Golf courses constantly battle weeds in our region due to subtropical conditions that favor rapid establishment and growth. Eradication of weeds however, is economically and environmentally impossible. Thus a philosophy of maintaining an acceptable level of control is required and the use of herbicides is a necessary part of an integrated pest management program. Weed management programs on most Florida golf courses generally includes two to four preemergent herbicide applications for warm-season and cool-season weeds, and spot treatments of postemergence herbicides to kill infestations of established weeds.

There are a variety of herbicides that are effective on turfgrass weeds in our region. Factors that are often considered when purchasing herbicides include cost, safety, efficacy, and ease of application. However, an additional factor that is overlooked is mode of action. It is human nature to continue using products that provide consistent results, or are the least expensive, but we

Goosegrass removed from a Texas putting green that was later confirmed to be resistant to a sulfonylurea herbicide. Photo courtesy Gary Brooks, Bayer Environmental Science.

By Todd Lowe
USGA Florida Region Senior Agronomist

Beneath every meticulously groomed green is dirt. And, the best dirt doesn’t just happen. At Golf Agronomics Supply & Handling we’ve been perfecting golf course soil and sand for more than a decade. Our computerized soil blending equipment ensures that the mix you receive meets your exacting specifications every order, every time. With production facilities located throughout the Southeast, Golf Agronomics offers volume orders and next day service.

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may be doing more harm to our golf course in the long run. Some annual weeds like goosegrass and annual bluegrass produce thousands of seeds that can be quite genetically diverse. Some seedlings may have a herbicide-resistant gene, and if the same herbicide is applied each year, this gene can be passed along to future generations. To date, goosegrass and annual bluegrass resistance has been confirmed with several different turfgrass herbicides. For goosegrass, resistance has been documented with Illoxan (diclofop), Fusilade II (fluazifop), Dimension (dithiopyr), Pendulum & others (pendimethalin), Barricade (prodiamine), Surflan (oryzalin), Balan (benefin) and Team (trifluralin). For annual bluegrass, they include Dimension, Pendulum & others, Barricade, Surflan, Balan, Team, Prograss (ethofumesate), Princep & others (simazine), Aatrex & others (atrazine) and Sencor (metribuzin). There has been a recent report of sulfonylurea herbicide resistance in goosegrass as well, but results are not yet published (see picture).

Rotating different modes of action is recommended to reduce the development of herbicide resistance. An example might include rotating Ronstar into a preemergent Barricade program, if it has been applied consecutively for several years. Pendulum and Surflan would be poor choices for rotation in this scenario, as these chemicals have similar modes of action as Barricade. Some basic knowledge of herbicide families is necessary to make an informed decision, but these are easily accessible via the internet or turf management textbooks. Consider your weed control programs and whether reduced control of a particular weed like goosegrass or annual bluegrass has occurred. If the same herbicide has been applied for several years consecutively, then there may be a chance that resistance is occurring. Rotate herbicides with different modes of action to reduce the likelihood of herbicide resistance and improve weed management efficacy at your golf course.

It is human nature to continue using products that provide consistent results, or are the least expensive, but we may be doing more harm to our golf course in the long run.