



**Cassandra Bates, runs WSU  
plant pest diagnostic clinic**

### **Sampling and Diagnoses of Nematode Populations**

An interview was conducted with Cassandra Bates, who runs the plant pest diagnostic clinic for WSU at the Pullman campus, to discuss sampling and diagnostics of plant parasitic nematodes (PPN). PPN are problematic to potatoes grown in the Pacific Northwest because they can cause damage to root systems and tubers that affect the market value and trade of potatoes worldwide. These nematodes include the cyst, root-knot, stubby root, and root lesion nematodes. Potato growers in the region should be aware of nematode populations in their field, and let us discuss how to do that.



**Root-knot nematode: *Meloidogyne  
chitwoodi***

### **How and When To Sample for Nematodes**

- It is most typical to sample in early fall, post-harvest, but a sample can be collected in the early spring or even during the season.
- If sampling when the field is bare, it is best to follow a zig-zag pattern. If it is during the growing season, try to follow a similar pattern by sampling, moving up and over a few rows, and then sampling again.
- It is suggested that a soil sample be collected by probing 6-12 inches deep from the root zone.
- If a live plant is available, it can be helpful for a diagnostician to also have in order to make a diagnoses.



**Root-knot nematode eggs scattering out of  
a root gall from a tomato plant**

### **How is a Diagnoses Performed?**

- Most growers suspect what problem they have in their field, but they need confirmation.
- Diagnosticians can determine the type (genus) of nematodes in a sample by using a compound microscope.
- Sometimes growers need to know down to the species when it comes to selling potatoes in certain markets due to quarantines
  - In these cases, different assays can be performed. A popular method is using species-specific primers in which a PCR can determine the specific species that a grower is dealing with.

### **Where Can You Send a Sample for Nematode Diagnostics?**

- Diagnostic clinics can be found at <https://potatonematodes.org/resources/diagnostic-labs/>
- Washington State University has a diagnostics laboratory located in Pullman, WA.
  - More info can be found at <https://plantpath.wsu.edu/diagnostic-clinic/>