

# Intraseeding/ Interseeding: What's the Hullabaloo?

*The first difficulty in discussing the controversy (hullabaloo) surrounding this subject was figuring out how to refer to it. Some articles call the practice of seeding bentgrass into an existing bentgrass putting green "interseeding," while others call it "intraseeding." Overseeding is the general term, but using the term in every instance would be cheating, and it is also the term for seeding perennial ryegrass into Bermuda for fall color. "Inter," as in interspecific competition, implies individuals of different species. "Intra," on the other hand, implies individuals of the same species. When talking about seeding colonial bentgrass into creeping bentgrass, then, the term should be interseeding; but if you are talking about seeding one variety of creeping bentgrass into another variety of creeping bentgrass, then it should be intraseeding.*

The controversy over whether or not to overseed bentgrass putting greens has been around since World War II. In the 1920s and 1930s it was standard practice, but then it fell into disrepute and superintendents thought it was a waste of time and money. "Bentgrass seedlings can't compete with established and mature grasses" was the standard thinking until the late 1960s. It was then that many superintendents were interested in interseeding their *Poa*/bentgrass mixed greens with newer varieties, such as Seaside or Penncross, to achieve more bentgrass.

Today's situation is not much different. Newer bentgrass varieties with improved agronomic qualities continually are brought to market, but the time and cost involved in killing the existing stand of grass and reseeding are not feasible. So inter- and intraseeding with newer bentgrass varieties are now common practice.

## **Intraseeding Discredited**

In 2002, Kendrick and Danneberger published an article discounting the practice of intraseeding. Their experiment involved using five different intraseeding techniques to try to convert an existing stand of Penncross to Penn G-2. The five methods included a control, scalping, coring, a Primo application and a glyphosate application. The actual seeding process involved vertical mowing and

*(continued on page 15)*



*Spike seeding with a machine like this one is perhaps the most popular way of interseeding putting greens in Chicagoland.*

topdressing of the Penncross plots and then seeding with 0.5 pounds of seed/1,000 ft<sup>2</sup>. In addition, they intraseeded in three different months: October, April and September. Molecular markers were used to differentiate between Penncross and G-2 in samples taken a few months after seeding.

In the samples taken, only the plots receiving the glyphosate application had any established G-2, indicating that all of the intraseeding techniques that superintendents were using were ineffective. The conclusion was that complete conversion of one bentgrass to another was not possible, not because of shoot competition (otherwise the scalping would have worked), but because of root and stolon competition. Similar work by Bowman on intraseeding of A-4 into Penncross produced similar results, although some success (20% conversion) was achieved with the combined treatment of aeration with JobSaver tines and Primo.

So overseeding doesn't work. "Ha ha! I told you so." Not so fast. It takes a few interviews with superintendents that overseed to get the full picture. First, and most importantly, these superintendents are not intraseeding; they are **interseeding!** All of these courses, like most in Chicagoland, have an old, mixed stand of bentgrass and *Poa* on their greens and not a solid stand of bentgrass like those found at university locations. Therefore, they are really not trying to seed in a species that is competing with its own kind for the same niche.

### Interseeding Vindicated

Moreover, none of the superintendents interviewed look at overseeding as a complete conversion process. The true target is trying to establish a little more bentgrass on their greens, not wholesale conversion. And research supports this idea. Work by Murphy at Rutgers showed excellent competition by the newer varieties of bent when interseeded in July into a pure stand of *Poa* that had been treated with plant growth regulators (PGRs). On average, over a number of PGR treatments, SR-7200 velvet bentgrass established and outcompeted

*Superintendents who successfully overseed are not intraseeding; they are interseeding! They do not look at overseeding as a complete conversion process. Their true target is trying to establish a little more bentgrass on their greens.*

*Poa* at a 74% rate, A-4 and L-93 at 47% and Penncross at a 9% rate.

Paul Bastron at Glen Flora, one of the first in this area to interseed, is perhaps the first to coin the term "opportunistic seed," meaning the bentgrass seed can inhabit an open spot in the green canopy and not otherwise leave it open for an opportunistic *Poa* seed. Paul interseeds at low rates (about 0.5 oz bentgrass seed/1,000 ft<sup>2</sup>), but does it constantly throughout the growing season—at least once a month. He also always applies seed when he aerifies, and uses a spike seeder during the summer months to break through the canopy.

Frank Heery at Westmoreland likes the idea of a hodgepodge stand of grass on his putting green, and actually encourages it. "If the *Poa* survives, so be it. It deserves to be there, and is a pretty good putting surface when it's healthy anyway. But my putting greens are dynamic and constantly put to the test. If the *Poa* doesn't handle the stress well, then I am going to have some bentgrass there to replace it." Over the years, he has interseeded with just about everything over his original PennEagle sod

(continued on page 17)

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greens. Currently, he is trying the newer, more aggressive bentgrass varieties T-1 and T-2 from Jacklin Seeds (of which we also have pure stands at the Midwest Golf House for your viewing pleasure).

Randy Wahler at Knollwood is also a big proponent of interseeding: "We have converted our greens, which were approximately 70% *Poa* 10 years ago, into approximately 70% bentgrass today during the summer growing season." Randy employs an aggressive seeding system at Knollwood, using a spike seeder to seed one-third pound of 'Dominant Extreme' bentgrass/1,000 ft<sup>2</sup> every two weeks from June through August. This equals six seeding applications and a full two pounds of seed. At an estimated 6 million seeds per pound, this is 12 million seeds per year! "Really, there are two parts to it," Randy says. "The first is we have reduced the *Poa* seedbank in our greens over the past five years by suppressing seed formation with growth regulators like Proxy. And second, we are flooding the greens with opportunistic bentgrass seed, at a time during the summer when it is more apt than *Poa* to fill in ball marks, scuffs or other voids in the green canopy."

Tim Davis at Shoreacres is also very aggressive in his interseeding program. "The bottom line is we don't get paid to have open areas on our greens." He uses the popular ways of breaking through the existing

canopy, such as spike seeding and quad-tining, but also employs some other methods of seed delivery, such as the use of a modified Ryan Mat-away on one-inch instead of two-inch centers, and ketchup bottles filled with seed mix to fill in ball marks. Tim also intensely warns that sodium levels and other underlying chemistry problems of the green profile be checked before expecting success from any interseeding program.



High-pressure injection (HPI) systems like this Envirojet (which has subsequently been discontinued) may be the wave of the future for effectively placing seed in a turf canopy.

#### A New Approach?

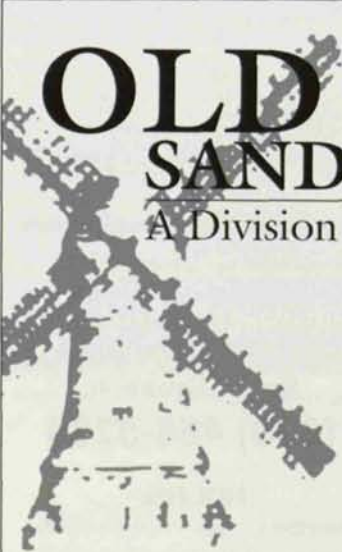
A new approach may also be on the horizon for interseeders. Researchers at Texas A&M have been experimenting for some time with high-pressure injection (HPI) systems to inject fertilizers and pesticides. Preliminary work done by Engelke using an HPI system showed that it may also be a good, nondisruptive way to interseed. His work showed that the seed can easily pass through

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an HPI system, a majority of seed (61%) remains viable after injection and the seed is injected to an ideal depth (1/8"). All this, and like spike seeding, surface disruption is minimal and playability is not reduced.

Although scientific research needs to be done, interseeding seems to be a good idea for superintendents around the Chicago landscape. The number one requirement for any seeding process is good seed-soil contact, which can be tough over an existing turf. Spike seeding, verticutting, aerifying and soon maybe HPI systems can put the seed in the ground for you, and the natural waning of *Poa* populations during the summer can be used to your advantage. As Paul Bastron states, "Bentgrass seed isn't going to do any good sitting in the bag."





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