



Olive and Verticilosis



The olive Verticilosis is one of the major diseases affecting this crop in the Mediterranean Basin. Two syndromes of the disease are occurring: apoplexy, the acute form, and slow decay. Apoplexy develops in late winter and early spring, and is characterized by rapid death of twigs and branches, and mostly leads to the death of the tree. The slow decline symptoms begin in spring and are developing gradually through early summer. The trees affected by slow decay may show a recovery in subsequent years.

Strategy for Plant Health and Vigor

The olive Verticilosis is among the most difficult diseases to fight against because of the complexity of the life cycle of the pathogen *Verticillium dahliae*, the characteristics of the olive tree, and the interactions that occur between the pathogen, the plant, environmental conditions, and cultivation practices.

Understandably, olive growers would like to have a simple method at hand with which the disease could be readily controlled. Alas, such simple method does not exist at this time!

So far there is no convincing scientific evidence that the application of any products (chemical or otherwise, fungicide or not) will prevent or cure the disease.

Therefore the most effective strategy against Verticilosis is one of combined preventive actions, designed to avoid the establishment of the pathogen in the plant.



Preventive Actions

- ✓ Choose a clean planting site, avoid infested soils and susceptible neighboring crops (in particular cotton);
- ✓ Disinfect the soil previous to planting;
- ✓ Use healthy young plants from qualified nurseries, free of *V. dahliae*;
- ✓ Avoid the use of cultivars that are susceptible to the defoliant *V. dahliae* pathotype;
- ✓ Use plants ready-inoculated with mycorrhiza in nurseries, or treat with mycorrhizal inoculant at transplant;
- ✓ Good farming practices:
 - ✓ Do not intercalate susceptible crops (e.g. cotton, horticultural crop);
 - ✓ Control broadleaf weeds;
 - ✓ Reduce tillage;
 - ✓ Avoid the use of machinery and vehicles used in previously infected plots, using sanitized utensils;
 - ✓ Use drip irrigation instead of flooding.

Corrective Actions

Intervene immediately as symptoms are observed:

- ✓ Cut, remove and destroy infected branches, making this pruning preferably in the summer;
- ✓ Stimulate microbial activity in the rhizosphere
 - ✓ Incorporate organic matter into the soil;
 - ✓ Treat the still not affect trees with mycorrhizal inoculum (by drilling into the rhizosphere);
 - ✓ Treat with antagonistic bacteria or fungi (e.g. products based on *Trichoderma spp.*);
- ✓ Solarize the soil under the tree canopy.

References:

Spatiotemporal Analysis of Spread of Infections by *Verticillium dahliae* Pathotypes, J. A. Navas-Cortés et al., Ecology and Epidemiology, Vol. 98(2), 2008.

Estrategia de control de la Verticilosis del olivo, Rafael M. Jiménez Díaz et al, Vida Rural 176: 36-40, 2003.

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