Root Rots

Pythium, Rhizoctonia and *Fusarium* species

FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

Legume ipmPIPE
Legume ipmPIPE Diagnostic Pocket Series

Root Rots

Pythium* species, *Rhizoctonia solani*, *Fusarium solani* f. sp. *phaseoli*, and *F. oxysporum* f. sp. *phaseoli

AUTHORS: H.F. Schwartz (Colorado State University), R.M. Harveson (University of Nebraska), and G.D. Franc (University of Wyoming)

PHOTOGRAPHS: Courtesy of H.F. Schwartz and R.M. Harveson [09/09]

COMMON HOSTS: Chickpea, Common bean, Cowpea, Lentil, Lima bean, Soybean

SYMPTOMS (ON COMMON BEAN)**:**

FIGURE 1 • Initial *Pythium* infection with sunken light tan tissue on hypocotyl and wilting.

FIGURE 2 • Initial Rhizoctonia root rot lesions are sunken, reddish brown and irregular shaped. Wilted plant is shown also.

FIGURE 3 • Initial Fusarium root rot lesions are reddish-brown and linear, while older lesions cover the roots and hypocotyls.

FIGURE 4 • Fusarium wilt brown to orange discoloration of roots and hypocotyl. Discolored streaks extend upward in water conducting tissue (vascular bundles) to yellow, wilted leaves.

FACTORS FAVORING:

- Contaminated seed and/or infested debris from previous seasons
- Low quality and/or old seed (more than 2 years after certification)
- Cool, wet conditions after planting, and/or factors contributing to slow emergence
- Soil compaction which reduces root growth, and crop rotation less than 3 years
- Cool temperatures with daily highs less than 77°F [25°C] favor *Rhizoctonia* and *Pythium* before flowering, and greater temperatures after flowering favor symptom onset of *Fusarium* diseases

ADDITIONAL DIAGNOSTICS AVAILABLE AT:

http://legume.ipmpipe.org
http://wiki.bugwood.org/PIPE:Legume
http://www.npdn.org/DesktopDefault.aspx