

## Star-of-Bethlehem

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Star-of-Bethlehem (*Ornithogalum umbellatum*) is becoming a problem in no-till fields in southern-Indiana. At first glance, it might look like a thick mat of waxy grass or some kind of wild garlic with its long narrow linear leaves growing in tufts (Figure 1). This plant is actually part of the lily family, a close relative of wild garlic. It is a perennial growing year after year from underground bulbs (Figure 2). Little white star-shaped flowers with six petals will appear in the early summer (Figure 3). If you examine the underside of the petals you will often see green stripes.

Star-of-Bethlehem is one of Indiana's toxic plants although it is not a commonly reported problem. All parts of the plant contain cardiac glycosides. The highest concentrations occur

in the bulbs, which remain underground in most cases and do not come in contact with most grazing animals. Symptoms of toxicosis are stomach and intestinal irritation, this can be followed by heart rate and rhythm problems. If allowed to continue it can lead to fatal cardiac arrhythmias<sup>1</sup>.

Star-of Bethlehem is known for being non-responsive to several herbicides. Dr. Bryan Young of the Southern Illinois University conducted research in no-till soybean and corn<sup>2</sup>. Applications of paraquat (Gramoxone Max<sup>®</sup>) at 0.75 lb ai/A, glyphosate (Roundup<sup>®</sup>, etc) at 0.77 lb ai/A, and 2,4-D were applied mid-April in 2002 and then again in 2003 to 6 to 8 inch plants. Visual ratings were taken and bulbs were collected to investigate bulb biomass reduction.



**Figure 1. Long narrow leaves giving the appearance of wild garlic.**

Paraquat provided 70 to 78% control at one year after the 2002 application. Plots which had received glyphosate or 2,4-D applications had less than 29% control one year after spring application. When compared to the non-treated plot (6,248 bulbs per 10.8 foot squared) the paraquat treated plots had 88% less bulb density. The use of 2,4-D resulted in an increase of bulbs. Growth regulators do not appear to be effective in controlling star-of-Bethlehem. So, at this point in the season, use of paraquat would be the recommended practice for control of this weed.

### Reference:

<sup>1</sup>R.J. Goetz, T.N. Jordan, J.W. McCain, and N.Y. Su. (accessed 4/8/2005) Indiana Plants Poisonous to Livestock and Pets. Cooperative Extension Service, Purdue University. <http://www.vet.purdue.edu/depts/add/toxic/cover1.htm>

<sup>2</sup>J.A. Hagerman and B.G. Young. 2004. Control of star-of-Bethlehem prior to corn and soybean. North Central Weed Science Proceedings 59-19.



**Figure 2. Underground bulbs**



**Figure 3. White flowers of Star of Bethlehem**

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