



Fall Inter-Seeding

By **Kevin L. Hensler**, ITM Specialist, O.J. Noer Turfgrass Research and Education Facility, University of Wisconsin-Madison

If you're inter-seeding *Poa annua* fairways with creeping bentgrass this fall, maybe you should reconsider. Superintendents throughout Wisconsin and the north-central region attempt to stem the invasive tide of *P. annua* on their fairways by throwing bentgrass seed at the problem. But how successful has inter-seeding been for those practicing it? Multiple research projects quantifying inter-seeding say it is probably not a viable option at this time, at least not in *P. annua* turf.

Most research has centered around the traditional seed establishment periods of spring and/or

fall. The problem is that these periods also coincide with environmental conditions favoring *P. annua* populations over creeping bentgrass. Research done at the University of Minnesota many years ago documented the population dynamics of creeping bentgrass and annual bluegrass throughout the seasons. *P. annua* held the competitive edge during periods of moist cool conditions (spring and fall), while creeping bentgrass populations took the advantage as summer became warmer and drier. Summer heat and drought coincides with a declining competitiveness in *P.*

annua populations, as the turf growth gradually slows and plant density decreases.

To be effective, inter-seeding bentgrass needs to be accompanied by somehow pre-stressing the existing annual bluegrass population. Existing turf needs to be rendered less competitive in order to give new seedlings a chance to establish. Herein lies the biggest impediment (competition) to successfully establishing a creeping bentgrass population within a *P. annua* fairway. A secondary problem is the amount of carbohydrate reserves within each seed

A Continuing Tradition of Quality
in Golf Course Renovation
Restoration and New
Construction



[608] 836-7041

FAX: [608] 831-4236

WWW.BRUCEGOLF.COM

(which stills leads us back to competition). While there is generally enough stored energy within the seed to complete germination and seedling emergence, the seedling is unable to produce enough photosynthate to initiate new tiller production and growth, and effectively compete with the existing turf.

Growth regulators have been promoted as inter-seeding tools to reduce the competitive advantage of *P. annua*. The idea is to slow the growth of annual bluegrass so the bentgrass can create a "beach head" for further expansion. While the logic is sound, the results have not been impressive. Researchers at Purdue University found that the application of Primo provided no competitive favor to bentgrass establishment. The growth of *P. annua*, was reduced, but there is still the plant density problem to contend with. Space and light are needed to establish turfgrass populations. Slowing growth does not provide space **or** light.

Summer is generally considered a less than ideal time to seed turfgrasses, and rightly so. Heat and moisture are difficult to manage to benefit seedling establishment. On the other hand, summer drought stress, combined with heat, is an excellent pre-stress event to create space and light, and may be just what bentgrass needs to gain the upper hand. Creeping bentgrass has the ability to withstand higher temperatures (evidence bentgrass usage in the deep south) than *P. annua*. The research group at Rutgers has shown that the least annual bluegrass invasion during establishment (not inter-seeding or conversion) occurred when bentgrass was planted in either June or August.

There is an absence of turfgrass population conversion research being conducted during the summer months. Logic, based on the principles of plant competition, say summer seeding will work, though it will not be easy. On the other hand,

reality and logic do not always go hand in hand.

Optimum temperatures for bentgrass seed germination reach up to 86°F. Beyond 86°, germination speed increases, and germination rates will be suppressed. The increased speed of germination will get plants up and out of the ground faster, while the *P. annua* will be sitting, struggling to survive summer's stress. The edge will be to the bentgrass.

Will summer seeding work? No one knows at this time. But if it doesn't work, you have a lot to lose. If you pre-stress your *P. annua* population and the bentgrass seeding fails, you may end up with little or no turfgrass in your fairways.

So what are your options if you

don't want the *P. annua* that has moved in on your fairways? Total renovation is a costly, but effective alternative. If you have lots of money, sodding always works well. If you have lots of money and time (yeah, right), seeding works too. Other research has shown that the high-density creeping bentgrasses (L-93, A-4, etc) have excellent resistance to annual bluegrass encroachment. You can pray for longer summers and more heat and drought, to cater to the needs of the bentgrass. Or, go with Mother Nature's flow, and manage the *P. annua* as your turf species of choice.

For more information on inter-seeding, and the ITM Program, contact Kevin at hensler@entomology.wisc.edu, or (608) 845-2545. ♻

