

Herbicide Resistant Horseweed in New York and Possible Implications for Perennial Crop Systems

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Horseweed (also called marestail) is a frequently occurring species in New York. It can be found growing in a variety of habitats, including along roadsides, in field crop and vegetable operations, and in berries, grapes, and tree fruit. Often considered a winter annual, horseweed has a wide germination window and seedlings can emerge in the spring, summer, and fall. Herbicide resistance, particularly to glyphosate, is widespread in the US and has recently been identified in New York (see the 2022 summer issue of Fruit Quarterly <https://nyshs.org/fruit-quarterly/>). Many of these populations were collected from soybean systems where glyphosate is frequently used for managing unwanted vegetation. Two New York populations, collected from a vineyard and an apple orchard in the Finger Lakes Region, were found to be susceptible to glyphosate but resistant to labeled rates of paraquat. Paraquat resistance in horseweed has been formally confirmed previously in Belgium (nurseries), Canada (peaches), Japan (orchards, grapes, roadsides, railways), California (almonds), Delaware (soybeans) and Mississippi (soybeans) (<https://weedscience.org/Home.aspx>).

Because of this finding, the Specialty Crop Weed Science lab at Cornell AgriTech in Geneva is interested in collecting seed, this summer and fall, from horseweed plants that escape weed control in tree fruit, berry, grape, and Christmas tree systems to better understand the distribution and degree of herbicide resistance in perennial crop production environments. Horseweed seed is wind-dispersed and resistance traits can be easily disseminated across the landscape. Growers should contact their local CCE specialist or Lynn Sosnoskie in Geneva (lms438@cornell.edu) for assistance if they believe they have resistant horseweed on their farms. For more information about horseweed identification, please see: <https://blogs.cornell.edu/weedid/field-crops/horseweed/>.

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Horseweed seedlings growing in the greenhouse.



Horseweed rosette with long and linear, irregularly toothed leaves.



Bolting horseweed plant.



Suspected paraquat-resistant horseweed in apples.



