

Management of Herbicide-Resistant Horseweed (Marestail) in No-Till Soybeans



Horseweed Biology

- Horseweed (marestail) has two primary periods of emergence – from late March through June and from late summer through late fall.
- Horseweed plants remain in the rosette stage through late March in the southern states to late April in northern states, followed by stem elongation (bolting) and rapid growth to an eventual height of 3 to 6 feet. Plants that emerge the previous fall will bolt earlier than spring-emerging plants.
- Horseweed competes with soybeans throughout the growing season and reduces crop yield. Horseweed matures in late summer or early fall, and produces up to 200,000 seeds per plant, which are readily dispersed by wind.

Herbicide Activity and Resistance in Horseweed

- Herbicide programs must include a spring burndown to ensure that the field is free of horseweed at soybean planting, and soil-applied residual pre-emergent herbicides to control horseweed for another six to eight weeks. Failure to follow these guidelines can result in poor control and reduced crop yield. A recent Ohio State University horseweed study with various herbicide scenarios resulted in the following soybean yields:
 - 51 bu./A. where the burndown treatment failed to control emerged plants
 - 57 bu./A. where the burndown treatment was effective, but there was no residual herbicide
 - 65 bu./A. where the burndown was effective and residual herbicides were used
- Horseweed is most easily controlled when in the seedling, or rosette stage, and spring burndown herbicides should be applied before stem elongation.
- Horseweed populations with evolved resistance to glyphosate or ALS-inhibiting herbicides (Group 2, such as Classic® and FirstRate®) are widespread, and many populations are resistant to both sites of action. Farmers

should therefore not expect to obtain effective control with postemergent herbicides, including combinations of glyphosate plus Classic, Synchrony® or FirstRate.

LibertyLink Soybeans — The Most Effective Strategy

- The LibertyLink® soybean system is the most effective tool for management of herbicide-resistant horseweed, especially in fields with high horseweed populations.
- Use burndown and residual herbicides as outlined on the next page. Apply Liberty® after emergence (29 to 36 oz./A.) before horseweed plants exceed 6 inches in height. Follow with a second application of Liberty as needed.

Management Steps

1. Use fall or early spring herbicide treatments in fields where horseweed seedlings are observed and especially in fields with a history of horseweed-control problems. The primary goal of a fall or early spring treatment is control of emerged plants. It should not be considered a substitute for a preplant or pre-emergent herbicide treatment later in spring. An application of burndown and residual herbicides is still required closer to planting in fields that were treated with burndown herbicides in the fall or early spring. For fall applications, we suggest using 2,4-D as the base herbicide to control horseweed and combining it with one or more of the following to ensure control of other winter weeds:
 - Glyphosate
 - Dicamba (can use premix, such as Brash® or Weedmaster®)
 - Basis®
 - A low rate of Canopy®/Cloak™ EX or DF
 - Autumn™ Super, or metribuzin
- For early spring applications, we suggest a similar approach using 2,4-D or dicamba as the base, and adding glyphosate and/or a reduced-rate application of a residual herbicide. Apply the remainder of the residual herbicide closer to the time of soybean planting.