

DISEASES OF SOYBEAN

SEED AND SEEDLING ROT

*Causal organism: Fusarium, Rhizoctonia,
Phytophthora, and Pythium*

SYMPTOMS

Phytophthora can attack and rot seeds prior to emergence, and can cause pre- and post- emergence damping off. It produces tan-brown, soft, rotted tissue. At the primary leaf stage (V1), infected stems appear bruised and soft, secondary roots are rotted, the leaves turn yellow, and plants frequently wilt and die.

Pythium can attack and rot seeds and seedlings prior to emergence and can cause post-emergence damping-off under wet conditions. The characteristic symptom of most *Pythium* infections is soft, brownish-colored, rotting tissue.

Rhizoctonia can damage seeds and plants prior to or after emergence. In seedlings and older plants, a firm, rusty-brown decay or sunken lesion on the root or on the lower stem is a characteristic symptom.

Fusarium is also a common pathogen that can damage seeds and seedlings. It causes light to dark brown lesions on roots that may spread over much of the root system and may appear shrunken. *Fusarium* may attack the tap root and promote adventitious root growth near the soil surface and may degrade lateral roots.

SEED AND SEEDLING ROT



Disease Cycle

Primary infection – Soil

Secondary infection – Air and water

Management

- For *Pythium* and *Phytophthora* spray *Metalaxyl* @ 0.2%
- For *Fusarium* spray *Carbendazim* + *Mancozeb* @ 0.1%.
- For *Rhizoctonia* spray *Validamycin* @ 0.2%.

SOYBEAN MOSAIC

SYMPTOMS

- Infected plants can be recognized by their stunted growth, distorted and puckered leaves.
- The leaves are dwarfed, crinkled and narrow with their margins turned downwards.
- In severe cases, dark green blister like puckering along the veins takes place.
- Pod setting is drastically reduced.
- Infected plants produce distorted pods and fewer seeds.
- Seed discolouration can be seen under severe infection.
- The infected plants remain green even at the end of the growing season.

PATHOGEN: *Soybean mosaic virus* Soybean mosaic virus (SMV) is a member of the plant virus genus *Potyvirus* (family *Potyviridae*) contain ssRNA.

DISEASE CYCLE

- The virus is seed borne and is transmitted by aphids.

MANAGEMENT

- Use virus free seed from healthy crop.
- Rogue out infected plants and burn them.
- Spray dimethoate@2ml/lt to control the vector

SOYBEAN MOSAIC SYMPTOM



Fig. 1. Soybean mosaic virus symptoms on foliage.



Seed discolouration