

What's Creeping You Out No

Ideas In Pest Management

Tips for Use of Tenacity™ Herbicide

By Dr. David Gardener, Associate Professor, Turfgrass Science OSU

Tenacity™ is a new herbicide from Syngenta. The active ingredient is mesotrione, which has perhaps the widest weed spectrum of any herbicide used in turfgrass. It has been available for use on golf courses for a couple of years. It has a very distinctive mode of action. It inhibits carotenoid pigment synthesis and results in a bleaching of the affected tissue which causes the target weed to turn white. Tenacity™ has many potential uses on the golf course. However, the label limits application to 16 ounces per acre per year (so two 8 oz applications or three 5 oz applications). Therefore, some thought should be given to how and when to use Tenacity™ in order to maximize its effectiveness.

Seedling Establishment or Overseeding

One of the difficulties that turf managers face when establishing turf from seed

is competition from weeds. Prior to the introduction of Tenacity™, there were two products labeled for control of weeds in newly seeded cool season turf: siduron and bromoxynil. Neither of these products are as effective as other herbicides used in cool season turf but their safety to turfgrass seedlings makes them a good option. Tenacity™ has excellent safety on Kentucky bluegrass, perennial ryegrass, and tall fescue. In fact, research conducted at Ohio State shows that Tenacity™ can be applied at seeding and results in no visible injury beyond 7 days after emergence nor any reduction in establishment rate. In the untreated controls there was as much as 70% crabgrass, purslane, and yellow nutsedge. The plots where 8 oz of Tenacity™ was applied, however, were 95-99% perennial ryegrass and weed free (Figure 1). This was the case whether applied as a liquid

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Untreated plot



Plot treated with Tenacity herbicide

or as a granular. In another trial where we did get some weed pressure, a second application of Tenacity was made 28 days after seeding and this basically eliminated the weed competition.

Selective Creeping Bentgrass Control

Tenacity™ is the first turfgrass herbicide that results in rapid, easy to visualize reductions in weedy perennial grasses (Figure 2). Tenacity™ has activity against a variety of perennial grassy weeds, including creeping bentgrass. Best control, according to

most research, of creeping bentgrass is achieved if three applications are made on 14-21 day intervals. Tenacity™ has excellent safety on Kentucky bluegrass and good safety on ryegrass and tall fescue. Some phytotoxicity has been reported when repeated applications are made to perennial ryegrass. However, this problem can be minimized by applying in cooler weather and also by avoiding making sequential applications too close together (make applications 21 days apart on ryegrass and 14 days apart on bluegrass). At OSU, we were



able to achieve 98% control of creeping bentgrass. Fall is the best time to begin a bentgrass removal program. Since Tenacity™ is safe to turfgrass seedlings, you should time the three applications so that you can over seed your desired turfgrass when the third application is made.

Some other perennial grasses are affected by Tenacity, such as nimblewill, orchardgrass, and bermudagrass. However, research is continuing on these grasses and no formal management recommendations are yet available.

Tenacity™ is a Very Broad Spectrum Herbicide

As a broadleaf herbicide, Tenacity™ has activity, both pre-and post-emergence, against a broad spectrum of broadleaf weeds. In many cases, a second application may be needed in order to achieve complete control of broadleaf weeds. Otherwise, one application will generally result in suppression of the weed, followed by re-growth in about 42-56 days. Dandelion is, however, an exception. Research at Ohio State suggests that you can expect about 70-85% control with either one or two applications. Our research also indicates that Tenacity™ has better activity on broadleaf weeds when combined with either dicamba or the pyridionxy herbicides fluroxypyr

or triclopyr. One important note is that our research also suggests that mesotrione does not combine well with either Quicksilver® or Dismiss® for broadleaf weed control. Tenacity™ has activity on clover. However, this is more suppression than control, particularly if only one application is made. When combined with pyridinoxy herbicides or dicamba, control of clover is improved.

Research conducted at Ohio State also suggests that you may achieve 100% control of crabgrass for 160 days when this product is used as a preemergence herbicide in combination with a product such as prodiamine. However, some other researchers have found it a bit less effective than this and you will want to check the label for specifics. It is also important to note this longevity of control if any overseeding projects are planned. In addition, our research suggests that mesotrione's activity on crabgrass when applied postemergence is at least as good as, and occasionally better than, that of quinclorac.

Putting it All Together

As previously stated, the label says you can apply 16 ounces per acre per year. If you have a weedy creeping bentgrass problem, then three 5 oz applications in the fall are appropriate. When you make the last application, you can overseed. If perennial broadleaf

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weeds are your only concern, there are many combination herbicides that perform better than Tenacity. However, if you are controlling bentgrass in late summer/early fall, you may get the additional benefit of some pretty good control of any broadleaf weeds that are in the treated area, which may mean you can skip your late fall postemergence broadleaf weed control treatment.

Tenacity is also a great product when establishing seedling turf in the springtime. Apply 8 ounces per acre at seeding. If competition from germinating weeds becomes a problem, a second

8 oz application can be made to the seeded area 21-42 days after the initial application, depending on the amount of weed pressure present.

Finally, if you are having problems with crabgrass control, Tenacity™ may help. Tenacity™ has been shown to improve and prolong the control of preemergence herbicides. It can also be used postemergence. Crabgrass control with any product can be quite variable. But, in trials at Ohio State University, we have seen Tenacity™ perform similar to, or better than, other postemergence crabgrass herbicides.