

APHANOMYCES

Aphanomyces cochlioides



photo by: C. I. Schneider

Identification

- Aphanomyces is caused by a fungus in the soil
- The fungus will over winter in the soil as spores

Cause of Infestation

- Under wet warm conditions, the oospores will germinate to produce zoospores that are mobile in the soil
- These spores will swim in the water in the soil and infect the sugarbeet root
- Infection can occur at anytime throughout the growing season
- Optimum soil temperatures are from 68° to 86° F
- Soil moisture must be 100% since zoospores need free water to swim
- Infections do not occur at temperatures less than 60° F

Detection

- Aphanomyces attacks the root and hypocotyl – (region between cotyledons and seed)



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- Hypocotyl and root rapidly turn black and shrink to a dark thread
- When the fungus infects a sugarbeet later in the growing season, it will cause the root to turn brown and black in color near the root tip and at areas where the lateral roots meet the main taproot

Damage

- Young seedlings may dampen off
- Young seedlings are weak and are more susceptible to the wind
- Sugarbeets that have been infected late in the growing season often survive, but when foliage is removed at harvest, rotted roots are easily dislodged or are too small to be harvested
- The roots will have reduced yield and sugar content

Control

- Select varieties with resistance
- Plant Tachigaren treated seed
- Plant as early as possible
- Cultivate to keep the soil dry
- Improve field drainage
- Increase the length of rotation
- Control weeds
- Avoid the spread of contaminated soil



photo by: L. D. Leach