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

Plant Pathology Fact Sheet **PPFS-VG-35**

Commercial Spray Schedule for Field Production of Summer Squash & Zucchini

Nicole Gauthier
Plant Pathology Extension Specialist

Kim Leonberger
Plant Pathology Extension Associate

Sara Long
Plant Disease Diagnostic Assistant

Rachel Rudolph
Horticulture Extension Specialist

Introduction

In Kentucky, summer squash and zucchini are common cucurbit crops grown in open field production. Numerous plant pathogens can cause disease, resulting in plant damage and yield loss. Applications of fungicides and bactericides are often necessary to limit plant diseases. Fungicides and bactericides provide the greatest efficacy when applied preventively (prior to disease onset), rather than after observing disease symptoms. Growers can develop a spray schedule for each season to limit the impact of diseases on crop production. This document provides information on the timing of the most common summer squash and zucchini diseases, as well as an example spray schedule. Fungicides and bactericides recommended here include a few of the most common products. A complete list of registered fungicides can be found in the *Vegetable Production Guide for Commercial Growers* (ID-36) and the *Southeast U.S. Vegetable Crop Handbook* (SEVEW); generic products may also be available.

Summer Squash & Zucchini	
Disease	**Time Period**
Pythium root rot	May - June
Bacterial wilt	June - Aug
Cercospora leaf spot	June - Aug
Fusarium wilt	June - Aug
Powdery mildew	June - Aug
Downy mildew	July - Aug

Timeline of common and important diseases occurring on summer squash and zucchini crops in field production.

Downy mildew, a common disease in summer squash, can advance quickly from tiny lesions (*left*) to severe damage (*right*) under disease-favorable enviromental conditions.

Disease Management for Field Summer Squash & Zucchini

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 the *Vegetable Production Guide for Commercial Growers* (ID-36) and the *Southeast U.S. Vegetable Crop Handbook* . See Additional Resources section.

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

PREPLANT

Do not plant cucurbit crops in the same field year after year. Rotate out of cucurbit crops for at least 3 years in the same field, especially for sites with a history of soilborne diseases. Space plants for maximum air circulation. When available, use resistant cultivars (e.g. powdery mildew resistant cultivars). Use treated seed when available to reduce seedling diseases. Follow cultural practices (rotate crops, improve drainage, practice sanitation).

AT PLANTING (Approximately early May)

To prevent bacterial wilt, manage cucumber beetles beginning at seedling stage (See *Cucumber Beetles* Entfact-311 publication)

VEGETATIVE GROWTH (Approximately early May through mid-June)

Practice good sanitation, such as removing diseased or senescing tissue regularly and removing clippings and debris from the field.

Application Timing *Weeks after planting/transplant*	**Application Notes**	**Fungicides**[2]	**Target Diseases**
Week 1 to 5	Use fungicides preventatively before disease develops. Applications should be made every 1 to 2 weeks. Rotate products between applications to avoid development of disease resistance.	Chlorothalonil	Leaf spots
		Mancozeb	

FLOWERING THROUGH HARVEST (Approximately mid -June through mid-August)

Application Timing *Weeks after planting/transplant*	**Application Notes**	**Fungicides/Bactericides**[2]	**Target Diseases**
Week 6 to 10	Use fungicides preventatively before disease develops. Applications should be made every 1 to 2 weeks. Rotate products between applications to avoid development of disease resistance.	Chlorothalonil	Leaf spots, powdery mildew
		Fontelis	
		Mancozeb[3]	
		Merivon	
		Pristine	
		Quadris Top	
Week 6 to 10	For severe powdery mildew, add an additional product to tank mix	Rally	Powdery mildew
		Torino	
		Vivando	
As needed[1]	Applications should be made every 1 to 2 weeks when risk is high. Monitor disease via ipmpipe.org forecasting site.	Previcur	Downy mildew
		Ranman	

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

[2]See SEVEW Table 3-53 Biopesticides for alternative products. (Note: This production guide is revised annually, and the location of this information can change with updates.)

[3]Mancozeb is not effective for the management of powdery mildew.

Example field spray schedule for summer squash and zucchini

Summer Squash & Zucchini		
Weeks after Planting	**Fungicide(s)**	**Target Diseases**
1-5	Mancozeb	LS
Weeks during Harvest	**Fungicide(s)**	**Target Diseases**
6	Fontelis	LS, PM
7	Chlorothalonil + Torino[1]	DM[2], LS, PM
8	Fontelis	LS, PM
9	Chlorothalonil + Torino[1]	DM[2], LS, PM
10	Fontelis	LS, PM

DM - downy mildew; **LS** - leaf spots; **PM** - powdery mildew

[1]Chlorothalonil is effective against downy mildew; however Torino is not.
[2]Refer to ipmpipe.org for risk and forecasting information.

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

- Cucumber Beetles (ENT-311)
https://entomology.ca.uky.edu/ef311
- IPM Pipe Cucurbit Downy Mildew Forecasting Website
https://cdm.ipmpipe.org/
- Plant Pathology Extension Publications (UK)
https://plantpathology.ca.uky.edu/extension/publications
- Southeast U.S. Vegetable Crop Handbook (SEVEW)
https://www.aces.edu/blog/topics/crop-production/southeastern-us-vegetable-crop-handbook/
- Vegetable Production Guide for Commercial Growers (ID-36)
https://www2.ca.uky.edu/agcomm/pubs/ID/ID36/ID36.pdf

April 2024

Acknowledgments
The authors thank April Lamb, Plant Pathology Postdoctoral Scholar, University of Kentucky, and Henry Smith, Plant Pathology Graduate Student, University of Kentucky, for their reviews of this publication.

Editor: Cheryl Kaiser, Plant Pathology Extension Support
Photos: Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org