

Preparing Samples for Identification or Diagnosis

Good sample collecting and handling are necessary to obtain an accurate diagnosis and/or identification of plants and insects. Prepare samples as per instruction for sample type and purpose. Following these steps on how to package and store plant samples will help ensure samples arrival to WSU Asotin County Plant Clinic in good condition.

- ❖ Bring the freshest sample possible. Store samples in a refrigerator prior to transport to the Clinic
- ❖ Label the bag with your name and date.
- ❖ Fill out the proper diagnosis form for your sample type. Forms are located at: <https://extension.wsu.edu/whitman/master-gardener/>. The diagnosis forms can be emailed to cathrine.wigen@wsu.edu or brought in with your sample.
- ❖ Call the Whitman County Extension Office to make arrangements to drop off samples: 509-397-6290

Concerning our diagnosis:

Findings reported by this office are based on examination of information and plant material submitted. Not all plant problems are caused by plant pathogens or insect attacks. Other causes (unusual weather patterns, nutrient deficiencies, pesticides) are often difficult to diagnose without an on-site investigation. Some diagnoses require intensive microscopic or biochemical analysis which we do not have the facilities to do.

Preparing plant and weed samples for identification

Plants and weeds are identified in many ways. The most useful plant parts are flowers, fruits, leaves, buds, and young stems. Because some ornamental plants have many varieties, it may not be possible to determine the exact variety without the flower.

1. Collect as many plant parts as possible. Flowers, fruits/seeds, leaves, stems, buds and roots may aid in identification. For plant identification it is best to wait until flowering to bring in a sample
2. Where practical, dig up the entire plant including its root structure
3. Place the plant specimen in a plastic bag along with a dry paper towel (don't add water) and seal.
4. Store samples in refrigerator until ready to submit to the Plant Clinic

Preparing plant specimens for disease diagnosis

Collect the plant material that is showing the symptoms. If possible, collect several samples which show the progression of symptoms from mild to severe.

1. If it is not practical to bring the entire plant, try to bring plant parts that show the various stages of the problem:
 - a. A part showing the early stages of the disease
 - b. A part that is severely affected, and
 - c. A healthy part, if available
 - d. Place a dry paper towel in the bag with leafy samples
2. Where practical, dig up the entire plant including its root structure
 - a. Try not to pull the plant as any diseased roots will be left behind
 - b. Wrap the roots in a plastic bag separate from the rest of the plant to prevent soil from contaminating leaves and stems
 - c. Place a dry paper towel in the bag with leafy samples
 - d. Place the entire sample in another plastic bag without additional moisture, as it may cause contamination
3. Tree diseases can best be diagnosed by evaluating the junction of diseased and healthy tissue. Include twigs or limbs just beginning to show symptoms, but still alive. Old, dead limbs are normally not helpful.
4. For larger trees, send a 18" branch cutting snapped into 6" sections, including leaves, flowers, and/or fruit where appropriate. These samples may be placed in a plastic bag which is folded over loosely, but **NOT** sealed tightly. **DO NOT add moist paper towels** as samples will begin to mold and decompose in transit
5. Store samples in a refrigerator until ready to submit to the Plant Clinic.

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Preparing Turf Samples for Disease Diagnosis

1. Cut a turf square approximately 4 inches across and as deep as the roots will hold soil. Leave the soil intact.
2. Bring three or four specimens each representing a different stage (healthy, slightly affected, and heavily damaged)
3. Place samples in a plastic bag and store in a refrigerator until ready to submit to the Plant Clinic.

Preparing Insect Specimens for Identification

Be sure the insect is in sound condition; we cannot identify moldy, crushed insects. Prepare your specimens as follows:

1. **ALL INSECTS EXCEPT BUTTERFLIES & MOTHS**
 - a. Place in a vial or other tightly-capped container filled with rubbing (isopropyl) alcohol or ethanol (grain alcohol such as vodka). **DO NOT** send specimens in water (your specimen will decay in transit) or in formaldehyde or any other preservatives except alcohol.
2. **BUTTERFLIES & MOTHS** (and large beetles, bees & wasps, flies, other hard-bodied insects)
 - a. Submit as dead, dry specimens inside crush-proof containers. Gently rest the specimen on Kleenex; loose specimens break in transit. Do not use cotton because insects stick to the fibers and cannot be removed without breakage; likewise, do not tape specimens to sheets of paper.
3. Never send living insects:
 - a. Kill insects by placing overnight in a freezer inside a zip-lock bag OR kill via fumigation with ethyl acetate
 - b. ****NOTE:** ethyl acetate is an ingredient in some fingernail polish removers, check labels for local products. A few drops on a crumpled-up paper towel inside a tightly lidded glass jar should kill most insects within 15 minutes. **DO NOT** use plastic containers because the ethyl acetate can dissolve plastic; avoid letting the insect directly contact the ethyl acetate (add another dry paper towel inside the jar) because it often discolors the specimen.
4. **PLANT SPECIMENS** or other commodities showing insect damage symptoms
 - a. Place between several sheets of paper toweling (to absorb moisture) inside a zip-lock bag or other suitable container. It is usually best to also include suspect insect specimens with plants because damage alone may not be diagnostic for a specific insect.
5. When possible, always send more than one insect/plant specimen.