



# Potato Progress

Research and Extension for Washington's Potato Industry

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## Tuber Moth Survey, April 2005

Andrew Jensen, WSPC; Sandy DeBano & Nick David, OSU Hermiston; Mel Martin, J.R. Simplot Co.; Dallas Batchelor, Weather or Not, Inc.

The regional survey for potato tuber moth is now underway. We have 180 trap sites in Washington, and 40 in Oregon. Several more will be added in WA by May 1. We will therefore have about three times as many traps in our network as last year. Trap catch data will be posted in graphical format on the potato commission's web site very soon:

<http://www.potatoes.com/research.cfm>

### Oregon

In Oregon, several tuber moth traps were maintained throughout the winter, and some moths were caught in one or more of these traps in all but one week. Upon deployment of the full 40 OR traps in mid-March, large numbers of tuber moths were caught in many traps immediately. These initial numbers were nearly as large as the peak of the trapping season in 2004.

### Washington

During the winter, some of us had been hopeful that tuber moth infestation in the spring would be limited to the extreme southern portions of the WA Columbia Basin. Unfortunately, this does not appear to be the case. In the first two weeks of trapping, we have caught one to three tuber moths in a few traps from Eltopia north to I-90 east of Moses Lake. The very small numbers caught so far do not allow good judgements on the intensity of the infestation, but they certainly point to tuber moth presence in, or colonization of, the entire basin. We urge everyone to be watching for tuber moth from the time of crop emergence.

### Tuber Moth Identification

We need to alert the industry to the fact that tuber moth pheromone traps are catching several related species of moth that **are not** pests of potato. Figure 1 is a sampling of the moths we have caught so far, with a comparison to tuber moth. Most traps in our regional survey catch at least one of these non-tuber moths every week, and sometimes up to 200 of these "other" moths are caught in one trap. We urge everyone to bring trapped moths to one of us, or otherwise be very careful about the identification of the moths in their traps. Correct identification can be quickly learned, but without training mistakes can be made. Those of you receiving this newsletter by mail or fax might try to access our web site to see the color photographs (or call Andy Jensen at the potato commission for help).



Figure 1. Adults of five non-tuber moth species in comparison to tuber moth.

# Guidelines for Sampling for Plant Parasitic Nematodes

Ekaterini Riga, WSU Prosser

These guidelines are appropriate for a wide range of agricultural systems, and as I accumulate data over the next couple of years I will modify them to assist growers with nematode sampling in Washington. Potatoes will be used as a typical example of sampling practices for nematodes. Most plant parasitic nematodes live in the soil and are microscopic. They are found mostly in the top 12 inches of soil and are concentrated in the root or in the soil around the root of host plants (both crops and weeds). Soil sampling and sometimes soil + root sampling is necessary to evaluate nematode densities and to identify them. Pre-plant sampling for nematodes is more useful than post-plant. When possible, request that nematodes are identified to species level.

Sampling for Nematodes in a Pre-plant situation: If a site chosen to plant a new crop has had a crop (annual or perennial) in the past 5 years or it has recently been fallow, soil samples have to be taken down to 3 feet, especially if alfalfa was one of the previous crops. Always check crop and management records to determine if nematodes (that affect present crop i.e. potatoes) were found on any previous crops. Soil samples should be taken from areas of the field where decline of the previous crop has been observed. Samples also should be taken from areas of the field where differences exist. These include differences in cropping histories, soil textures, yield, watering regimes or management practices. A sample should consist of at least 20 sub-samples (cores) collected along a "W" pattern in each area. The composite sample should be approximately 1 pint (500 cc) to 1 quart. A soil sampling tube (1" diameter x 15-18") used for soil fertility sampling is an excellent tool for collecting nematode samples. Soil temperatures should be least 10° C (or 50° F) when sampling for nematodes. Soil or soil + roots should be placed in a plastic bag, properly labeled on the outside of the bag, and stored away from sunlight, at 4 to 10° C (or 40° to 50° F).

Sampling for Nematodes in Established Fields: The majority of plant parasitic nematodes are found around and in the "feeder roots". Therefore, samples containing both soil and roots should be collect to a depth of 10 to 12 inches in the potato row. Routine samples should be collected in the same manner as pre-plant samples, at least 20 sub-samples collected along and across potato rows in a 5 acre area. When differences in plant vigor are present, 10 or more plants should be sampled within a weak area and a corresponding set in the adjacent healthy or more vigorous area of the field. When diagnosing plants of low vigor, separate root samples should be collected. Do not sample from the top 1 inch of the soil. Collect a composite sample of at least 1 pint of soil.

Be aware that nematodes are found in 'hot spots' i.e. they seem to aggregate in certain locations. For example, roots and soil near one plant might contain few nematodes, while an adjacent plant might harbor high population densities. So, it is possible to miss them if sampling is not done properly.

When to sample for nematodes: It is best and easiest to sample for nematodes when the soil is moist, preferably within a week after rainfall or irrigation. Sampling date will depend on which nematodes are suspected and the nematode management options. Population densities of nematode species vary through the year. Root knot nematode population densities usually

are greatest in the fall, while dagger nematode densities peak in the spring. For example, it is preferable to sample potatoes around harvest period, because the densities of root-knot, ring and lesion nematodes are usually high at this time. Sampling in the late summer or early fall also allows adequate time to plan and implement nematode management options, such as fall or spring fumigation, green manures etc. Soil temperatures should be least 10° C (or 50° F) when sampling for nematodes. Therefore, the sampling period extends from early spring to mid autumn. Soil or soil + roots should be placed in a plastic bag properly labeled on the outside of the bag and stored away from sunlight, at 4 to 10° C (or 40 to 50° F).

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## Callisto Receives Federal Registration for Use in Sweet Corn

The herbicide Callisto (active ingredient mesotrione) has finally received federal registration for use in sweet corn. This product is very effective at controlling volunteer potatoes.

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## 2005 Commercial Seed Lot Trial Information

Mark J. Pavek, Washington State University

Commercial potato seed samples are requested for the 2005 Washington Seed Lot Trial. Two to three hundred whole (single drop) seed is an acceptable sample size, or 50 lbs of 4 oz single drop seed. This seed should not be treated with insecticide or fungicide. Seed tubers need to be uniformly small (not larger than 4 oz) because no seed cutting is done and a cup-type planter is used. A sample randomly taken that represents the entire seed lot received is most desirable. Sampling the first (or last) 300 seed from the truck is not likely to provide a representative sample of the lot. Sample tags may be obtained by calling the Potato Commission at 509.765.8845.

Your assistance with collection and drop off of seed samples is needed. Seed samples may be taken to the WSU Othello Research Unit (509.488.3191), south on Booker Road from State Highway 26 about five miles east of Othello. Alternatively, sample pickup can be arranged by calling Mark Pavek (509-335-6861) or Ed Driskill (509-335-6859).

In the North Basin, two seed "drop-offs" have been established. One is at the Bob Holloway storage just north of Road 3 NW and east of Dodson Road; place samples in northern most storage nearest Dodson Rd in the west end door. The second is at CW Potato Services, south of I-90 about six miles east of Moses Lake (just east of the Moses Lake Simplot Soilbuilders). Samples need to be at these locations by 2:00 pm the day before each planting date to be included.

The remaining planned seed lot planting dates for 2005 are:

3<sup>rd</sup>: April 19; 4<sup>th</sup>: May 3. The 2005 Potato Field Day is scheduled for Friday June 24.