

FIELD CRITERIA

Field criteria listed below can serve as guidelines when collecting seedheads suspected of being herbicide resistant.

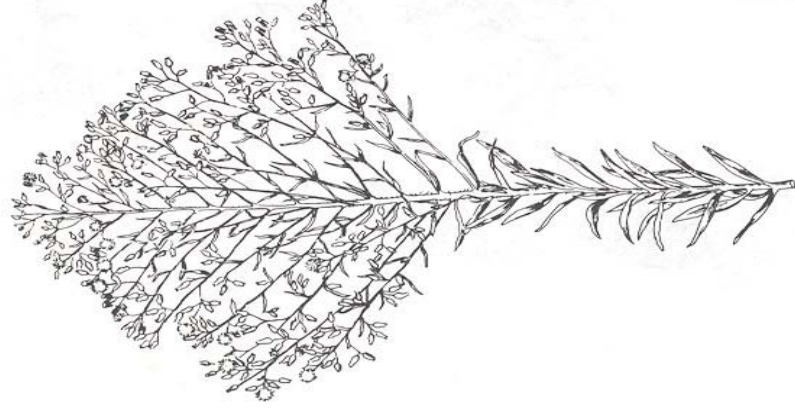
- Seedheads should be collected from soybean fields where:
- Weeds have survived a glyphosate burndown application and/or an in-season POST application of glyphosate.
 - Weeds were not controlled with ALS-inhibiting herbicides.
 - Multiple and repeated applications of glyphosate and/or ALS-inhibiting herbicides have been used.
 - Weed control is inadequate and resistance is suspected.

Note: These fields would have received the most selection pressure and thus the greatest likelihood of selecting for resistance to glyphosate or ALS-inhibiting herbicides. Fields should be scouted regularly for the presence of weed escapes.

SEEDHEAD COLLECTION

These guidelines should be followed when collecting seedheads:

- Select plants that were definitely sprayed with an ALS-inhibitor or glyphosate. Avoid obvious unsprayed areas.
- Select plants with **no** injury or very little injury (no chlorosis, necrosis or stunting).
- Select only those plants that have a majority of mature seed, which could be in late summer to early fall. A good indication of seed maturity would be when seed easily fall from the seedhead. Sampling too early or too late will likely result in seed with low viability.
- Harvest plants by cutting the top of the plant just below the seedhead.
- Harvest seedheads from at least 5 plants.
- **Place seedheads into a large paper bag. Do not seal in plastic!**
- Remember, the reliability of results based on greenhouse plant assays is largely dependent upon the quality of seed collected. Time should be taken to collect mature seedheads from representative plants in the field.



FREE Screening for Herbicide- Resistant Weeds in Soybean Production Systems

**WEED RESISTANCE SAMPLING PROGRAM
FREE ANALYSIS INCLUDES
HORSEWEED/MARESTAIL, COMMON LAMBSQUARTERS,
COMMON RAGWEED AND GIANT RAGWEED**



This effort is funded by Soybean Checkoff Dollars



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Screening for Herbicide-Resistant Weeds

Herbicide resistance in weeds is a growing concern for growers, due largely to the recent occurrence and spread of glyphosate-resistant horseweed and occasional failure to control common lambsquarters, common ragweed and giant ragweed in Roundup Ready crops. Horseweed is also a problem in fruit crops, tree plantations, nurseries and any other location where tillage is limited. In 2007, glyphosate-resistant horseweed was confirmed in a Christmas tree plantation in Mason County, Michigan.

Confirming herbicide-resistant weed populations is the first step of any resistance management program. Verification will provide producers with the knowledge to implement the best possible management strategies, with the ultimate goal of preventing or limiting the spread of herbicide-resistant weeds.

Because of the many benefits that glyphosate offers Michigan soybean growers and the high potential for developing glyphosate resistance, an ongoing herbicide resistance screening program has been expanded for 2008. Diagnostic Services at Michigan State University will conduct free glyphosate and ALS resistance screening for soybean producers. The program is funded by the Michigan soybean checkoff program and covers four weed species: horseweed/marestail, common lambsquarters, common ragweed and giant ragweed.

Seedheads from mature plants should be collected in late summer to early fall following appropriate guidelines listed below. If you have any questions about field criteria or seedhead collection, please call Steven Gower at 517-432-9693 or by email at sgower@msu.edu.

SAMPLE DELIVERY INSTRUCTIONS

1. Please fill out this form as completely as possible.
2. **One completed form should accompany every weed sample submitted.**
3. Return both the form and seedheads to your local county MSU Extension Agent. Samples will be forwarded to MSU Diagnostic Services.
4. Or, send samples directly to:
Diagnostic Services
101 Center for Integrated Plant Systems
East Lansing, MI 48824

GROWER INFORMATION

Name: _____
 Address: _____
 City: _____ MI Zip: _____
 Phone: _____ Fax: _____
 Email: _____

County: _____
 MSU Extension Agent: _____
 Township: _____ Section: _____

Field Identification/GPS Coordinates: _____
 Number of Acres: _____

Sample should be submitted even if all information cannot be provided.

FIELD HISTORY

| Year | Crop | Tillage | Herbicide |
|------|---------|---------|----------------------------|
| 2008 | Soybean | | Burndown: PRE: POST: |
| 20__ | | | Burndown: PRE: POST: |
| 20__ | | | Burndown: PRE: POST: |
| 20__ | | | Burndown: PRE: POST: |
| 20__ | | | Burndown: PRE: POST: |