

Submitting Pests and Diseased Samples for Identification

The [Plant Protection Unit](#) has been providing diagnostic services to the Jamaican farming community for several decades. This service has prevented the loss of many crops by farmers due to correct identification of pest specimens and appropriate recommendations given. In order to improve on this service the submission of good samples and supporting information are essential. The main types of samples dealt with include insects (Entomology Unit), fungal, bacterial and viral (Pathology Unit) and nematodes (Nematology Unit). Samples can be submitted through the Rural Agricultural Development Authority (RADA) in each parish or submitted by you directly to the Plant Protection Unit, Bodles Research Station, Old Harbour, St. Catherine.

There are several requirements that must be followed in order to ensure that the sample is received in the best condition for diagnosis. Here are some steps that you can follow.

Insects

Most insects once they have been collected should be preserved immediately, preferably as many as possible, and delivered to the lab in the shortest possible time. If it cannot be delivered the same day, please refrigerate.

Hard bodied insects (beetles, bugs):

A plastic or glass jar containing 70 – 90% ethyl isopropyl (rubbing) alcohol can be used to kill and preserve the specimens. It is not advisable to use water for this purpose.

Moths and Butterflies:

The live specimens can be killed in the freezer and stored between folded tissue paper and placed in an envelope or sealed in a crush proof container during transport to the lab.

Fragile soft bodied insects (mites, thrips, aphids, scales):

Place infested plant part into an inflated plastic bag to prevent the crushing of the specimens or cut plant parts into small pieces and immerse in a container containing 70 – 90% alcohol. Do not try to remove these specimens from the plant surface as body parts necessary for identification may become detached or be crushed in the process.

Small caterpillars, grubs or maggots:

These can be sent in a plastic bag on the host material or placed in a container (with food material), covered with a perforated cloth material and held in place with an elastic band.

Pathogens

Careful collection of plant material is essential to avoid unnecessary work and to achieve worthwhile results.

- Dry off any external moisture from leaves and stems with soft paper tissue to avoid crushing.
- Collect specimens showing early to middle stages of the disease. Severely diseased samples are unsuitable and will not be examined. Healthy material can be included for a comparison.
- Plant material should not be collected when wet. If unavoidable, spread out the material, blot with tissue to remove moisture and wrap specimens individually in paper.
- Do not wrap plant material in plastic. Wrap in newspaper or place in a paper bag.
- If bacterial infection is suspected, it is important that the samples do not dry out and are sent immediately after collection.

Label Requirements

The following information will be required for all samples being submitted.

- Name of Collector
- Address collected (Area and parish) Date collected
- Where found on: host plant (give stage of growth), animal
- Level of Infestation (low, medium, moderate, high))

- Describe the damage
- Planting history (When established, soil type, fertilizer use, pesticide use etc.).

Use of Digital Imaging

This format only provides tentative identification of pests which may be sufficient for the purpose of providing recommendations to alleviate the pest problem. However, for final confirmation the actual specimen will be required especially if species identification is required.

Taking the photos

- Take image of the damage or nests. Photograph damage where it is close to normal plant tissue, lumber or food products etc.
- Use a contrasting background to the specimen. Use an intensity light that best depicts the accurate colour of the specimen.
- If many specimens are present, take many of them in one frame.
- Select the best preserved specimen to provide a close up image of the entire top, bottom and head. When imaging the head, try to get the base of the antennae, eyes and mouth in focus. For specimens flattened side-to-side, such as fleas, a side view will be needed.

Sending Images via Email

Digital images of pests and diseases can be sent to the Plant Protection Unit as an attachment from your normal email programme. The file size of attached photographs should be no larger than 75 KB each. This is necessary to ensure that the images can be downloaded when connection speeds and/or modems are slow.

To ensure the images are small enough and of the required quality to send and be downloaded, please carry out the following guidelines.

1. Save them in JPEG (.jpg) format.
2. Ensure that the image quality is set at basic or the lowest quality and the image VGA (640 x 480 pixels). At these settings the file size should be under 75 KB and will take about 25 seconds to transfer with a 28.8 Kbps connection.
3. When taking the image place a ruler or a common item, such as a coin, next to the specimen so that the relative size can be determined.