

2007 Disease Prevention and Spray Guide (Legume Vegetables)

David B. Langston, Jr.
Department of Plant Pathology
University of Georgia

Soilborne diseases. There are several soilborne diseases that are common among legume crops. Most of these attack the seedling stage of the crop and are referred to as damping-off diseases. Many of these diseases, however, attack the foliage and pods and are deposited there by water splash or by physical contact between the pods and the soil. **Damping-off** is generally caused by either *Rhizoctonia solani*, or a species of *Pythium*. However, **Fusarium root rot** (caused by *Fusarium solani* f. sp. *phaseoli*) can also cause seedling losses. **Southern stem rot** (*Sclerotium rolfsii*) can cause both seedling and pod rots and is more of a problem in warmer weather. **White mold** (*Sclerotinia sclerotiorum*) causes a pod and stem blight and is more of a cool weather disease. White mold is often confused with the aerial phase of *Pythium* called cottony leak. However, it is important to remember that cottony leak occurs during warm weather and white mold occurs during cool weather usually associated with late fall production. **Ashy stem blight**, caused by *Macrophomina phaseolina*, is another soilborne disease that attacks the stems of older plants and requires soil temperatures in excess of 80°F to cause infections.

Recommended practices in chronological order are as follows:

1. Rotation with non-legume crops reduces potential inoculum of all of the above diseases.
2. Deep turning with a moldboard plow will help with all except *Pythium*.
3. Ridomil Gold PC in-furrow suppresses damping-off caused by *Pythium* and *Rhizoctonia*.
4. Ridomil Gold or Ultraflourish alone will suppress *Pythium*.
5. Quadris/Amistar or Terraclor or PCNB in-furrow suppress damping off caused by *Rhizoctonia*.
6. Avoiding dirtying cultivations helps avoid ashy stem blight and southern stem rot.
7. Applications of Nova or Quadris/Amistar suppress pod blights caused by *Rhizoctonia* and *Sclerotium*.
8. Endura, Topsin M, and Rovral are labeled for white mold caused by *Sclerotinia sclerotiorum*.

Foliar diseases. There are several foliar diseases of legume vegetables. Rust (*Uromyces appendiculatus*) has often been a problem on pole bean but is rarely a problem on snap bean. Most commercial cultivars have good innate resistance to the rust caused by *Uromyces*. All legume vegetables are susceptible to soybean rust caused by *Phakopsora pachyrhizi*, but, to a lesser degree than soybean. Other foliar pathogens include anthracnose (*Colletotrichum lindemuthianum*) mainly on lima bean, Alternaria leaf and pod spot (*Alternaria* spp.) on snap bean, and sometimes powdery mildew (*Oidium* spp.) on southern peas. English peas get a downy mildew that seldom causes much economic damage. Copper products can be used on bacterial epidemics as needed.

Recommended practices in chronological order are as follows:

1. Rotation with non-legume crops reduces potential inoculum of *Alternaria* and anthracnose.
2. Use resistant varieties if available.
3. Nova, Bravo (snap bean only), Quadris/Amistar, and Headline applied for rust as needed.
4. Topsin M and/or Quadris/Amistar, and Headline for anthracnose preventively.
5. Bravo (snap bean only) and Quadris/Amistar will suppress *Alternaria*.
6. Nova and Quadris/Amistar or Headline are generally effective against powdery mildew.

Spray Schedule for Snap/Lima Beans

First trifoliolate	Early Bloom	50% Bloom	Late Bloom	Pod fill	Harvest
Bravo	Quadris/Amistar Headline	Bravo	Nova	Quadris/Amistar Headline	
		Topsin M (anthracnose) Endura, Topsin M, Rovral (Fall spray for <i>Sclerotinia</i>)			

Scout fields once a week for rust, *Sclerotinia*, and anthracnose. Preventive sprays are generally more effective but will still suppress disease if sprayed at disease onset. If rust seems worse or more widespread than usual, please send in a sample to your local county agent for diagnosis. Common bean rust and soybean rust are difficult to distinguish unless spores are observed using a compound microscope.