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## Maine Potato IPM Program

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### HANDLING PEST SAMPLES

Anyone with a farm or garden has encountered at least one unfamiliar plant disease, insect, or weed. This can be frustrating if the unfamiliar pest is causing serious damage and control efforts are not working. Your local Cooperative Extension office can help identify these pests and recommend an appropriate control measure. To do a proper identification, the sample needs to arrive in good condition. Proper handling and packaging will ensure that the pest has not been crushed, is not rotten, or is not damaged.

#### **Environmental Concerns**

Improper identification of a pest can lead to an illegal, unsuitable, or ineffective treatment, which can waste time and money and possibly be dangerous. Using inappropriate pesticides puts unnecessary chemicals into the environment. Proper identification of a pest will help in choosing an appropriate treatment.

#### **Handling Samples**

When sending a pest sample, include a description of the problem. Information such as where the problem may have started, how varied it is, how long it has been taking place, previous treatments, etc. is helpful in identifying the pest. Also include information such as plant variety, age of the plant, rotation schedule, and fertilizer use, as this may give further insight into the cause of the problem.

Samples that need to be mailed should be packed in a sturdy cardboard box or mailing tube. Special instructions follow for packaging diseased plants, weeds, and insects.

**Diseases:** Diseased leaves or stems should be placed individually in plastic bags and closed tightly. If an entire plant is being sent, wash all soil from the roots and wrap the roots with damp paper towels and a plastic bag. If a nematode problem is suspected, be sure to send the plant roots in a separate bag and some of the soil from around the roots in one bag.

When preparing a sample of a diseased plant for identification, include some healthy tissue for comparison. A plant that appears to be suffering from a disease may be affected by a mineral deficiency, adverse weather conditions, or insect damage. The healthy sample can help determine this.

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The sample of affected tissue should include the entire lesion, if possible. Some disease-causing organisms will live at the edge of a lesion, while others live in the interior. Including the entire lesion is the best way to ensure the presence of the disease-causing organism. Microscopic examination of the organism is often essential to positively identify plant diseases.

Fruit must be handled carefully, since it can decay very quickly. Place fruit in a plastic bag, but do not add any moisture.

**Weeds:** Follow the same instructions as given above for packaging whole plants.

**Insects:** Collect a number of the problem insects in a glass or plastic container and seal it tightly. Include different life stages (eggs, larvae, and adults), if available.

The majority of insects can be killed with rubbing alcohol before packaging. Caterpillars will lose their color when they are put in alcohol; therefore a description of their markings should also be sent. The best way to kill butterflies and moths is to put them in the freezer overnight. They can then be packed in tissue paper and a box. For all insects, include a sample of the damage being done by them. This can be packed in the same manner as diseased-plant samples.

If you have any questions about how to package a plant, insect, or disease sample, please contact your local Cooperative Extension office.

### **Economics**

Once a pest problem is properly identified, an appropriate treatment can then be chosen. A delay in identifying the pest may lead to severe damage and ineffective treatments that can be costly. Prompt identification is the best way to begin addressing pest problems.

Authored by James D. Dwyer, Crops Specialist, James F. Dill, Pest Management Specialist, and Hannah S. Carter, Potato Pest Management Professional, April 2001.

Published and distributed in furtherance of Acts of Congress of May 8 and June 30, 1914, by the University of Maine Cooperative Extension, the Land Grant University of the state of Maine and the U.S. Department of Agriculture cooperating. Cooperative Extension and other agencies of the U.S.D.A. provide equal opportunities in programs and employment. 04/01

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