

Keeping the green in putting greens

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An ARS researcher has developed a tool to more accurately identify non-uniform plants that can adversely affect the appearance and "playability" of putting greens, so that golf course managers can decide how to best deal with the trespassing plants.

When a patch of unwanted grass discolors a putting green, it can cause headaches for golf course managers and for the sod farmers who supply them. But a U.S. Department of Agriculture (USDA) scientist has developed a tool to help minimize the damage.

Putting greens in the southern United States are made up of single cultivars of bermudagrass, and the appearance of non-uniform plants, or "off-types," can throw off the green's appearance and "playability." Karen Harris-Shultz, a geneticist with the Agricultural Research Service (ARS) [Crop Genetics](#) and [Breeding Research](#) Unit in Tifton, Ga., has refined the process for telling one type of bermudagrass from another.

This will help identify the source of unwanted off-types. ARS is USDA's principal intramural scientific research agency.

The lines of bermudagrass used on putting greens throughout the southeastern United States are all offshoots of Tifgreen, a variety developed more than 40 years ago by the late Glenn Burton, a former ARS grass breeder in Tifton. Even with the best [molecular tools](#), the grass varieties are so nearly alike that it is sometimes hard to tell them apart.

When they find an off-type, golf course managers and sod farm managers often send samples of them to Harris-Shultz for analysis before deciding how to proceed. They need to know if the off-types are caused by a previously planted cultivar, a bermudagrass weed or by a mutation of the variety they planted.

Harris-Shultz collected 15 Tifgreen-derived cultivars from golf courses and research partners, extracted DNA from them and, with the help of an existing [DNA database](#), developed a tool to help distinguish bermudagrass [cultivars](#) and identify contaminants.

The results, published in the [Journal of the American Society of Horticultural Sciences](#), identify "repeatable polymorphic fragments" of DNA that are unique for each cultivar and can be used not only to distinguish among the different grasses, but to trace relationships between them.

[Read](#) more about the research in the May/June 2012 issue of Agricultural Research magazine.

Provided by Agricultural Research Service

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