Fusarium wilt

**Symptoms**
The fungus can infect plants a few days after transplanting and cause wilt during the daytime. Initially, the infected plants can recover overnight but the following day towards noon plants will show wilt symptoms again. It is common during hot and sunny days to observe leaf scorch symptoms, as well. Older plants show gradual vine decline with yellowing and stunting. Leaves may show symptoms which resemble nutrient deficiency. Infected stems near the soil level have brown internal discoloration which extends several centimeters upward with or without external necrotic streaking on the stem. Water-soaked patches may appear on stems at collar level while roots rot as the disease progresses. Under high humidity, pinkish-white fungal mycelia may cover the infested stem tissue. Fruit infection can occur under high humidity.

**Causal agent**
Fungi, *Fusarium oxysporum* f. sp. *cucumerinum* (on cucumber), f. sp. *niveum* (on watermelon) and f. sp. *melonis* (on melon) are the most economically important. Other forms have been identified in tropical gourds.
including f. sp. benincasae (on wax gourd), f. sp. lagenariae (on bottle gourd), and f. sp. momordicae (on bitter gourd).

**Distribution**
Worldwide

**Host range**
The fungus has a broad host range but the specific forms of the species infect specific crops only.

**Conditions for disease development**
Light, sandy, slightly to moderately acidic soils, poor drainage, and high soil temperatures (35-40 °C) predispose plants to infection in the presence of inoculum.

**Disease management**
**Chemical control** Soil fumigation or steaming is an ideal but difficult to implement practice. Due to the persistence of chlamydospores in the soil the operation is often not 100% effective. Soil drenching with carbendazim or thiophanate-methyl before transplanting can reduce disease incidence.

**Field management** As the fungus prefers acidic soil, liming the soil is recommended. Avoid excessive nitrogen applications as overuse of nitrogen makes the tissue succulent, increasing the risk of a fungal attack. Avoid introduction of the fungus into fields; once the soil is infested, crop rotation is of little use because of the long-term survival (15-20 years) of the fungus in the soil. When infection has been found, remove and destroy infected plants. Use resistant varieties where available. Grafting susceptible varieties onto a resistant rootstock is also a good option for commercial cucurbit growers.