

## Foliar Fungal Diseases - IPM Guideline for Lima Bean

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

**Common Bean** (dry, snap, fresh market, seed)

**Cool Season** (chickpea, lentil, pea)

### Disease Diagnostic Confirmation

Work with local crop consultants, field specialists and disease diagnosticians to confirm identity of disease causes which may include Anthracnose (*Colletotrichum lindemuthianum*), Downy Mildew (*Phytophthora phaseoli*), Powdery Mildew (*Erysiphe polygoni*), and rusts (*Uromyces appendiculatus*, *Phakopsora pachyrhizi*). 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

Fungicide applications are generally not recommended in the early vegetative growth stages for fungal disease control. Applying a fungicide just prior to flowering may be prudent if disease risk is high. This is especially true for late-planted crops and/or very late-maturing varieties that may develop a large canopy before flowering

### Reproductive Growth Stages

Foliar fungal diseases may develop rapidly during reproductive growth stages. The first fungicide application should be made before infection has appeared on more than 5 - 10% of the leaflets (one or more pustules or lesions per leaflet) in the canopy for optimum control. The benefits of applying a fungicide at late growth stages are uncertain. In addition, many fungicides have preharvest interval restrictions (e.g., 14 to 30 days). Refer to fungicide labels for specific directions and restrictions, and check with local extension specialists and pest management personnel for specific recommendations.

- Rotate to exclude susceptible host crops for 3 + years; examples of non-host crops include small grains and corn
- avoid planting in fields with a history of disease during the last 3 years
- plant resistant or less susceptible varieties if available
- 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 legumes in last year's legume fields, promote root health and moisture drainage in this year's legume fields
- monitor irrigation scheduling to avoid flowering-period deficiency but avoid late-season saturation
- utilize timely scouting, disease forecasting, and weather monitoring services
- consider protection with a labeled fungicide at first confirmed signs of disease on numerous plants in the field or nearby fields
- follow a 5 to 10 day interval between sprays, depending upon disease pressure and the fungicide selected until 14 to 30 days pre harvest interval

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