Breeding Seashore Paspalum for Recreational Turf Use

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Objectives:

1. Develop a course-wide paspalum cultivar.
2. Assess paspalum genotypes for multiple pest resistance.
3. Identify and develop improved disease resistance in paspalum.
4. Develop an efficient method for screening germplasm for salt tolerance.
5. Develop breeding strategies to induce variability through genetic recombination.

Start Date: 2003
Project Duration: three years
Total Funding: $90,000

The University of Georgia turfgrass breeding program arguably has the largest and most diverse collection of seashore paspalum ecotypes in the world. Recent research findings now allow us to better utilize this germplasm in our cultivar development program. A traditional breeding approach based on hybridization is now being used to generate new genetic variation through recombination. This approach allows us to generate thousands of unique individuals each year. Individual plants are hand-trimmed in the greenhouse and undesirable plants eliminated.

In 2005, more than 4,000 individuals were also screened for salt tolerance in the greenhouse and approximately 2000 salt-tolerant individuals were later transplanted to field plots for further evaluation of turf quality and resistance to dollar spot. This approach allows our breeding program to efficiently evaluate large numbers of individuals for important traits and should insure continued improvement in turf quality, disease resistance, and salt tolerance in our future cultivar releases.

A new breeding approach now makes it possible to evaluate thousands of individuals each year for traits of importance to the golf industry.

Resistance to Japanese Beetle Grubs

Japanese beetle, *Popillia japonica*, is considered the single most important turfgrass-infesting grub in the United States. Studies were conducted during 2005 to rank the degree of resistance to Japanese beetle grub feeding among selected seashore paspalum, bermudagrass, and zoysiagrass taxa.

During 2005, 12 taxa including nine paspalums, one bermudagrass, and two zoysiagrasses were compared for their suitability as hosts and susceptibility to damage from Japanese beetles in a field trial. Paspalum lines included 'Sea Isle 2000', 'Sea Isle 1', 'Sea Dwarf', 'Salam', 'Sea Spray', 'Sea Isle Supreme', 'Aloha', 'Kim 1', and 'Sea Green'. Japanese beetle adults were released into field cages in June and allowed to lay eggs within the cages where the twelve turf types were exposed to grub feeding during the summer and fall. Plots will be harvested next year following the spring feeding period just prior to April pupation.

New Cultivar is Released

This year, we released 'SeaIsle Supreme', another of Dr. Duncan's paspalums, which will be for course-wide use in fulfillment of our first objective. 'SeaIsle Supreme' has even better salt tolerance than our previous releases and should be well suited for use as a fine turf in environments where salt is a problem for other turfgrasses. 'Sea Isle Supreme' is a vigorous ecotype that is suitable for use on golf courses, athletic fields, and other recreational venues as a fine turf.

'Sea Isle Supreme' is a low growing and rapidly spreading semi-dwarf type that tolerates a wide range of mowing heights and still maintains good turf density and quality. This characteristic makes 'Sea Isle Supreme' attractive as a grass that can be used on all parts of the golf course, from roughs to fairways to tees and greens. 'SeaIsle Supreme' also has an extremely vigorous spreading growth habit that aids rapid establishment, grow-in, and recovery from any maintenance challenges. Thus far, 'SeaIsle Supreme' licenses have been granted to five domestic growers. Foundation plant material was distributed early this past growing season, and substantial supplies of certified plant material are now available.

Summary Points

- A new breeding approach now makes it possible to evaluate thousands of individuals each year for traits of importance to the golf industry.
- Studies are underway to rank the degree of resistance to Japanese beetle grub feeding among selected seashore paspalum, bermudagrass, and zoysiagrass cultivars
- 'SeaIsle Supreme', a new cultivar suited for course-wide use, was released in 2005 and certified plant material is now available for use on golf courses.