

Horticulture Hints

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I hear the heat has been brutal in Florida, and rain has been adequate. So glad to hear that there's been rain! I was worried about making my poor neighbor water every day while we're in Colorado. Our temps here in CO finally broke 70 degrees, and it's been gorgeous almost every day since. The location of our house precludes the hail that always happens along the front range (Denver, Colorado Springs). The other day, quarter- to ping pong ball-sized hail fell near downtown Denver. With enough of it that Coors Field workers had to use 5 gallon buckets to bail out the doors from the clubhouse to the dugout. A picture shows the clubhouse manager standing in rain and hail up to his knees! All we got here in the mountains was a view of the dark clouds in that direction. And a little rain.

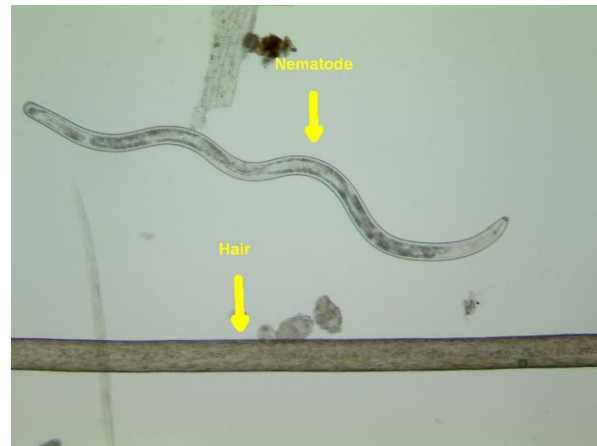
I thought I would share a little tiny bit of the beauty that is Colorado. I'm sure you all



know about the majestic views and the snow covered peaks. But here is a tiny beauty from up on our north facing mountain. A clump of moss, now mature, with its diminutive flowers in full bloom - tiny and

fleeting. I was lucky enough to come upon it at just the right time.

Since it is properly summertime now, I would like to take a few minutes to talk about one of the biggest pests (not in size at least, but in number) in Florida, as well as the rest of



Nematode size compared to human hair

the country. Many of you may have already experienced damage from nematodes. Well, when I started doing research on the subject, I had no idea just how much there was to know about the little critters. It's a very complex subject. There are many different kinds of nematodes, a lot of them are beneficial, feeding on bacteria, fungi, and pest insects. Some can even be used as a biological control for certain kinds of pests. It's the plant-parasitic nematodes that feed on our lawns and garden vegetables. Those are the ones that I want to talk about here.

These guys are unsegmented roundworms, microscopic in size, and have a stylet or kind of a hypodermic needle at the front end of their body. This stylet's purpose is for inserting into the cells of a plant's root, injecting chemicals into the tissue and

subsequently ingesting fluids and nutrients from the plant's roots. There are several different kinds of nematodes here, some that take up residence in the root tissue, and others that feed off a bit of root tissue, and then move on to the next root. Each causes a different type of damage to the plant, but both are equally damaging to the overall



Nematodes (stained red) within root structure

health of the plant. It's important to know which kind you have in order to form an effective plan to eradicate them.

In order to find out what kind you have, you need to have the University of Florida perform a nematode assay. In the email to which this newsletter is attached, I have included links for you to follow in order to find out more information on the subject and how to go about collecting and mailing your soil sample. It's important that you follow the instructions to the letter - this is different than a regular soil assay. For your regular soil sample, the bags are designed for the soil to dry out. The sample for the nematode assay needs to stay moist.

Once you have an infestation of these critters, they are difficult to exterminate. The University has done extensive research into methods of eradication, and it seems that nothing in the chemical realm is effective against them. One of the best methods seems to be solarization of your soil. This is most potent when done in summer. Remove all the roots that you can from the area to be

gardened. Place clear plastic over the area, and leave in place at least 4 to 6 weeks. Don't remove plastic until you're ready to garden. The solarized soil will be sterilized 6 to 8 inches down. So don't till or turn the soil once you're ready to put seedlings in.

Add your organic amendments, and be sure to examine the roots of your seedlings to make sure you aren't inadvertently introducing a new infestation. What you're looking for are root galls (picture below) or lesions where the root is caved in, or just doesn't look healthy. Older transplants seem to be more resistant to nematode damage



Root gall damage on roots

than younger ones. And the cold seems to slow down their activity, so plant as early in the spring and as late in the fall as you can.

And having said all this, if you choose to plant in containers or raised beds (as I have done) your potential for this problem is much less. But even in this, you must be vigilant about your transplants, and making sure your soil and tools are clean. Not only for nematodes, but also for fungi, bacteria and weed problems. I admit I have fallen down on this point. I plan to do better in the future.

Happy (and successful!) gardening!

All pictures courtesy of University of Florida IFAS

Click on these links for more information:

[More info on nematodes](#)

[Nematode Assay Lab](#)