

All About Glyphosate – And Getting the Most Out of It

BY STEVE HART

By definition, nonselective herbicides are herbicides that will completely control or cause serious injury to any plant to which they are directly applied. A number of nonselective herbicides are labeled for use on golf courses and are generally described as either “contact” or “systemic.”

Contact herbicides will only control the portions of the plant they are applied to and have little to no movement within the plant. These herbicides have rapid activity, but their use on golf courses is limited, because of the lack of complete perennial weed control. Diquat (Reward) and pelargonic acid (Scythe) are two contact herbicides that are labeled for use on golf courses.

Glufosinate (Finale) also has rapid herbicide activity and will translocate to a limited extent. Glufosinate has a greater potential to provide more complete control of perennial weeds than diquat or pelargonic acid, but the extent of control is heavily dependent on application rate, environmental conditions and the perennial weed species.

In contrast to contact herbicides, glyphosate is a systemic herbicide that will translocate throughout the plant and will provide control of nearly all annual and perennial weed species. Its broad weed control, combined with many favorable toxicological and environmental characteristics, is a reason of its widespread use throughout the world.

The glyphosate product parade

Until recently, Monsanto marketed glyphosate primarily in the turf and ornamental industry under the brand name Roundup. In the 1990s, Monsanto reformulated glyphosate, and marketed Roundup Pro, which contained a proprietary adjuvant system that did not require the addition of non-ionic surfactant. Currently, Monsanto markets both liquid and dry formulations of Roundup Pro as well as Roundup Original, which does not contain a built-in adjuvant system.

Starting in the late 1990s, additional companies began marketing glyphosate-containing herbicide products. While increased competition can bring economic benefits to golf courses, there was a great deal of concern that these products would be formulated differently (in terms of adjuvant



system and amount of active ingredient) than the Roundup brand of products, leading to confusion about product-use rates and additions of non-ionic surfactant. Fortunately, although the brand names differ, these products are similar to the Roundup Pro and Roundup Original formulations. Cheminova offers Glyfos Pro and Glyphos; Dow AgroSciences offers Glypro Plus; Lesco offers Prosecutor Pro and Prosecutor; and

Riverdale offers Razor Pro and Razor.

In all cases, these products contain the same active ingredient (41 percent glyphosate) as the Roundup brand of products so that product-use rates are equivalent. The brand name with a Pro or Plus attached to it indicates that the product contains a built-in adjuvant system similar to Roundup Pro.

The notable exception to this similarity in products is Touchdown Pro, marketed by Syngenta. It has a different salt formulation and adjuvant system than other glyphosate formulations, and the addition of a non-ionic surfactant is recommended at spray volumes of 30 gallons per acre (GPA) or more.

Is faster activity better?

Visible injury symptoms on weeds treated with glyphosate are slower to develop in comparison with the other nonselective herbicides, and complete control of some weed species may take up to two to three weeks. To obtain more rapid herbicide activity, glyphosate is often tank-mixed with pelargonic acid (Scythe).

Recently, Monsanto introduced a combination product marketed as Quik-Pro, which contains a small amount of diquat. While superintendents may find these products beneficial for rapid weed control in and around clubhouse grounds, I would not recommend these products for situations that call for complete control of perennial weeds or turfgrass species. Use of pelargonic acid or diquat with glyphosate may desiccate treated foliage too rapidly, leading to reduced glyphosate translocation that results in incomplete control of perennial weeds or turfgrass species. ■

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