SAMPLING

SUBMITTING INSECT SAMPLES TO THE C. WAYNE ELLETT PLANT AND PEST DIAGNOSTIC CLINIC AT THE OHIO STATE UNIVERSITY

Sending Insects for Identification

1. Complete a PPDC specimen form (available from your OSU Extension office or at http://www.ag.ohio-state.edu/~plantdoc/cweppdc/cweppdc.html, or send a letter with inquirer's name, address, telephone, and information about the sample. Include the location of the insect—if in or on a plant, name the plant, if in a building, state the location within the building. Write the number of the pests seen, and type of damage observed.
2. Soft bodied specimens, such as caterpillars, aphids, thrips, maggots and grubs are best preserved by placing them in a small bottle of alcohol, either 70% ethyl or isopropyl, or clear 100 proof liquor. Please do not send in water or formaldehyde.
3. Moths, butterflies, and large, fragile insects should be packed with cotton or soft tissue in a box so the scales and other fragile parts aren't destroyed. Beetles, wasps, flies, and true bugs can be preserved in alcohol or wrapped carefully in a box. Make sure that the insects won't crush.
4. **Do not** ship live insects, tape insects to paper, or place them loose in a box or envelope.

Sending Damaged Object for ID of Pest

1. Pack grain, pieces of wood, or other material in box. Be generous with size of sample. If a plant is affected, pack the leaves or branches in newspaper or foil and pack tightly. If the root has been bored, dig the plant and place the roots and attached soil in plastic. **Do not put leaves or soft tissue in plastic, as they rot quickly.**

SUBMITTING PLANT SAMPLES TO THE C. WAYNE ELLETT PLANT AND PEST DIAGNOSTIC CLINIC AT THE OHIO STATE UNIVERSITY

Plant Disease or Disorders

1. Complete a PPDC specimen form (available from your OSU Extension office or at http://www.ag.ohio-state.edu/~plantdoc/cweppdc/cweppdc.html, or send a letter with inquirer's name, address, telephone, and information about the sample. Include the location of the plants affected (i.e. field, landscape, nursery, etc.), part of plant and number of plants affected, when the damage occurred and description of symptoms. Name the type and cultivar of affected plants, previous crop if applicable, amount of sun and moisture in that area, and soil type. List rates and amounts of pesticides and fertilizers applied.
2. Select material showing the symptoms, in different stages of decline. Do not send dead samples, unless accompanied with normal and progressively declining samples. Shake off excess water before packaging.
3. Send entire plant including roots if the whole plant is affected. Dig the plant and place the roots and attached soil in plastic. Do not send wet plants, nor put leaves or soft tissue in plastic, as they rot quickly.
4. If only local parts of the plant are affected (leaf spots, cankers or swelling), send several sections of affected plants.

Nematode Samples

Most nematodes are detected through soil samples which should be taken from May to October when soil temperatures are at least 50°F at a six inch depth.

SUBMITTING PLANT SAMPLES (CONT.)

Nematode Samples (cont.)
Do not sample very wet or dry soils. Samples should be taken from problem areas of the field. Using a 1" soil sampling tube, trowel or shovel take at least 20 samples at a six inch depth from each sampling area (approximately 1 acre). Mix the samples in a bucket and place one quart of soil in a plastic bag. Dig feeder roots to include in the sample if plants are growing in the area. NEVER ALLOW THE SAMPLE TO BECOME DRY OR HOT.

Weed or Plant Identification

1. Complete a PPDC specimen form (available from your OSU Extension office or at http://www.ag.ohio-state.edu/~plantdoc/cweppdc/cweppdc.html, or send a letter with inquirer's name, address, telephone, and information about the sample. Include the location of the plant (i.e. field, landscape, nursery, etc.), number of that plant seen in each location, previous crop if applicable, amount of sun and moisture in that area, and soil type.
2. Identification of a plant requires an entire plant or a representative portion of the plant. If possible, include flowers or seeds. If none exist at time of inquiry, describe the flowers seen earlier.

Packaging and Delivery of Specimens

1. Select specimens fresh from the field, carefully shake off excess moisture, and pack tightly in a strong box. Pack any leaf tissue in newspaper or foil **not plastic** to allow the air to circulate. Pack tightly so the samples do not rattle in the box.
2. Send overnight mail services, or mail early in the week to avoid layovers at the post office.

SUBMITTING PLANT SAMPLES (CONT.)

Herbicide Injury Symptoms

1. Remember that the PPDC cannot test plant material for chemical evidence of a substance in a plant. The PPDC evaluates the symptoms of the plants and information provided, then determines if the pesticide/chemical applied could have caused the observed symptoms. For chemical testing, contact your OSU Extension office for these specialized laboratories.
2. Complete a PPDC specimen form (available from your OSU Extension office or at http://www.ag.ohio-state.edu/~plantdoc/cweppdc/cweppdc.html, or send a letter with inquirer's name, address, telephone, and information about the sample. Include the location of the plants affected (i.e. field, landscape, nursery, etc.), part of plant and number of plants affected, when the damage occurred, and description of symptoms. Name the type and cultivar of affected plants, previous crop, amount of sun and moisture in that area, and the soil type. Describe the local weather when the symptoms appeared and the dates, rates, and amounts of pesticides and fertilizers applied.
3. Select material showing the symptoms, in different stages of decline. Do not send dead samples, unless accompanied with normal and progressively declining samples.
4. Send entire plant if the whole plant is affected. Dig the plant and place the roots and attached soil in plastic, so that the sample stays fresh. Soybeans especially, dry quickly. Do not send wet plants, nor put leaves or soft tissue in plastic, as they rot quickly.
5. If only local parts of the plant are affected (branches of trees, shrubs), send several sections of affected plants.

SUBMITTING PLANT SAMPLES (CONT.)

PLEASE INCLUDE AS MUCH INFORMATION AS POSSIBLE. PHOTOS ARE ALSO VERY HELPFUL.

Fees: The PPDC charges a nominal fee for identification. Contact your Extension office or see the fees posted on our web site.

Mail samples to:
Plant and Pest Diagnostic Clinic
110 Kottman Hall
2021 Coffey Road
Columbus, OH 43210
614-292-5006

SAMPLING GRAIN FOR MYCOTOXIN ANALYSIS

The number of ears or heads infected within a field and the number of infected kernels on a given ear or head are highly variable. As a result, infected kernels and mycotoxin levels vary considerably within a grain lot. There are always "hot-spots" within the lot and these may affect the accuracy of sampling and testing for toxins. Poor sampling could lead to the rejection of grain with toxin levels below accepted thresholds or the acceptance of grain with toxin above threshold. If a single sample is drawn from a "hot-spot," the level of toxin contamination will be overestimated. Conversely, if the sample misses the "hot-spots" completely, toxin contamination will be underestimated.

- To collect a representative grain sample, 5 to 10 samples should be randomly collected from multiple locations in the bin or truckload.
- Air (suction) probes are not recommended when sampling moldy or scabby grain for mycotoxin analysis. Diseased and broken kernels are usually lighter in weight and contain higher levels of toxin than wholesome kernels. Suction probes will likely pull these diseased kernels and fines, resulting in an overestimation of toxin contamination of the lot.
- For end-gate sampling, samples should be drawn from the entire width and depth of the grain stream.
- Clean the samples to remove fines, and grind the grain to resemble flour in a clean grinder.

Collecting a soil sample for nutrient analysis:

- Collect 15 to 20 random samples from representative areas no larger than 20 acres. Representative areas are those areas that best represent soil conditions across the field landscape. Areas at different landscape positions or "problem" areas should be sampled separately. Make a composite sample of the 15 to 20 samples and make certain they are well mixed. Take a small sample of the composite and submit it to a reputable lab. Labs available in Ohio can be found at the following web page: http://www.ag.ohio-state.edu:8000/%7Ecorn/library/testlabs.pdf.
- Collect soil samples to a depth of 8 inches. Tri-State Fertilizer Recommendations are based on soil samples collected to a depth of 8 inches. If sampling no-till fields, 4 inch samples should also be collected. This is for determination of lime recommendations.
- Do not dry soil samples at temperatures higher than 120 degrees F. Typically semi-moist samples can be submitted directly to analytical labs.
- Avoid contamination. Use clean probes for sampling and clean buckets for mixing.

PLANT PART TO SAMPLE FOR FOLIAR SAMPLES

Crop	Sample Prior to or During	Plant Part to Sample	# Plants to Sample
Corn	seedling stage	above ground portion	10
Corn	tasseling	upper fully developed leaf	10
Corn	initial silk	ear leaf	10
soybeans	seedling stage	above ground portion	10
soybeans	initial flowering	upper fully developed leaf	15
small grains	initial bloom	upper leaves	20
forage grasses	initial bloom	upper leaves	20
alfalfa	initial flowering	top 6 inches	20
forage legumes	initial flowering	top 6 inches	20