

TURFGRASS SCIENCE

at the University of Tennessee

Star-of-Bethlehem (*Ornithogalum umbellatum*)

Greg Breeden, Weed Science Extension Assistant
James T. Brosnan, Assistant Professor, Turfgrass Weed Science
Plant Sciences

Introduction

Star-of-Bethlehem (*Ornithogalum umbellatum*) is a perennial ornamental plant that has become a troublesome weed on golf courses, athletic fields and home lawns throughout Tennessee. It is often confused with wild garlic (*Allium vineale*) and wild onion (*Allium canadense*); however, Star-of-Bethlehem is more difficult to control with herbicides than these species. Non-selective herbicides like glyphosate (Roundup Pro™) often provide only marginal levels of control.

Star-of-Bethlehem Life Cycle in Tennessee

Star-of-Bethlehem is a cool-season perennial that emerges from bulbs (Figure 1) in the winter and early spring, and usually flowers during April in East Tennessee. After flowering and producing seeds, the plant will senesce and remain dormant throughout the summer months when temperatures increase. Star-of-Bethlehem reproduces mainly from bulbs; reproduction from seeds is minimal.

Star-of-Bethlehem Identification

Star-of-Bethlehem often grows in clumps of several individual plants (Figure 1). Leaves are hollow, dark green, have a distinctive white mid-rib and are covered with a waxy coating (Figure 2). Star-of-Bethlehem is easily confused with wild garlic and wild onion; however, unlike these species, Star-of-Bethlehem foliage does not produce a distinct odor when crushed. Underground ovate bulbs are the primary means of reproduction (Figure 3). The flowers produced in the spring have bright white petals with a prominent green stripe on the underside (Figure 4). Each flower has six petals.

Star-of-Bethlehem Control Options

Only a few herbicides exhibit activity against Star-of-Bethlehem in established warm- and cool-season turf (Table 1). Postemergence herbicide applications should be made in the spring once adequate Star-of-Bethlehem growth has occurred following winter frosts. Sequential applications may be required for complete control.



Figure 1. Star-of-Bethlehem (*Ornithogalum umbellatum*) clump



Figure 2. Star-of-Bethlehem (*Ornithogalum umbellatum*) leaves



Figure 3. *Star-of-Bethlehem* (*Ornithogalum umbellatum*) bulbs



Figure 4. *Star-of-Bethlehem* (*Ornithogalum umbellatum*) flower

Table 1. Postemergence herbicides for *Star-of-Bethlehem* (*Ornithogalum umbellatum*) control

Product Name	Active Ingredients	Rate/ac	Turf Species and Comments
Buctril	bromoxynil	1-2 pts (2EC) or 0.5-1 pt (4EC)	Repeat applications may be required; safe on most cool- and warm-season species; not for use on residential turf
Dismiss	sulfentrazone	8-12 oz	Safe on most cool- and warm-season species
Q-4	sulfentrazone + quinclorac + 2,4-D + dicamba	7-8 pts	Repeat applications may be required; safe on Kentucky bluegrass, tall and fine fescue, perennial ryegrass, dormant bermudagrass and dormant zoysia
QuickSilver	carfentrazone	2.1 oz	Repeat applications may be required; safe on most cool- and warm-season species; available only to professional applicators
Surge	sulfentrazone + 2,4-D + MCPP + dicamba	3-4 pts	Repeat applications may be required; safe on most cool- and warm-season species; available only to professional applicators

Research results from the University of Tennessee show that a single application of Dismiss™ can provide excellent control of Star-of-Bethlehem in established turf. Other products that contain sulfentrazone (the active ingredient in Dismiss™) are active against Star-of-Bethlehem, but sequential applications will be required to achieve complete control. Herbicides such as Quicksilver™ and Buctril™ have activity on Star-of-Bethlehem, but also require sequential applications for complete control.

Mowing should be delayed for 10-14 days after a postemergence herbicide application to control Star-of-Bethlehem.

Final Thoughts

Star-of-Bethlehem has become a common weed problem on golf courses, athletic fields and residential turf areas throughout Tennessee. A small group of postemergence herbicides can be used to control Star-of-Bethlehem in these areas. Always read the product label before applying a herbicide and follow use directions carefully.

Always refer to the product label for specific information on proper product use, tank-mix compatibility, and turfgrass tolerance.

For more information on turfgrass weed control, visit the University of Tennessee's turfgrass weed science Web site, <http://tennesseeturfgrassweeds.org>

Disclaimer

This publication contains herbicide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the herbicide applicator's responsibility, by law, to read and follow all current label directions for the specific herbicide being used. The label always takes precedence over the recommendations found in this publication.

Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others that may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product. The author(s), the University of Tennessee Institute of Agriculture and University of Tennessee Extension assume no liability resulting from the use of these recommendations.

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