Phytophthora root rot

Phytophthora cinnamomi (oomycete)

Phytophthora root rot may occur at poorly drained sites or in low areas of fields.

**Symptoms.**

Early symptoms are yellowing or reddening of leaves and lack of new growth, followed by leaf drop. Below-ground symptoms vary from slight necrosis of young rootlets to extensive necrosis that turns crowns and main roots reddish brown. Bushes may die eventually.

**Disease cycle.** The pathogen lives in the soil and produces swimming spores that infect the roots. Hardy chlamydospores (the primary over-wintering structures) are released into the soil as the affected roots break down. Abundant soil moisture and temperatures between 68 and 90°F (20 to 32°C) promote disease development.

**Management.** Either avoid planting in poorly drained sites or improve drainage; grow rooted cuttings or nursery plants on raised beds; avoid overirrigating when soil temperatures are high; use effective fungicides (will not cure severely diseased plants).