

Turfgrass Breeders: Golf's Unsung Heroes

Working behind the scenes to improve course conditions.

BY PATRICK O'BRIEN

They are smart. They are world travelers. And they are unknown to many who play the game. They are golf's unsung heroes — turfgrass breeders. The development of new turfgrasses is one of the greatest improvements to golf courses. Plant breeders have released a plethora of new turfgrass varieties that offer improvements in appearance, survivability, and playability. All these advances have impacted how golfers play the game.

From the 1950s through the 1980s, golf was played mainly on Pennncross bentgrass; Tifway, Tifdwarf, and Tifgreen bermudagrass; Meyer zoysia; Kentucky 31 tall fescue; and Merion Kentucky bluegrass. Although it is easy to see how far we have come, there was a time when turfgrass breeders believed the older grasses could not be improved upon and that new varieties could not be marketed in a way to compete with the existing standard grasses. Once these issues were resolved, it opened the door for many improvements.

In 1982, the USGA Turfgrass and Environmental Research program developed far-reaching goals to develop improved genetic plant material for golf to meet new environmental concerns and water quality issues. The USGA provided funding to university plant breeding programs to improve plant genetics. A total of \$18 million has been invested since then, and today more varieties than ever are available to golf courses, many of which meet the USGA's original research goals.

Nowhere are the new turfgrasses more obvious than on the putting

greens. Grasses such as Crenshaw, SR 1020, and the A and G series turfgrasses offer better summer survival and better playing quality. TifEagle, Champion, and Mini-Verde ultradwarfs have rendered Tifdwarf bermudagrass all but obsolete today due to their adaptability to lower mowing. It took years for breeders to make these improvements to the level of turf quality demanded by golfers.

Breeders used many strategies to improve plant material, some traveling to golf courses with Pennncross and selecting promising-looking clones. Thousands of clones were screened and the best ones were incorporated into new varieties. Other breeders used funding to travel to China, Japan, and South Africa, where different species originated from and where the greatest genetic diversity existed.

Grasses new to golf courses have started to appear. Paspalum did not exist on golf courses 20 years ago, but today it is considered a premium golf surface on sites with poor water quality, especially in Hawaii and Florida. While zoysiagrass is not new to golf courses, new zoysia varieties have a much finer leaf texture and population density than Meyer zoysiagrass.

University-based plant breeders are not the only ones who have impacted golf. Sod producers and superintendents with keen eyes have selected unique plant biotypes during their day-to-day turfgrass management. It is no wonder this happens due to the environmental extremes grasses are exposed to on golf courses relative to mowing, drought, disease, traffic, and other stress factors. These selections are

evaluated and sometimes released. Champion bermudagrass is one of the most popular ultradwarf varieties developed with this method.

New varieties take less time for release today because, according to Dr. Michael Kenna, USGA research director, "Once a certain level of turf quality has been reached, smaller incremental improvements take less time. It took many years to develop Rebel tall fescue from Kentucky 31-fall fescue due to the many genetic issues that had to be overcome to turn a forage plant into a turfgrass." The next advancements will be better tolerance to biotic and environmental stresses such as diseases, insects, heat, drought, and water quality.

Turfgrass breeders are taking the lead and providing the best possible information to maintain the new turfgrasses. New releases today have high expectations, and if a variety fails in the field, it will not be around long. Providing management information specific to a given variety is not a luxury; it is a necessity. Buyers must still do their homework, but there is more information available today than at any other time.

Turfgrass breeders have done a great service to the game of golf. The next time you make a par, birdie, or eagle, remember to give some credit to these unsung heroes of the game of golf.

PATRICK O'BRIEN has admired turfgrass breeders for a long time, and even more so since he recently had holes-in-one on two newer bentgrass varieties, Crenshaw and G-2.