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kochia@mbpestlab.ca

## **Suspected Glyphosate Resistant (GR) Kochia: 2016 Sampling Project**

### **Background:**

In 2014, glyphosate-resistant (GR) kochia populations were confirmed in Manitoba. Pest Surveillance Initiative (PSI), in conjunction with Manitoba Agriculture (MAg) and the University of Manitoba, is collecting leaf materials from suspected GR kochia from across Manitoba to determine the extent of resistance to glyphosate. PSI uses DNA methodology developed by Colorado State University to determine both the presence of resistance and the levels of glyphosate tolerance within suspected GR kochia populations. This approach allows for a more rapid identification of suspected resistance in plants that did not respond to glyphosate application because it doesn't require seed production of the suspected resistant plants.

A single kochia plant can produce ~14,000 seeds. While seed longevity is poor, seeds can spread by wind, water and equipment. Rapid identification of resistant plants is key to containing and slowing the spread of GR kochia bio-types into new fields.

### **What to look for:**

Patches of actively growing kochia plants or patches of kochia plants with individuals showing a range of injury symptoms (from no injury to completely dead) approximately 2 weeks after an application of glyphosate.

### **How to Submit Suspected Resistant Plants:**

1. Prior to sampling, take a photo of the plants in the 'patch' - this provides information on injury symptoms and helps assess escapes vs suspected GR kochia plants.
2. Each green Kochia plant must be sampled and bagged separately. **Do not** composite samples.
3. Collect the top 2-3 inches of each branch on each plant-the goal is to have a minimum of 5 to 8 tips of young leaf material from each plant.
4. Using a waterproof marker record date, GPS, legal land description and RM on a sealable Ziploc type bag.
5. Place bagged sample(s) on ice immediately upon collection - as DNA begins to degrade as soon as the leaves are removed from the plant.
6. Complete PSI sample submission form (attached). Email submission form and photo of the 'patch' to kochia@mbpestlab.ca with the legal land description in the subject line.
7. PSI can provide return shipping information for samples that need to be delivered; or will accept delivery of samples at the lab.
8. DNA will be extracted from the submitted plants and results will be reported to the submitter; test results are analyzed and generally made available within 5 business days of sample submission.
9. Only aggregate results will be posted by RM on the PSI website. Individual results will not be shared.



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**SAMPLE SUBMISSION FORM: Suspected glyphosate resistant Kochia**

**REMEMBER TO ATTACH A PHOTO OF THE PATCH WITH YOUR SUBMISSION**

Name:		
Telephone:		
Email:	Rural Municipality:	Legal Land Description
GPS coordinates		

**Consent and Signature of submitter:**

1. I consent to allowing Pest Surveillance Initiative staff access to the plant samples collected from the field described above.
2. I consent to my personal information being disclosed to the Pest Surveillance Initiative to the extent reasonably necessary to participate in surveillance initiatives.
3. I consent to the use or disclosure of my information to Manitoba Agriculture, Food and Rural Development for one or more of the following purposes:
  - detecting, preventing, controlling, managing and eliminating pests;
  - analyzing the geographical distribution of disease and the epidemiology of pest outbreaks;
  - conducting assessments and models to manage pests.

The submitter's personal information is protected under the privacy provisions of FIPPA. If you have questions concerning the collection, use or disclosure of this information please contact: Privacy Coordinator, Pest Surveillance Initiative (PSI).

Signed on this \_\_\_ day of \_\_\_\_\_, 201\_\_:

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

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