Seeding strategies that work

By Mark G. Grundman

Over the past several years problems have cropped up either from man-made situations or naturally, all causing a strong shift in the populations of grasses on our athletic fields. This shift in most cases has lead to higher populations of non-desirable grasses and an increase in overall management costs.

In the past, field managers have attempted interseeding (seeding into an existing population, to control this shift in population) in one form or another with limited success. Some researchers and investigators will tell you the failures outnumber the successes by a wide margin. If odds are stacked against this process, why should we keep trying to intraseed? There are several answers, and in this article I hope to give you some

Chicago high school football field before interseeding. Photo courtesy Phil Hargarden.

Same field after interseeding. Photo courtesy Phil Hargarden.

insight into new concepts to shifting the population back in our favor.

Sometimes turf managers will try to improve existing stands by seeding with improved cultivars because they offer better disease resistance, traffic tolerance, and life at lower mowing heights. Older varieties and species are not adaptable to lower heights of cut and have a tendency to thin when mowed at excessively low heights for long periods of time. Once under stress disease patterns start to show, again thinning your playing surface. This in turn allows other grassy weeds to encroach into your fields. Perhaps one of the largest reasons behind an attempt to change our turf population is our old friends Poa annua, Poa trivialis, knotweed, and crabgrass to mention a few, which will invade when stressful conditions exist.

Often I hear "Well if my current grasses do not survive, then Poa annua will save the day." Unfortunately, with shrinking budgets, the cost of maintaining a Poa annua or high weed populated field has become quite expensive, not to mention increasing the potential for injuries. Thus, the need for grass replacement with a species or variety that is adapted to day-to-day usage is needed to help compensate for these problems.

Setting up a program

My experience shows turf managers that set up a plan to interseed have the most success rather than those that just run out with the seeder at the first crack of cool weather. The first step to a successful plan is to answer the question, "Why should I seed?" Typically, your answer will be one of the following:

- To increase density.
- To change the genetic variability to my field.
- To increase the overall disease resistance.
- To build better wear tolerance.
- To build better uniformity and color into our grassed areas.

In giving this a great deal of thought, I find that of all the problems faced by athletic field managers, wear and undesirable species, especially Poa annua, come to the top of the list of why they intraseed.

When battling any foe, it is important to "know thy enemy." A review of the strengths and weaknesses of Poa annua, for instance, would give us an idea of how to attack this problem on site. We find that Poa annua:

- Invades whenever we have a problem with our fields.
- Disrupts the uniformity of any athletic field.
- Costs an enormous amount of money to create a constant uniformity with this species.
- Faces declining shoot density during the summer months.
- Dies when subject to heavy traffic and other summer stresses.
- Recovers due to a prolific seed bank but not until year's end.

In the past, we almost always tried to interseed into fields when the species or problem we are competing against are at their strongest. An evaluation of problems and when said problems are at their weakest will lead us to proper times for interseeding. (In the case of fighting Poa annua, we would plan to seed just before its death, i.e., anytime after Poa annua

flowers in the spring through late summer).

The first step in doing this is to take a critical look at the overall condition of our field and correct any problems that exist on site. One of the most common problems with athletic fields are poor soil physical properties. Anything that can be done to improve soil drainage should be implemented prior to interseeding. If you don't do this you can expect more of the same to show up in years to come, and again stress our turf into nonresistance.

Next you need to set up a realistic budget targeted to correct these problems on site. Follow this by evaluating all species and varieties on site, as well as evaluating your local seed source, and cross compare this information against local NTEP information. These evaluations will give you the greatest long-term solutions on your field.

This is a critical part of the program, for the blend or mixture that we plant is no better than your weakest variety. As time goes on, for instance, if one variety is susceptible to a certain disease pattern, then all varieties in your formulation will become susceptible.

Also look for grasses that match color wise, are adaptable to current mowing and nutrient regiments, and offer strength to maintain themselves against the problems of disease, high traffic, high heat, and cold tolerance.

From a local perspective I like to use high chlorophyll content varieties. In recent NTEP studies, these performers have shown the strongest resistance to the day-to-day problems that most athletic fields go through in the Midwest.

One of the final steps is deciding when to seed. In the past seeding in the fall was the accepted norm. It gave the best chance for survival to young seedlings, especially on fields that had minimal irrigation capabilities. It was a time, except for football, when play was the least disrupted. Unfortunately, this is a time when grasses like Poa annua are at their strongest. If we are to compete, as mentioned before seeding on all athletic fields must be done on a regular and frequent basis. Any time the field is not in use, seeding with updated equipment designed not to disrupt play should be considered.

Determining rates

After timing, reconstruction, varieties, and species are selected, the next step is determin-

Field mowed at 1/2 inch, Eldridge, IA.

Rootzone of Eldridge, IA field.

Placing seed at moisture levels.

ing seeding rates. Current studies have shown another change on the horizon.

One study compared common standards of seeding rates versus higher seeding rates of new aggressive varieties (5-10 lbs. per 1000 sq. ft. with bluegrass and 10-25 lbs. per 1000 sq. ft. with ryegrass). The studies were conducted throughout the year with lowered mowing heights, and growth regulators being applied in conjunction with the interseeding programs. The higher seeding rates showed vast improvements in rates of establishment. If for any reason young seedlings are lost, reestablishment can occur from the seed bank established from higher seeding rates.

Once seeding rates are established, the next step in the process is placing the seed where moisture levels are the highest. In the past the practice has been to place the seed no deeper that three times the thickness of the seed into the soil. Unfortunately, most of the seed never came into contact with the soil at these shallow depths. Often we ended up placing the seed directly into the mat layer where young seedlings would dry out, die, and other species would take this opportunity to prevail once again. **It is imperative that seed is placed below the mat layer.** This will insure successful seeding and establishment. Placing the seed below the mat layer becomes critical to the success of the project. There are three things necessary for proper establishment of all species on site:

- Light
- Moisture
- Air

Reducing the height of surrounding plants for at least four to six weeks can give the added advantage of light and air to all young seedlings. Moisture will be up to you and Mother Nature.

Interseeding works if you are able to rethink and follow new guidelines for successful establishment. There are some superb varieties available today, and if incorporated into a successful overseeding program, improved stands of existing turf are possible without the disruption of total renovation. The long-term results equate to reduced maintenance and improved playing surfaces for all. ■

Mark G. Grundman is the senior technical manager for Jacklin Seed, and a member of the Wisconsin STMA chapter as well as the national association.