Martin-Gatton
College of Agriculture, Food and Environment
Cooperative Extension Service

Plant Pathology Fact Sheet **PPFS-VG-50**

Organic Commercial Spray Schedule for Field Production of Green Beans

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Introduction

Commercial field production of organic beans allows growers to yield premium crop prices. However, numerous plant pathogens can cause disease, resulting in plant damage and yield loss. Applications of fungicides and bactericides are often necessary to limit the impact of plant diseases. These products provide the greatest efficacy when applied prior to disease onset. Growers should develop a preventative spray schedule for each crop and season to limit the impact of diseases. Organic growers will rely on specific products to maintain certifications or be able to market produce as organically produced. This document provides information on the timing of the most common bean diseases, as well as an example spray schedule. Fungicides recommended here include a few of the most common products; a complete list of registered fungicides can be found in *Vegetable Production Guide for Commercial Growers* (ID-36) and *Southeastern U.S. Vegetable Crop Handbook* (SEVEW); generic products may also be available. Information on OMRI approved products is available at https://www.omri.org/.

Beans	
Disease	**Time Period**
Pythium damping off, root rot	May - Sept
Rhizoctonia root, stem rot	May - Sept
Angular leaf spot	June - Oct
Bacterial brown spot	June - Oct
Pythium blight	July - Aug
Ashy stem blight	July - Sept
Cercospora leaf spot	July - Sept
Common blight, bacterial blight	July - Sept
Rhizoctonia blight	July - Sept
Southern blight	July - Sept

Timeline of common and important diseases occurring on green beans.

Common blight (*left*), Rhizoctonia root and stem rot (*center*), and brown spot (*right*) are common bean diseases occurring in Kentucky.

Disease Management for Organic Field Green Beans

GENERAL NOTES

The following includes an example of products; this list is not comprehensive. A complete list of fungicides and their efficacy can be found in in *Vegetable Production Guide for Commercial Growers* (ID-36) and *Southeastern U.S. Vegetable Crop Handbook* (SEVEW). See Additional Resources section.

Always read product labels for specific use instructions. The label is the law.

PREPLANT

Rotate out of legumes for at least 3 years, especially for sites with a history of soil-borne diseases. Space plants for maximum air circulation. When available, use resistant cultivars (e.g. bacterial brown spot or virus-resistant cultivars). Follow cultural practices (rotate crops, improve drainage, select resistant cultivars, practice sanitation).

AT PLANTING (Approximately May)

Apply LalStop K61 or RootShield Plus at planting if field has a history of Rhizoctonia root rot or if damping off disease emerges. Apply LalStop K61 or Obtego if Pythium root rot emerges.

VEGETATIVE GROWTH (Approximately May through June)

Space plants and rows for increased air circulation. Practice good sanitation (e.g. remove diseased or senescing tissue regularly, remove clippings and debris from field).

Application Timing *Weeks after planting*	**Application Notes**	**Fungicides/Bactericides[2]**	**Target Diseases**
Week 1 to 5	Applications should be made every 1 to 2 weeks.	LalStop K61	Pythium root rot & damping-off
		Obtego	
Week 1 to 5	Applications should be made every 1 to 2 weeks.	LalStop K61	Rhizoctonia root & stem rot
		Root Shield Plus	
Week 1 to 5	Applications should be made every 1 to 2 weeks. A SAR inducer can help plants build immunity.	Cease/Stargus	Angular leaf spot
		Copper[3,4]	
		OSO	
		SAR inducer Actinovate/Regalia	

HARVEST (Approximately early July through mid-August)

Application Timing *Weeks after planting*	**Application Notes**	**Fungicides/Bactericides[2]**	**Target Diseases**
Week 6 to 12	Applications should be made every 1 to 2 weeks. A SAR inducer can help plants build immunity.	Cease/Stargus	Angular leaf spot, ashy stem blight, Cercospora leaf spot
		Copper[3,4]	
		OSO	
		SAR inducer Actinovate/Regalia	
Week 6 to 12	Applications should be made every 1 to 2 weeks. A SAR inducer can help plants build immunity.	Cease/Stargus	Rhizoctonia blight
		Companion/Serenade	
		SAR inducer Actinovate/Regalia	

[1] Application necessary when diagnostic results confirm presence of disease or if field has history of disease.

[2] See SEVEW Table 3-51 Biopesticides for alternative products. (Note: This production guide is revised annually and location of this information could change.)

[3] Copper products can include Badge, Basic Cop, Nordox, or NuCop.

[4] Combining copper fungicides with SAR products like Actinovate, Regalia, and some Bacillus products can enhance efficacy of copper-based fungicides

Disease Management for Organic Field Green Beans

HARVEST (Approximately early July through mid-August) *(cont'd)*

Application Timing *Weeks after planting*	**Application Notes**	**Fungicides/Bactericides**[2]	**Target Diseases**
As needed[1]	Applications should be made every 1 to 2 weeks. A SAR inducer can help plants build immunity.	Cease/Stargus	Bacterial brown spot, common blight
		Copper[3,4]	
		Leap	
		SAR inducer Actinovate/Regalia	
As needed[1]	Applications should be made every 1 to 2 weeks.	LalStop K61	Pythium blight
		Obtego	
As needed[1]	Applications should be made every 1 to 2 weeks.	Obtego	Southern blight
		OSO	

[1] Application necessary when diagnostic results confirm presence of disease or if field has history of disease.
[2] See SEVEW Table 3-51 Biopesticides for alternative products. (Note: This production guide is revised annually and location of this information could change.)
[3] Copper products can include Badge, Basic Cop, Nordox, or NuCop.
[4] Combining copper fungicides with SAR products like Actinovate, Regalia, and some Bacillus products can enhance efficacy of copper-based fungicides

Example spray schedule for organic field production of green beans.

Organic Field Bean		
Weeks after Seeding	**Fungicide(s)**	**Target Diseases**
2	Cease	BS, LS, RB
3	Copper+Actinovate	BS, LS, RB
4	Cease	BS, LS, RB
5	Copper+Actinovate	BS, LS, RB
Weeks during Harvest	**Fungicide(s)**	**Target Diseases**
7	Cease	BS, LS, RB
9	Copper+Actinovate	BS, LS, RB
11	Cease	BS, LS, RB
12	Copper+Actinovate	BS, LS, RB

BS – Bacterial leaf spots; LS – Fungal leaf spots; RB – Rhizoctonia blight

Disclaimer

Fungicides listed here include a few of the most common products available and were selected to simplify information in this publication. No endorsement is intended nor is criticism implied of similar products that are not named.

Additional Resources

Additional information can be found on the UK Plant Pathology Extension Publications webpage https://plantpathology.ca.uky.edu/extension/publications

- Vegetable Production Guide for Commercial Growers (ID-36)
- Southeastern U.S. Vegetable Crop Handbook (SEVEW)
- OMRI Product Website https://www.omri.org/

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Editor: Cheryl Kaiser, Plant Pathology Extension Support
Photos: Cheryl Kaiser, UK (Rhizoctonia root rot) and Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org (brown spot & common blight)