

•TURF RENOVATION•

By: Craig Tolley

Renovation can be defined as turf improvement that involves partial or complete replanting without total tillage of the soil. Complete renovation is when the entire turf stand is killed and reseeded. Partial renovation is called for when only a portion of the total area is to be killed off. Renovation of a turf should be considered when the condition turf stand is: severely damaged by pests, predominately covered by weeds (broadleaf or grassy), of a poor quality turf due to excessive thatch or compaction, or if a combination of these conditions exist.

Prior to taking any direct action the site needs to be evaluated to determine how severe and extensive the damage is and to identify the underlying cause of the damage. The evaluation should include identification of the dominate turf species and current density. All weed species should be identified (the weeds can be strong indicators of underlining problems). Additionally the thatch layer, drainage patterns and soil conditions should be checked. Soil should be tested for pH, nutrient levels and compaction. When the root cause of the decline in turf quality can be identified, a long term plan to alleviate the damage and prevent it from reoccurring should be developed and implemented.

Selecting an appropriate species for the site and use of the turf is the most important step in this process. On most athletic fields in New Jersey, the following species are desirable: Kentucky bluegrass, tall fescue, and perennial ryegrass. Kentucky bluegrass and tall fescue tend to be the more durable species; but when time is limited, perennial ryegrass is the fastest

to germinate. For these species, the end of August into early September is the best time of year for establishment.

The area should be treated for weeds prior to seeding; preferably with an herbicide that will have short residual life such as glyphosate. Depending on the weeds present, more selective herbicides may used or applications limited to spot treatments. In this situation one needs to be very careful in the selection of an herbicide since the desirable seedlings will have an increased sensitivity to the chemicals remaining in the soil.

Soil compaction should be alleviated with aggressive hollow tine aeration - at least two to three passes over the area being treated. If thatch is a problem the field should also be dethatched at this time (the slicer can also help break up the cores from aerating if it is done second). This process will help exposure the soil and allow for good seed to soil contact.

The last cut prior to over-seeding should be at reduced height to lower the canopy and allow more light to reach the soil for the germinating seeds. The seeding is best performed with a disc-type seeder to get the seeds directly in contact with soil and through the canopy as opposed to a broadcast spreader that may leave the seeds exposed on the surface or in the canopy of the existing grass. The seeding rate will need to be higher than as compared to seeding over bare soil (by roughly 20 percent) due to increased competition from the standing turf. A thin layer of topdressing can be applied over the top of the seeds to aide at incorporating them into the soil.

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The new seeds will need to be irrigated with frequent light applications until they have started to become established. Any fertilizer applications should be based on need as determined from the soil test.

When time is extremely limited one can either prime or pre-germinate the seed for a quicker establishment. Priming the seed is pre-imbibing it with water so when the seed comes in contact with the soil, it is ready to germinate. To do this, place the seed in a burlap bag than soak in a large container of lukewarm water (aerating with a fish tank bubbler helps but is not completely necessary) for about 24 hours than drain and air dry so it can be spread. Pre-germinating is taking this idea a step

farther; the seed can be placed on damp paper in a warm location (70-75° F) until roots can be seen emerging from the seed. With the pre-germinated seed the plants are already growing when they first contact the soil. The drawback to either of these 'tricks' is that the seed will be more susceptible to mechanical damage or fungi as you prepare it, so it is best to sow the seed/seedlings by hand (making this not practical for large areas) to minimize the physical damage.

*Craig Tolley is Professor,
County College of Morris,
and President, SFMANJ*

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