

2017 Status of Herbicide-Resistant Weeds in Michigan

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In 2016 yet another record number of plant samples were submitted for herbicide resistance screening to MSU Diagnostic Services. Seventy samples were submitted in total, a 52% increase over 2015. The 2016 samples included Palmer amaranth (2), Powell amaranth (3), redroot pigweed (3), common waterhemp (11), common ragweed (6), giant ragweed (3), common lambsquarters (5), and horseweed/marestail (36), and eastern black nightshade (1). Each sample received was tested for resistance to five or six herbicide Sites of Action. Fifty of the samples were sponsored by the Michigan Soybean Promotion Committee Weed Resistance Sampling Program. Non-sponsored samples came from field crop rotations without soybean, vegetable rotations, or were species not covered by the MSPC Program.

Though many of the screenings revealed that weeds previously known to be resistant in Michigan had spread to new counties, there were three new incidents of resistance.

1. Common ragweed
 - a. Multiple resistant: PPO (Group 14)-resistant - Flexstar/Reflex (fomesafen) and ALS (Group 2)-resistant - FirstRate (cloransulam)
 - b. Locations: Huron and Saginaw counties
2. Giant ragweed
 - a. Glyphosate (Group 9)-resistant
 - b. Location: Macomb county
3. Eastern black nightshade
 - a. ALS (Group 2)-resistant – Raptor (imazamox) and Pursuit (imazethapyr)
 - b. Location: Huron Co.

Please view the full listing below for all of the new incidents and locations of resistance that were confirmed. A cumulative listing of confirmed herbicide resistant weeds by county was released in 2016 on the Diagnostic Services website (<https://pestid.msu.edu/resistant-weeds-michigan/>) and has been updated to include these latest screenings.

We will be conducting herbicide resistance testing again in the fall of 2017. Please view “[Tips for collecting weed seeds: Ensure your resistance sample gets tested](#)” or “[How to submit a sample to MSU Diagnostic Services](#)” in the back of the 2017 Weed Control Guide for Field Crops (E-434) for more information on submitting a sample. The sample submission deadline is November 10, 2017 to ensure enough time for our team to break seed dormancy and conduct the screenings. If you have any questions regarding sample submissions, please contact Erin Hill (hiller12@msu.edu) for more information.

New county locations and/or incidents of resistance confirmed from 2016:

**G# refers to the herbicide site of action group*

Common waterhemp

- Multiple-resistant (glyphosate-G9/ALS-G2): Clare, Gratiot, Kent, Ottawa, Tuscola Co.

Powell amaranth

- ALS-resistant (acetolactate synthase inhibitor, G2): Gratiot, Ingham, Tuscola Co.

Redroot pigweed

- ALS-resistant (G2): Benzie, Ottawa Co.

Common ragweed

- Multiple-resistant (glyphosate-G9/ALS-G2): Antrim Co.
- Multiple-resistant (ALS- G2/ PPO- G14): Huron, Saginaw Co.
- ALS-resistant (G2): Eaton Co.

Giant ragweed

- Glyphosate-resistant (G9): Macomb Co.

Common lambsquarters

- ALS-resistant (G2): Ottawa Co.

Horseweed/marestail

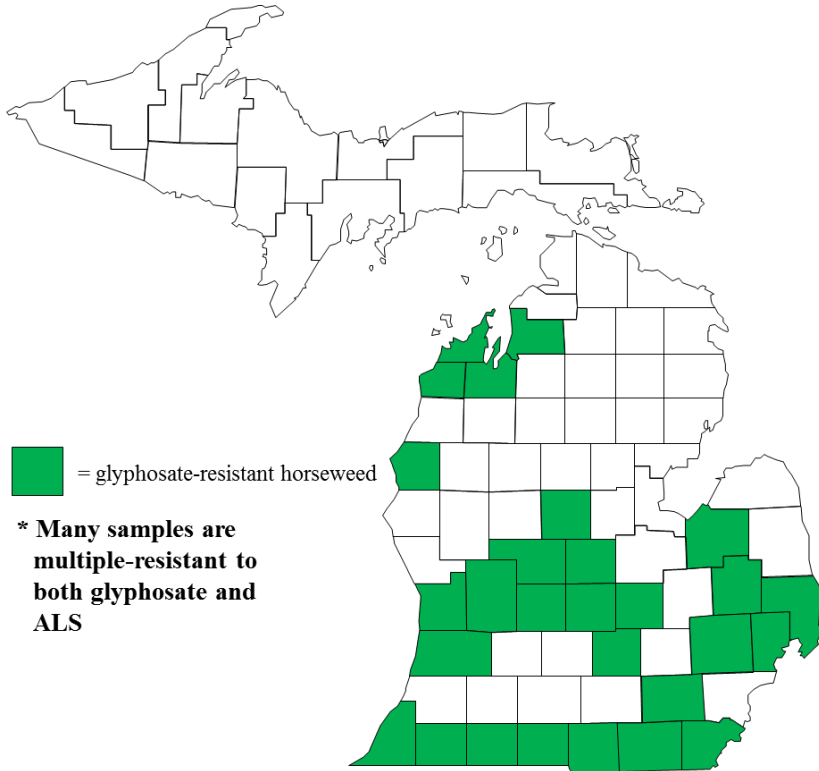
- Multiple-resistant (glyphosate-G9/ALS-G2): Allegan, Ingham, Kent, Tuscola Co.
- Glyphosate-resistant (G9): Antrim, Benzie, Grand Traverse, Kent, Leelanau, Ottawa Co.
- ALS-resistant (G2)- Gratiot, Kent Co.

Eastern black nightshade

- ALS-resistant (G2)- Huron Co.

Horseweed/marestail

glyphosate resistant



Common and giant ragweed

glyphosate resistant

