

## **Horseweed (*Conyza canadensis*)**

### **Identification and Control in Christmas Trees**

Horseweed, also known as marestalk, is native to North America. It is a summer or winter annual weed in the sunflower family (Asteraceae). Horseweed grows very fast and can grow up to 6 feet or taller. Its leaves are alternate, linear, and simple with entirely or slightly toothed margins. Mature plants have leaves with no petioles (sessile). Leaves get progressively smaller in size toward the top of the plant. Stems are erect and tend to be unbranched at the base of the plant unless damaged by herbicides, mowing, or animal or insect feeding. Flowers are arranged in a panicle with numerous white ray flowers (1/16 to 1/8 inches long) and 20 to 40 yellow disk flowers. Horseweed is primarily a self-pollinating plant. The seeds are small achenes (1/16 to 1/4 inches long), with a pappus of tan to white bristles. Horseweed reproduces via seeds, which are generally spread by wind. Seed viability is generally 2 to 3 years but seed viability up to 20 years has been reported. Total seed production is proportional to plant height with taller plants producing up to 230,000 seeds.



Fig. 1. A horseweed rosette.



Fig. 2. Young horseweed plants.



Fig. 3. Horseweed inflorescence.

Horseweed seed germinates readily as soon as it falls off a mature plant. Seeds usually germinate in the fall or spring, but they also can germinate in midsummer. Optimum temperature for seed germination is in the 65 to 75°F range. Horseweeds germinating in July and August tend to remain as rosettes until the following spring, with only a few plants bolting and producing flowers in the fall. Following rosette formation, horseweed plants begin bolting in mid-April and start flowering at the end of July. Horseweed also contains allelopathic chemicals, which can inhibit germination and growth of several other plant species.

### Herbicide Resistance

In the United States, horseweed has developed resistance to many different herbicides such as ALS-inhibitors (chlorimuron and metsulfuron-methyl) EPSPS-inhibitor (glyphosate), PSI-inhibitor (paraquat), and PSII-inhibitors (atrazine, linuron, and simazine). Many horseweed populations in the United States are multiple herbicide resistant.

### Preemergence Control

Several registered preemergence herbicides such as atrazine (Atrazine 4L), flumioxazin (Sureguard), hexazinone + sulfometuron

methyl (Westar), indaziflam (Marengo SC, Specticle flo), isoxaben (Gallery 75 DF), oxyfluorfen (Goal 2XL, Goal Tender), and simazine (Princep 4L) can effectively control horseweed before emergence. Atrazine/simazine-resistant horseweed populations may exist on some Connecticut Christmas tree farms with a history of long-term use of these photosynthesis inhibitors.

### Postemergence Control

#### A. Seedling or Rosette Stage (April)

Horseweed rosettes (4 to 6-inch diameter) can effectively be controlled with 2,4-D (32 fl oz/A). When the 2,4-D rate is limited to 16 fl oz/A, combine with glyphosate at 32 fl oz/A of Roundup Original or equivalent. Clopyralid at 10.7 fl oz/A (Lontrel, Stinger, or Sonora), and triclopyr (Garlon 3A) at 16 fl oz/A, are other chemicals that can help keep this weed under control. Apply any of these herbicides over-the-top or as a semi-directed treatment using off-center nozzles while trees are still dormant (before any bud swell).

#### Horseweed 4 to 6 Inches Tall (Early May)

During this stage, the most effective treatment is a fully directed/hooded application of glyphosate (32 fl oz/A) plus 2,4-D (32 fl oz/A), or glyphosate (32 fl oz/A) plus clopyralid (10.7 fl oz/A).

#### Horseweed More Than 6 Inches Tall (Mid- to Late May)

Horseweed of this size will likely be difficult to control. Make a fully directed/hooded spot treatment of glyphosate at 48 fl oz/A. Clopyralid alone (10.7 fl oz/A) will not provide satisfactory horseweed control or suppression. Furthermore, the three-way weed suppression treatments (Goal + Stinger + Roundup) at (16 + 4 + 4 fl oz/A), respectively, may not have a lasting effect on horseweed greater than 6-inches.

**The mentioning of trade names in this publication is solely for the purpose of providing specific information. The CAES does not guarantee or warranty the products named, and references to them in this publication do not signify our approval to the exclusion of other products of suitable composition.**

#### **References**

1. Biology and Management of Horseweed.  
<https://www.extension.purdue.edu/exmedia/gwc/gwc-9-w.pdf>