

CHALKBOARD

TIPS FROM THE PROS

ATHLETIC FIELD RENOVATION

By James R. Watson

The term, renovation, is used frequently in the sports turf industry to cover a wide range of improvements for athletic surfaces. This is unfortunate, because renovation gives some people the impression of being an expensive project, while others underestimate the costs involved in true renovation.

To renovate means to renew, restore, or invigorate a sports field to an acceptable condition or state of excellence. At the very least, this condition should provide a turfgrass cover with firmness and uniformity of footing satisfactory to the sports turf manager, the coach, the players, and to all management or supervisory personnel involved with the operation of the facility. This condition must also provide "spectator appeal," which may relate only to color and certain grooming aspects of the field.

Renovation does not mean to rebuild or redesign. However, it may involve modification of the soil, introduction of a new grass, alteration of one or more cultural practices, and adjustment in the amount or frequency of use.

From a playing standpoint, good athletic field turfgrass should be tough, wear-resistant, weed-free, and not easily torn by cleats. It should be soft and resilient enough to prevent abrasions when players fall, yet firm enough to permit good footing. Sports turf should be mowed short enough to prevent hanging of cleats, yet tall enough to ensure healthy plant growth and rapid recovery.

Firmness and uniformity of footing goes beyond the condition of the turfgrass. An even and resilient surface is absolutely necessary with or without good turf. Skinned areas of baseball infields must provide these conditions without turf cover.

Spectator Appeal. With the advent of color telecasting of sporting events by national networks or even local cable stations, field color and grooming have taken on a new significance. Spectators have come to expect uniformity and compatibility of color. Right or wrong, color is apparently one of the major criteria by which the general public judges the quality of turf.

Athletic fields may require renovation and sometimes rebuilding for any of several reasons. Among the more common, and for the most part avoidable, causes are poor construction, soil, the wrong turfgrass, poor management, inadequate grooming, and too few fields.

Poor construction centers around inadequate drainage and the depth and properties of the seed bed. Athletic fields must have a grade or crown to provide rapid surface drainage in addition to a subsurface network of drain pipe or slit tubing.

Sports turf can not withstand heavy and frequent use when growing in a shallow seed bed. The goal should be to provide a minimum of 16 inches of well drained, properly textured soil in which turfgrass roots can grow. Once a seed bed is established, steps must be taken to prevent the development of layers on top of or within this profile. Such layers impede water movement. They can be caused by wind-blown clay, topdressing with sand or soil of different textures, inadequate mixing of the seed bed soil, or sod grown in silty muck placed over sandy seed beds.

Firmness and footing go beyond the condition of the turf.

Seed beds which are sufficiently deep are rendered useless if the soil contained in them is poor. The texture and chemical properties of the soil are critical to plant growth. Too much silt, clay, or peat, or the wrong particle size of sand, can disrupt drainage and lead to compaction. Sand used in seed beds must range in size from 0.1 mm to 1.0 mm, with 75 percent or more of this in the 0.25 to 0.5 mm range.

The preferred soil pH for sports turf is between 6.5 and 7.2. Deviations above or below this range can cause nutritional problems. The soil should be tested for pH as well as for salts. Certain types of salts, especially sodium, in excess amounts can disrupt soil chemistry.

Proper grass selection is frequently overlooked. Turf should be suited to the specific location. Failure to use a blend of three to five of the best cultivars of Kentucky bluegrass, fine leaf fescue, tall fescue, or perennial ryegrass permits diseases and other stresses to significantly harm the turf stand. Failure to overseed a warm-season grass with an adapted cool-season grass exposes dormant warm-season grasses to damage.

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Mismanagement of some or all of the basic cultural practices such as watering, mowing, fertilization, cultivation, topdressing, and pest control programs is a common cause for turf deterioration.

Poor playing conditions can also be attributed to improper grooming habits. It is necessary to remove the plant parts (leaves, stolons, etc.) or even the entire plant when they become uprooted from normal use. These can be easily swept up or collected with a mower equipped with a bag or catcher.

Athletic fields should be topdressed after

one or more games, and divots or damaged areas of the turf must be repaired before they enlarge. Ideally, these areas should be seeded when the temperature is conducive to germination.

Many problems arise from the sheer lack of playing fields. When a team must use the game field for practices, or share the field with other groups, there may not be sufficient recovery time. Routine maintenance such as grooming, patching and topdressing becomes even more important.

Whatever the cause of poor playing conditions, when they exist a renovation program must be initiated. In extreme cases, rebuilding the turf may be the best answer.

Before embarking on a renovation program, a course of action should be carefully planned, and all necessary materials should be purchased. A successful turf renovation program involves three steps.

In the first step the problem or condition responsible for the turf deterioration must be identified. The unsatisfactory conditions must be listed in writing, studied and reviewed—and then reviewed again. For example, was the condition brought about by poor soil, the wrong grass, improper drainage, poor cultural practices, or simply too much use?

Once the problem has been identified, the corrective action needed to restore the field must be developed and studied. All potential solutions and alternatives need to be evaluated and the costs determined. If the damage is severe, the renovation costs should be compared to rebuilding costs.

In order to effectively evaluate the situation, information on the time and extent of future schedules and anticipated uses should be ascertained. The acquired data must be applied to the known status for basic construction details while taking into account any special requirements for establishing grass.

Failure to adhere to these simple steps can result in unduly high operational costs. However, there is one exception. Since renovation could be carried as an operating cost and rebuilding would be classed as a capital expenditure, an ongoing annual renovation program may be most expedient from the standpoint of stability of the financial structure.

Determining who, when and how to implement the renovation program is the final step. The nature and extent of the job will determine who will do the work and when it will be performed.

For example, topdressing to level out depressions, or seeding divots in early or mid fall, may be done by crew members during the playing season. They may also handle a change to new and better cultivars when the field is being cultivated or when a seeder-slicer is needed.

On the other hand, restoration of the crown with subsequent seeding, sodding or sprigging, a complete change of soil, installation of drainage tubing or of an irrigation system is best handled by a contractor.

Regardless of who does the work and when it is done, the program will be successful only if it is performed correctly. The groundskeeper must plan to supervise the project carefully from start to finish to ensure its success.

Once the renovation of the field is completed, keep in mind the reasons why the job was necessary and, insofar as possible, avoid development of similar conditions or situations on the newly renovated area.

Editor's Note: Dr. James Watson is vice president/agronomist for The Toro Company, Bloomington, MN. He is also a consulting agronomist for the National Football League and a member of the board of the Sports Turf Managers Association.

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