

Virus 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)

Disease Diagnostic Confirmation

Work with local crop consultants, field specialists and diagnosticians to confirm identity of 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

There are no pesticides that can be applied to prevent or reduce losses from virus pathogens transmitted by seed, mechanical means and insect vectors. Virus diseases (e.g., Alfalfa mosaic, Bean common mosaic, Bean yellow mosaic, Cucumber mosaic, Beet curly top) can be manifested as plant stunting, wilting and death; leaf distortion (cupping, curling, puckering, thickening, blistering), leaf discoloration (spot, mottle, mosaic, vein banding); and stem and pod effects (reduced set, poor seed fill, distortion, discoloration).

Reproductive Growth Stages

There are no pesticide applications available to reduce reproductive losses from virus diseases. 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 insect vectors and diseases during the last 3 years
- plant resistant or less susceptible varieties if available
- plant high quality seed treated
- 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
- monitor irrigation scheduling to avoid flowering-period deficiency but avoid late-season saturation
- utilize timely scouting, pest forecasting, and weather monitoring services

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