Sample Collection and Submission Instructions – Plant, Seed, and Soil Samples

Remember, taking a good sample is vital to obtaining useful laboratory results. Molecular assays conducted on plant samples RELY HEAVILY ON QUALITY SAMPLING PROCEDURES in order to produce quality results.

Plants

1. Carefully examine all plant parts and determine those parts which are thought to be diseased (note that diseased roots can cause symptoms such as wilted leaves).
2. Ideally the whole plant should be sent when possible (small plants or seedlings). Place the root ball in a plastic bag and tie it with string or rubber band to separate it from the rest of the plant so the soil does not contaminate the foliage. Wrap the plant in dry paper towels or newspaper and place in a zipper-seal plastic bag.
3. If the plant is too large to ship as a whole in a single bag:
    - Place fresh leaves in a zipper-seal plastic bag wrapped with a dry paper towel. Include multiple healthy and suspected diseased leaves.
    - Wrap cut stems/stalks in a dry paper towel and place in a zipper-seal plastic bag.
    - Shake roots free of soil, wrap in a lightly dampened paper towel and place in zipper-seal plastic bag.
4. Once plant materials are packaged, clearly label each bag with a permanent marker for identification. The identification (ID) label on the sample bags need to match the Specimen ID # listed on the Submission Form.
5. All shipments must be accompanied by a Submission Form. Send samples and Submission Form to the lab as soon as possible. Please do not place the Submission Form inside a container that contains the plant material, rather place the Submission Form inside the shipping box, but outside of the sample container. If the sample cannot be sent the same day, it should be kept refrigerated. Samples should be ***stored for no more than 1 to 2 days*** and ***PREFERABLY SHIPPED OVERNIGHT*** to ensure samples arrive in good condition. Degraded samples cannot be tested.

Seeds

1. Send 1-2 pounds of seed obtained from a representative sampling of each field or seed lot. This can be done in a number of ways by either probing bags or bins or by periodically drawing samples as the seed is going into or out of the bin. Please consult with the state seed department or local crop consultant for detailed instructions.
2. Package seed samples in a leak proof container. If zipper-seal plastic bags are used, fill only half of the bag with seeds as the seal may break if overfilled. For zipper-seal bags, remove excess air and fold bag over and secure with tape. A sealed coin or mail envelope are appropriate containers for smaller-sized seeds, which could easily escape from sealed containers. Secure envelopes with tape to ***ensure small seeds do not leak and seals do not break during transport.*** Clearly label bags or envelopes with a permanent marker for identification. The ID on each container must match the Specimen ID # listed on the Submission Form.
3. Seed packages should be packed tightly in the shipping box using packing material like newspaper or Styrofoam peanuts to prevent shifting during shipping. Bags that shift during shipment can easily be damaged resulting in seeds that are mixed and cannot be tested.

4. Store all seed samples in a cool, dark place until shipped to the lab. All shipments must be accompanied by a Submission Form. Please do not place the submission form inside the sample container, rather place the Submission Form inside the shipping box, but outside of the sample container. Send samples and Submission Form to the lab as soon as possible.

Soils

1. Collect soil samples from the top 6 inches (down to a maximum 12 inches in depth) using a soil probe, trowel or spade. Each sample should be a composite of 5 to 15 sub-samples (depending on size of affected area) collected throughout the chosen/affected area and combined in a clean, plastic container. Try to dig straight down, rather than at an angle, so that equal amounts of soil are collected at each depth increment. Collect the same amount of soil from each sub-sampling area. **Do not send wet soil.** Wet soil should be air-dried by spreading it out on paper towels prior to packaging and sending to the laboratory.
2. Mix the composite soil samples together thoroughly, removing any large plant debris, rocks and break up any clumps or clods.
3. Remove approximately 2 cups of soil (16 oz.) and place the mixed soil in a soil sampling bag or a zipper-seal plastic bag. Seal the container and clearly label the bag with a permanent marker for identification. This ID should match the Specimen ID # listed on the Submission Form.
4. Repeat the above procedure for each separate sample to be submitted for testing. Be sure to clean or remove as much soil from the sampling device as possible before proceeding to collect another composite soil sample from a different location/affected area, to prevent cross contamination.
5. Store all soil samples in a cool, dark place until shipped to the lab.
6. All shipments must be accompanied by a completed Submission Form (and the **USDA SOIL PERMIT** if shipment is not originating from North Dakota). Please do not place the submission form inside the soil sample container, rather place the Submission Form inside the shipping box, but outside of the sample container. The **USDA Soil Permit** can be found on the website or by contacting the lab.
7. All shipments originating from outside the United States of America must contact the laboratory prior to shipment to ensure all federal regulations are satisfied.

If there are any questions regarding sampling and shipping procedures, please contact the National Agricultural Genotyping Center Laboratory at 701-239-1451.

Ship Samples To:

National Agricultural Genotyping Center
1605 Albrecht Blvd N
Fargo, ND 58102