

**Problem:** Nematodes



**Host Plant:** Too many to list.

**Description:** Note: The information in this article applies to those living in southern areas of Kansas only. The northern areas of the state usually do not have nematodes that persist from season to season. To determine if you might be affected, draw a line from east to west halfway from the Nebraska to the Oklahoma border. If you are located north of that line, don't worry about nematodes. If you live to the south, read on!

Nematodes are microscopic, wormlike animals that can seriously damage the roots of crop plants. Certain soil-inhabiting nematodes are harmful because they feed on the roots of many kinds of vegetable and flower crops causing roots to become stunted and deformed. As a result, roots are less able to absorb water and minerals necessary for vigorous plant growth, and crop production is significantly reduced.

Under severe nematode infestations, it is not uncommon for affected plants to die during periods of heat stress. Suspect a nematode problem if an unusual number of plants die during hot, dry summer weather. To verify this, dig up one of the affected plants and examine the roots. Roots infested with nematodes are often grotesquely deformed.

**Recommendations:** You can take roots to your local Research and Extension office and have them tested for a modest fee. This analysis will let you know for sure if your garden is infested. Knowing that plant-damaging nematodes are present in the soil is the first step in controlling the problem.

If you discover a nematode problem, there are several ways to improve crop performance. First, select nematode-resistant plants. For example, nematode-resistant tomato plants are varieties with names followed by the letters V,F1,F2,N, etc., where

the letters refer to specific disease resistances and the "N" stands for nematode resistance.

Another way to reduce nematode damage is to rotate the vegetable bed, cultivating a nonrelated crop every season. Don't plant the same kind of plant (for example, tomatoes following tomatoes), or plants that are related, such as peppers, eggplants and tomatoes, in the same location year after year. Destroy crop residues infested with nematodes. Pull up and burn the roots of susceptible plants because nematodes survive well on infested roots left in the soil. Turn the soil two or three times during the winter to expose nematodes and infested plant debris to sunlight. The drying action of sunlight and cold air kills nematodes and their eggs. In some cases, when other methods of control are not completely satisfactory, consider planting nematode-suppressing crops such as the French marigold 'Tangerine.' In order for suppressive crops to be effective, they must be the only crop occupying the vegetable bed for the entire growing season. No other plants, including weeds, can be allowed to grow. Inter-planting marigolds with other crop plants will not control nematodes, nor will it protect susceptible plants from nematode damage.

Another control method to consider is soil solarization. This process uses solar energy during the warm summer months to heat the soil to the point where nematodes die. The soil at the treatment site is tilled and prepared just like a fine seed bed. The next step is to cover the soil with a sheet of clear, UV-stabilized plastic film. The edges of the plastic film should be buried at least six inches deep to prevent it from being blown and damaged by the wind. Sunlight passing through the plastic sheet heats the soil. A minimum of four to six weeks of treatment is needed to significantly reduce the nematode population. Longer treatments are even more effective.

### **References:**

1. [Wilt, Nematode, and Virus Diseases of Tomato](#). K-State Research and Extension, Plant Pathology Publication L-723
2. Garden Soil May Contain Nematodes. Horticulture 2001 Newsletter, No. 14, April 4, 2001

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