

Multiple Resistant Marestalk has arrived in NNY

By: Mike Hunter, CCE NCRAT

Marestalk (a.k.a Horseweed) is a weed that can be found in many crop fields, fallow areas, ditch banks and along roadsides in NNY. This is a weed that is becoming a big problem for growers in Western and Central New York due to the fact that there are now significant populations of glyphosate and ALS resistant marestalk in that area of the state. We now have confirmed resistant marestalk populations that have been found in Jefferson County. Two fields were discovered in July and two more fields in August. Do not be surprised if more fields are added to this list as we approach harvest. This is a weed that can spread quickly within a field or easily move to neighboring fields.

Tillage practices can influence weed species shifts. Intensive tillage practices will reduce population densities of marestalk. Marestalk is more commonly found in no till and reduced tillage systems. For those not familiar with what marestalk looks like see the photo of marestalk in a no till soybean field in NNY (Photo 1 and 2).

Marestalk is a winter or summer annual which reproduces by seed. A mature marestalk plant is capable of producing as many as 200,000 seeds. It will germinate in the spring or late summer and fall. Those seeds that germinate in late summer will overwinter as a small rosette of leaves and grow a flowering stem in the early spring. A mature plant is capable of reaching heights of six feet tall. Most notable about marestalk is the seeds can easily be dispersed by wind. The seeds are attached to a featherlike structure or pappus, similar to a dandelion. Research studies in the mid-Atlantic Region of the U.S., suggests that once the seeds get into the sky they can easily disperse more than 100 miles.

Resistant marestalk can be a problem in corn, soybeans and wheat. However, it will be most challenging to control in soybeans due to the limited number of effective herbicide options. It will be even a bigger problem in no till and reduced tillage soybeans. With resistant marestalk populations beginning to show up in NNY we need to take a proactive management approach prior to planting.

Soybean growers must keep in mind that if glyphosate and ALS resistant marestalk is found in glyphosate tolerant (Roundup Ready) or conventional soybeans there are no effective postemergence herbicide control options for marestalk. Knowing that we have resistant marestalk present in NNY, a consideration would be to plant Xtend, Enlist or Liberty Link soybeans which would allow for the use of additional herbicides that could provide effective postemergence control of multiple resistant marestalk.

To successfully manage marestalk in no till and reduced tillage cropping systems it is important to implement control tactics in both the fall and spring. Fall management steps include the use of either a cover crop or a burndown herbicide program.

Management options for resistant marestalk in the fall:

- Planting a winter cereal cover crop such as rye has proven to be an effective strategy to suppress the growth of marestalk. It works best if the cover crop is seeded early enough so that it can provide the necessary biomass to suppress emerging winter annual weeds.

- No till growers that are not using fall planted cover crops should consider applying a fall burndown herbicide to control emerged marestail. It is especially important to do this if the field will be rotated to soybeans in the spring. Instead of using just glyphosate as the fall burndown program, we should consider including 2,4-D ester in the tank mix. It will still be necessary to use a burndown herbicide prior to planting in the spring.

Management options for resistant marestail in the spring:

- Use of tillage prior to planting to control any emerged marestail. Minimum tillage, including a one pass vertical tillage program, is not aggressive enough and will not fully uproot all the marestail plants. More aggressive or intensive tillage is required. If tillage is not used prior to planting, a preplant burndown herbicide alone or tank mixed with a residual herbicide will be necessary.
- Use an effective burndown herbicide program in no till soybeans. Do not no till soybeans in a field with actively growing marestail with the expectation that you will control it later on with a postemergence herbicide.
- Use an effective soil residual herbicide with the preplant burndown program or apply separately just prior to planting. This will include one or more of the following herbicides: flumioxazin (*Valor SX or flumioxazin containing products such as Valor XLT, Trivence WDG, Enlite, Envive, Surveil, Panther Pro*), Metribuzin (*Tricor or metribuzin containing products such as Boundary, Canopy*)

Let's be diligent and keep a lookout for potential herbicide resistant populations of marestail in NNY. We need to remain proactive and try manage herbicide resistant weeds to the best of our abilities. If you are finding higher populations of marestail or are not getting adequate control of this weed please contact Mike Hunter (315)788-8450 or Kitty O'Neil (315)854-1218.



Photo: M. Hunter- CCE NCRAT

Photo 1. Marestail in no till soybeans



Photo: M. Hunter- CCE NCRAT

Photo 2. Mixed population of herbicide resistant and susceptible marestail in Jefferson County August 2019