

How To Submit Samples To The Crop Protection Laboratory

The accuracy of our laboratory's diagnosis of your sample is dependent on the quality of the sample submitted and the inclusion of relevant information. Below are some tips on how to sample, package and submit specimens, as well as information on how to fill out the submission form.

Weed Samples

Sampling

- Choose several samples showing as many growth stages as possible.
- Collect whole samples including roots where possible.
- Ideally, flowering and fruiting stages should be represented as the most distinctive morphological features are seen at these stages.
- Record the habitat, plant features (height, flower colour, odor etc.), abundance (single plant to common species), growth habit (erect, creeping etc.), nature (annual, biennial, perennial), and any factor that might be significant.

Preserving and Packaging

- Plants can be placed between dry absorbent paper (e.g. newspaper) on a flat surface and pressed by adding weight on top of the plants in the paper. Pressed plants should be checked for moisture and replace the paper if wet. More frequent inspection is required in the early stages of pressing. Once the plants are dry they should be placed in rigid containers that do not allow the specimens to be damaged in shipping. Placing dried specimens between rigid pieces of cardboard is effective.
- Plants requiring urgent identification may be shipped immediately, without pressing, loosely wrapped in dry paper towel to prevent damage during shipping. A rigid cardboard container containing packing materials to prevent movement in shipping is appropriate.

Note: although the above conditions are ideal we will attempt to work with plant specimens at any growth stage and in less than ideal conditions. On occasion a lone seed may be enough to identify a plant to the species level. However some identifications will be more difficult and a positive identification may not be possible without all growth stages being represented.

Insect Samples

Sampling

- The sample to be submitted should include several specimens showing as many life stages as possible. The larva or nymphs and adults are the most useful for identification and rarely will eggs or pupae be of much value for specific identifications. Choose as many stages as possible of the larvae or nymph.
- Include information associated with the specimen the habitat (animal pest, plant pest, substrate), location (house, yard, field etc.), type of injury caused to host, numbers (few to numerous), and distribution (scattered, common throughout etc.).

Preserving and Packaging

- Soft-bodied stages of insects should be preserved in 70 per cent alcohol or maintained in substrate (medium in which the insects are living). Alcohol may be obtained in most drug stores and larger quantities are available from lab supply companies.

- Place insects in well-sealed vials or jars (plastic) and then place these in rigid containers with packing materials to prevent breakage during shipping.
- If the insects are to be maintained in their substrate, the insect and substrate should be placed in a large plastic bag that will maintain the humidity of the sample and allow some free air.
- If the substrate is soil or of a loose abrasive structure, the insects should be removed and placed in alcohol. If this is not convenient, then the substrate should be tightly enclosed in plastic to avoid injury to the insects in transit.
- Hard bodied insects (i.e. most beetles) may be placed in a rigid container (vial, pill bottle, jar, etc. and lightly supported with tissue paper to avoid damage during shipping.
- Insects with easily removed scales such as butterflies and moths should ideally be pinned to a small piece of material such as Styrofoam and packed in a rigid position to avoid injury in transit.
- When shipping in live insects, provide the appropriate host plant for nourishment.
- Most insects may be killed by placing them in a freezer overnight – this can facilitate handling.

Plant Disease Samples

Sampling

- Choose specimens showing various stages of disease symptoms (light to severe symptom). Include some healthy specimens for comparison.
- If possible, whole plants, including roots, should be submitted (many symptoms seen in above ground plant parts may result from root infection).
- Record the plant parts affected, symptoms observed, distribution within the plant population, and cropping history.
- If there is any possibility of herbicide being implicated, please provide information on chemical use both in the present cropping season and for the previous four years if available.
- It is important to note the fertilizer regimen, including timing of application, rate of application, and the form of the fertilizer used. The previous year's fertilizer applications should also be noted.

Packaging and handling

- Wrap specimens in dry paper towel.
- If the sample includes the root system with soil attached, put this portion into a plastic bag and tie it off at the base of the stem. Leave the above ground parts loosely packed in dry paper towel.
- Submit the sample in a rigid container, loosely packed in dry packing material such as newspaper.
- Note: if a viral infection is suspected, please submit living plants when possible, e.g. dig up infected plants and place in a container and transport to the lab immediately. If this is not possible wrap the detached plant material that is showing symptoms in slightly moistened paper towel and submit to the lab as quickly as possible.

Herbicide Resistance Testing

Sampling

- If possible, collect only mature, healthy seed from the suspect plants. Green or diseased seed will not germinate properly and will impede the diagnosis or make testing impossible.
- A minimum of a thousand seeds per herbicide group is desirable. When there is a need for several groups of herbicides to be tested, number of seeds should be increased accordingly.
- Collect seed from specimens that appear to have survived the herbicide application. If other labeled weeds have been controlled in the area, there is stronger reason to suspect resistance.

- Note the present crop and crops from the previous four years, the herbicide used and its rate of application, the timing of application (month, year, growth stage of crop, growth stage of weed), climatic conditions around the time of application, the weed's distribution and level of control.
- Do not submit seed that has been treated with a preharvest herbicide.
- Indicate the chemical group(s) that you want to be tested.
- Samples are processed on a first-come first-serve basis with the duration of the test varying with the group and type of weed being tested.

Packaging and handling

- ALLOW SEEDS TO AIR DRY BEFORE SHIPPING! This is done by placing the seeds in paper bags and allowing them to air dry for a few weeks in a dry environment. This prevents mold developing in shipment. **Note:** It is not critical to get the samples to the lab quickly, as testing will not commence until January because the seeds must have time to break their dormancy period.
- Seed should be relatively clean with as little foreign material as possible.
- Once the seeds are dry, they should be packaged in any durable container, including strong plastic bags and then placed in sturdy cardboard containers (or equivalent) prior to shipping to the lab.

NOTES (For All Samples Submitted)

- Never add water to the samples or the packaging as this will result in rotting or saprophytic growth. *(The only exception is for disease samples where viral causal agents are suspected. For specimens of this nature, the sample needs to be maintained in as fresh a state as possible. For above ground parts showing symptoms, wrap individual parts between lightly moistened paper towels and ship to the lab as quickly as possible).*
- If possible, avoid sending in fresh specimens over the weekend to prevent decay in shipping.
- A sample cannot be too large, but it can be too small.
- The information about the sample may be as significant as the sample itself, so provide as much information as possible.
- When possible, use a Crop Protection Diagnostic Form available on this web site.

The Crop Protection Diagnostic Form

This form should accompany all samples. If the form is not available, please write down the information requested above and submit this data with the sample. The form will simplify the recording of information. The form is divided into six sections and should be filled out as follows:

Section 1

- Fill out completely for any sample submitted.
- The check box at the bottom is for confidentiality.

Section 2

- Section 2 need only be filled in if the grower and submitter are different.
- Leave the date received blank, as the lab will fill this out upon receipt of the sample.
- If you would like to receive control measures for the problem, indicate by using this check box.

Fees area

- If unsure whether a disease sample should be visual or cultural, you may attach a note to process as required.
- Please leave the total charges and explanation area blank.

Section 3

- The type of agriculture should be checked off for all samples.
- The other relevant information area should be used to indicate any additional information that may be useful for the diagnosis.
- Fertilizer, timing, and weather are significant for disease and chemical injury samples.

Section 4

- Fill out this section **ONLY** if the sample submitted is for weed identification.

Section 5

- Fill out this section **ONLY** if the sample being submitted is for insect or disease identification.

Section 6

- Fill out this section **ONLY** if the sample being submitted is for herbicide resistance testing, or for visual analysis where chemical injury may be an issue.

Section 7

- Fill out this section **ONLY** if the sample is for herbicide resistance testing.

The Diagnosis and Recommended Treatment area is to be left blank, as this area is used for reply/analysis.

NOTES:

- If there is insufficient space on the form for all the pertinent information, attach a separate piece of paper with these additional details.
- A hand-drawn map showing the distribution or the area of concern may be attached with the form; this is particularly significant where herbicide drift is suspected.
- The length of time it takes to make a diagnosis of specimens submitted depends on the nature of the submission. For example, weed or insect identifications are based on morphological features and are usually complete within one day of being received. If the causal agent for a disease submission is not visually determinable, culturing is required and typically takes about a week to complete, but can take longer depending on the nature of the pathogen.

Call us at 306-787-8130 if there are any questions. It is better to inquire before the submission rather than risk impairing the value of the sample.

Crop Protection Diagnostic Form

Inquiry Number

Send samples to:
Crop Protection Laboratory
3085 Albert Street
Regina, SK S4S 0B1 (306) 787-8130

1. Date Submitted _____
Owner/Grower _____
Address _____
Town/City _____
Postal Code _____
Telephone _____
 Send Reply to Owner/Grower ONLY

2. Date Received _____
Submitted by _____
Address _____
Town/City _____
Postal Code _____
Telephone _____
 Require control measures?

Fees (GST) will be added
Check appropriate box(es)
 Insect Identification \$10
 Plant Identification \$10
 Disease ID (Visual) \$20
 Disease ID (Cultured) \$40
Herbicide Resistance
 Group 3 - Green Foxtail \$35
 Group 1 - Green Foxtail \$60
 Group 1 - Wild Oats \$100
 Any Other \$90
Total Charges _____
Explanation _____

3. General Information

Please check one
 Commercial Agriculture
 Greenhouse
 Home/Garden/Yard
 Other (Describe) _____

To be completed for disease identification or herbicide tolerance testing applications.

Fertilizer (Date and Rate) _____ Previous Year _____
When were symptoms first noticed? _____
Weather conditions prior to appearance of symptoms: _____
Other relevant information: _____

4. Weed/Plant Identification

Habitat	Features	Abundance	Habit	Nature	Specific Information
<input type="checkbox"/> Annual Crop/Fallow	Plant Height _____ Plant Colour _____	<input type="checkbox"/> 1 Plant	<input type="checkbox"/> Herb	<input type="checkbox"/> Annual	_____
<input type="checkbox"/> Forage/Rangeland	Plant Texture _____ Plant Odour _____	<input type="checkbox"/> Few	<input type="checkbox"/> Shrub	<input type="checkbox"/> Biennial	_____
<input type="checkbox"/> Park/Garden/Yard	Type of Root _____ Flower Odour _____	<input type="checkbox"/> Many	<input type="checkbox"/> Tree	<input type="checkbox"/> Perennial	_____
<input type="checkbox"/> Body of Water	Flower Colour _____ Fruit Size _____	<input type="checkbox"/> Common	<input type="checkbox"/> Erect		_____
<input type="checkbox"/> Non-crop Land	Fruit Colour _____ Fruit Type _____		<input type="checkbox"/> Creeping		_____

5. Insect and Disease Identification (Section six must also be completed for disease diagnosis or herbicide resistance testing.)

Host Name ⇨ Plant _____ Animal _____ Food/Fabric _____ Other (Specify) _____

If a plant, check off appropriate boxes

Parts affected	Symptoms	Distribution	Cropping History
<input type="checkbox"/> Roots	<input type="checkbox"/> Wilting	<input type="checkbox"/> Groups	Year _____
<input type="checkbox"/> Stems/Branches	<input type="checkbox"/> Discolouration	<input type="checkbox"/> Scattered	Year _____
<input type="checkbox"/> Leaves	<input type="checkbox"/> Stunting	<input type="checkbox"/> Slopes	Year _____
<input type="checkbox"/> Flowers	<input type="checkbox"/> Dead Areas	<input type="checkbox"/> Knolls	Year _____
	<input type="checkbox"/> Leaf Spots	<input type="checkbox"/> Low Area	Year _____
	<input type="checkbox"/> Tunnelling	<input type="checkbox"/> Patchy	
	<input type="checkbox"/> Chewed Leaves		
	<input type="checkbox"/> Abnormal Growth		

6. Pesticide Application Made to Field (Preseeding, in crop, pre and post harvest)

Year	Crop	Product	Rate of Product	Application Date
				Mo _____ Yr _____
(Present)	_____	_____	_____	_____
▼	_____	_____	_____	_____
(Previous)	_____	_____	_____	_____
▼	_____	_____	_____	_____
▼	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

7. Herbicide Resistance Testing

Due to the dormancy characteristics of wild oat and other weed seeds, the test results may not be available for four or more months from the time the sample is received. ▼

Weed _____
Herbicide group to be tested for _____
Crop variety _____
Date seeded _____

Herbicide Application Information ▼

Date applied _____
Rate of application _____
Temperature: at application _____
1 Week Before _____ 1 Week After _____

Weeds Data (Most common weeds present)

Weeds Data	Stage at Application	Control
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____
4) _____	4) _____	4) _____

By providing information on this form, you are giving Saskatchewan Agriculture, Food and Rural Revitalization consent to use your information for program delivery, development and/or evaluation purposes. It may also be used to provide you with information on additional programs from which you may benefit.

Diagnosis/Identification and Recommended Treatment

Scientific Name _____ Common Name _____

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