annual applications of sand prior to core aerifying are strongly recommended.

One of the best things a sports turf manager can learn is the difference in sands. The wrong sand can make matters worse, not better. The size of the sand particles and the pH of the sand are important factors. Sand analysis can be done by many extension or university testing labs. Samples for testing can be sent to Turf Research, Department of Agronomy, Purdue University, W. Lafayette, IN 47907.

Weed Control

To meet player and spectator needs, the turf should be weed free, dense, uniform, and wear tolerant. Applications of herbicides to control buckhorn, knotweed, chickweed, clover, and other weeds will be needed.

Of course, if the field is predominately crabgrass and clover, use of herbicides is a good way to lose your job. A field in this condition should be renovated when practical. Once the field is returned to desirable turfgrasses, then herbicides should be used regularly to keep it that way.

A three-way mixture of 2,4-D, MCPP, and dicamba has been widely used for weed control. Again, you may want to hire the services of a well-equipped lawn care company for herbicide applications.

Resodding or Plugging

Worn or damaged areas can be quickly repaired by transplanting plugs, chunks, or sprigs of growing sod from the unused edges of the field or from a local sod producer.

Damaged areas can be patched or sprigged and then topdressed with sand or mulch. Resodding areas as large as 20,000 square feet in the center of the field can do much to upgrade the field for one or more seasons of play.

Where possible, aerify immediately to improve water and air movement in the rootzone.

Mulching

Following the football season, the field may benefit from extra protection from harsh winter weather.

Spread seed, aerify, and mulch worn areas. Topdressing with leaves, manure, finely chipped tree trimmings, saw mill waste, peanut hulls, corn cobs, rice hulls, or decomposable organic matter can be of value. In the spring, sweep the field to remove any excess or large pieces of compost.

Vertical Drainage

Older compacted fields are benefitting from a process called sand slitting. Certain sports field contractors have machines that cut deep grooves into the

soil in a pattern and backfill into these with sand. This can make a surprising improvement in vertical drainage to fields without tiling or with tiling that is silted up.

Combined with core aerification, sand slitting can vastly improve an older field.

Supplies on Hand

Most turf managers have a limited budget. Scheduling is also a limitation. The sports turf manager therefore must determine needed supplies, fit them into a budget, and have them on hand to fit the schedule of activities.

Planning and organization are major benefits to a field maintenance program. Waiting until the last minute to buy needed supplies forces compromises in both price and product. Compromises too often result in unsafe playing conditions.

As increased demands are made on the sports fields, improvements in irrigation, soil moisture sensing, water conservation, drainage, and rootzone renovation can be justified.

Editor's Note: Dr. William Daniel recently retired as professor of agronomy, Purdue University, W. Lafayette, In. He played a major role in the creation of the Sports Turf Manager's Association, the Midwest Sod Producers Association, and the Midwest Turf Foundation. He is the developer of the Prescription Athletic Turf field design and the Purrrwick golf green design.

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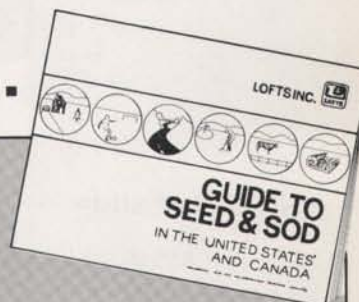
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