

Diagnostic Facts &



Diagnostic Services Michigan State University

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Screening for Herbicide-Resistant Marestail in Soybean Production Systems

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arestail (*Conyza canadensis*), also known as horseweed, has become a troublesome weed in many parts of the Eastern U.S. in recent years for many reasons. Marestail prefers reduced tillage situations. The adoption of no-till soybeans has provided a window of emergence that was otherwise not there. Marestail has a very long emergence period - much longer than some weeds. Marestail can emerge in the fall and overwinter as a small rosette or

emerge in the spring with other summer annual If allowed to weeds mature, a single marestail is capable plant producing thousands of wind-disseminated seed. Burndown applications glyphosate and/or 2,4-D in no-till soybeans can be quite variable depending upon height of marestail and environmental conditions. Moreover, control of marestail has

become more problematic due to the development of herbicide-resistant populations. Currently, glyphosate-resistant marestail has been confirmed in at least ten states. ALS-resistant marestail has been confirmed in OH, Indiana, and in 11 locations spanning seven counties in Michigan.

Marestail Identification

Marestail is a winter or summer annual plant that first forms a small, basal rosette and then an erect, 1 to 5 foot tall stem. Young rosette leaves have toothed to lobed leaf margins, prominent petioles, and are covered with short, stiff hairs (Photo 1). Leaves produced on the main stem are alternate in arrangement, numerous, often crowded on the

stem, and covered with coarse, stiff hairs (Photo Stem leaves are long and narrow, sessile to short-petioled, with toothed but usually entire leaf margins (Photo 2). Mature plants produce an erect stem that is unbranched at the base but often branched at the seedhead and covered with short, bristly hairs. Branches from the main produce stem many slender flower stalks with



Photo 1. Small basal rosette of marestail.

numerous, small, white flowers (Photos 3 and 4). Being an annual member of the aster family, a mature marestail plant is capable of producing thousands of wind-disseminated seed. This seed, much smaller and lighter than dandelion seed, is able to blow considerable distances by wind.

Herbicide Resistance Screen

We are asking for your assistance in scouting and sampling for herbicide-resistant marestail. Glyphosate and ALS inhibitors are very important to Michigan soybean producers. Identifying herbicide resistant marestail populations in Michigan will allow growers and Ag professionals to recognize the problem and implement appropriate management strategies, with the goal of preventing or limiting its spread. To address this problem, marestail will be screened for glyphosate, ALS, and triazine resistance in Diagnostic Services at Michigan State University. This service is FREE to Michigan soybean producers. All sample costs are covered by checkoff dollars through the Michigan Soybean **Promotion Committee.**

If you have fields where marestail has been a problem and resistance is suspected, collect seedheads from mature plants in late summer to early fall. Consult the marestail submittal form for detailed sampling instructions on field criteria and seedhead collection.



Photo 2. Long and narrow leaves found crowded on erect, central stem of marestail.



Photo 3. Closeup of small, numerous, white flowers of marestail.

Marestail submittal forms will be available at various locations, including county MSU Extension offices,

grain elevators, and chemical retail businesses. Marestail seedheads and the submittal form should be dropped off at your local county MSU Extension office or sent directly to:

MSU Diagnostic Services 101 Center for Integrated Plant Systems East Lansing, MI 48824 Attn: Steven Gower

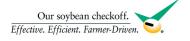
If you have any questions, please call Steven Gower at 517-432-9693 or send an email to sgower@msu.edu.



Photo 4. Mature marestail seedhead.



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