



Diagnostic Facts



Diagnostic Services
Michigan State University

MSU-DS05

www.cips.msu.edu/diagnostics

April 2004

Screening for Herbicide-Resistant Marestalk in Soybean Production Systems

Steven Gower, MSU Diagnostic Services

Marestalk (*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. Marestalk prefers reduced tillage situations. The adoption of no-till soybeans has provided a window of emergence that was otherwise not there. Marestalk has a very long emergence period - much longer than some weeds. Marestalk can emerge in the fall and overwinter as a small rosette or emerge in the spring with other summer annual weeds. If allowed to mature, a single marestalk plant is capable of producing thousands of wind-disseminated seed. Burndown applications of glyphosate and/or 2,4-D in no-till soybeans can be quite variable depending upon the height of marestalk and environmental conditions. Moreover, control of marestalk has become more problematic due to the development of herbicide-resistant populations. Currently, glyphosate-resistant marestalk has been confirmed in at least ten states. ALS-resistant marestalk has been confirmed in OH, Indiana, and in 11 locations spanning seven counties in Michigan.

Marestalk Identification

Marestalk 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 2). 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 stem produce many slender flower stalks with numerous, small, white flowers (Photos 3 and 4). Being an annual member of the aster family, a mature marestalk 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.



Photo 1. Small basal rosette of marestalk.

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.



**This effort is funded by
Soybean Checkoff Dollars**

Our soybean checkoff.
Effective. Efficient. Farmer-Driven.

**MICHIGAN STATE
UNIVERSITY
EXTENSION**

MSU is an Affirmative-Action Equal Opportunity Institution. Extension programs and materials are open to all without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, marital status, or family status. Issued in furtherance of MSU Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Margaret A. Bethel, Extension Director, Michigan State University, E. Lansing, MI 48824. This information is for educational purposes only. References to commercial products or trade names does not imply endorsement by MSU Extension or bias against those not mentioned. Reprinting cannot be used to endorse or advertise a commercial product or company.