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## Nematodes - Root-knot, dagger and lesion nematodes

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Plant-parasitic nematodes are microscopic roundworms that live in soil and feed on plant roots. Aboveground symptoms are poor growth, low yields and an "off" color. The symptoms may resemble those of nutrient deficiencies or virus diseases. Belowground symptoms include poor root development, root browning, root swelling and stunting or death of feeder roots. In new vineyards, nematodes may cause poor establishment and weak growth of young vines. Nematodes seldom kill vines but contribute to a steady decline in vigor. Some nematodes are also vectors of viruses. Nematodes spread with soil and plant roots. Once established in a vineyard, nematode infestations tend to be permanent.



Left, roots with black discoloration caused by dagger nematode. Right, healthy roots.

### Additional information

- Search [MSU Extension News for Agriculture](#) site
- [Search MSU Fruit CAT Alert](#) newsletter for articles. Type in keyword: nematodes
- [MSU Diagnostic Services](#)
- Special [grape disease problems](#) and controls (from [Michigan Fruit Management Guide](#))  
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