

Soilborne Pests & Diseases - IPM Guideline for Common Bean (dry, snap, fresh market, seed)

Note: this guideline may be applicable to other legume crops including:

Cool Season (chickpea, lentil, field pea)

Warm Season (cowpea, lima bean, soybean)

Pest & Disease Diagnostic Confirmation

Work with local crop consultants, field specialists and diagnosticians to confirm identity of insect pest and/or disease causes. Provide background information on the field and problem, and deliver representative samples (including healthy appearing to badly affected tissue and plants) to qualified experts for diagnosis and confirmation. <http://wiki.bugwood.org/PIPE:Legume>

Vegetative Growth Stages

Seed and planting time applications before and during planting may reduce the initiation and severity of soilborne insect pests (e.g., maggots, grubs, wireworms, cutworms,) and soilborne fungal diseases (e.g., Pythium, Rhizoctonia, Aphanomyces, Fusarium) in regions with a history of the pest(s) and disease(s) and following periods of favorable weather (rain, low to moderate temperatures). Refer to pesticide labels for specific directions and restrictions, and check with local extension specialists and pest management personnel for specific recommendations. Insect and disease problems can be manifested as pre-emergence damping off, post-emergence damping off, and wilting and death of seedlings.

Reproductive Growth Stages

There are no pesticide applications available to reduce post-emergence and wilt losses from soilborne insect pests and pathogens during V3 – R 3. Inter-row ripping during early vegetative stages may promote better drainage and root development in soils with crusting and compaction problems. Future management strategies should include:

- Rotate to exclude susceptible host crops (i.e., common bean volunteers) for 3 + years; examples of non-host crops include small grains and corn
- avoid planting in fields with a history of insects and diseases during the last 3 years
- plant resistant or less susceptible varieties if available
- plant high quality seed treated with approved pesticides
- follow recommended plant population - row & plant spacing
- soil test and use a moderate fertility program; e.g., not to exceed 75 - 100 lb N/A
- incorporate fall and/or spring tillage to eliminate carryover seed and volunteer beans in last year's bean fields, promote root health and moisture drainage in this year's bean fields
- reduce soil compaction by fall or early spring ripping of soil, inter-row ripping, and minimize or combine field operations to reduce compaction
- monitor irrigation scheduling to avoid flowering-period deficiency but avoid late-season saturation
- utilize timely scouting, pest forecasting, and weather monitoring services
- Pesticide Information available at: <http://www.highplainsipm.org/>

[Guideline adapted for Colorado and surrounding region by Dr. H. F. Schwartz, M. S. McMillan, and K. L. Otto]