



# Cornell Hemp

<http://hemp.cals.cornell.edu>

## Fusarium vascular wilt of hemp

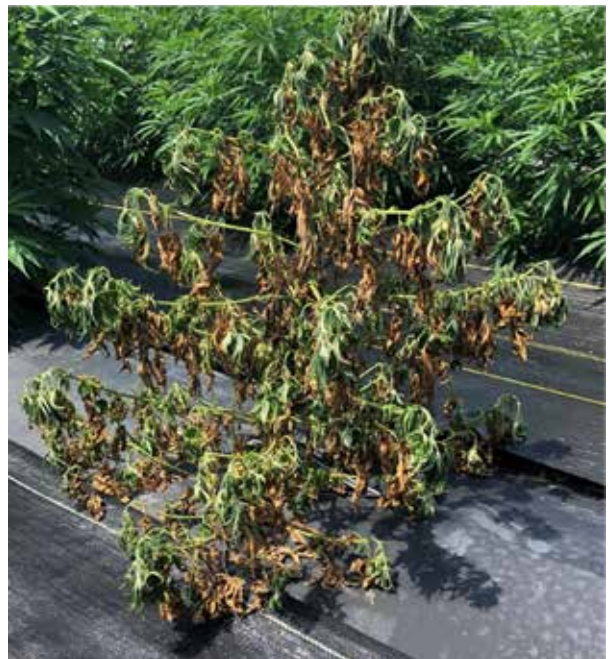
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### Signs and symptoms:

Yellowing and browning of the leaves, wilting, and red to brown lesions on the crown may be visible. This disease most frequently occurs in cool, wet soils.

### Casual organism:

Vascular wilt is caused by *Fusarium oxysporum*, a soilborne fungal pathogen. This fungus has an extensive host range and can survive in the soil for years, making eradication difficult.



*F. oxysporum* reproduces asexually via micro and macro conidia. The pathogen enters the vascular tissue of the roots and grows within the root tissue. The mycelia of the fungus eventually clog the xylem vessel elements, preventing water flow to the shoots, and ultimately leading to wilting and plant death.



## Management strategies:

Successful management strategies can include a combination of cultural, biologic, and chemical approaches. Maintaining proper drainage in fields is critical. Avoid planting in wet and poor draining areas. While few products are currently approved for hemp, research is being conducted to determine the efficacy of plant growth promoting rhizobacteria and other fungicides.

Product Name	Active Ingredient	Company
Quadris	Azoxystrobin	Syngenta
Double Nickel LC	<i>Bacillus amyloliquefaciens</i>	Certis USA, L.L.C.
Howler	<i>Pseudomonas chlorophis</i>	AgBiome Innovations, Inc.
Rootshield WP	<i>Trichoderma harzianum</i>	BioWorks, Inc
	CuZn43	VM Agritech

**Figure 1.** Products being tested in the summer 2021 field trial for efficacy against *Fusarium* wilt. These products are being tested in a field trial, potted plants in greenhouse production, as well as hydroponic production. A single cultivar of hemp, GVA-H-21-1002, was used due to known susceptibility to *F. oxysporum*. The impact on growth and development, as well as cannabinoid production is being studied.

