

Backyard Berry Disease Management Using Cultural Practices (with Low Spray, No Spray & Organic Options)

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INTRODUCTION

Backyard berry (blueberry, raspberry, blackberry, and strawberry) production requires a proactive approach to disease management. Preventative practices are recommended to minimize inputs. While intensive culture may result in the highest quality fruit, reduced inputs can result in acceptable fruit with minor crop losses or aesthetic maladies. This guide focuses on preventative cultural practices with options of low-input fungicide applications. Refer to the homeowner fruit spray guide (ID-21) for a more complete pesticide spray schedule.

CULTURAL PRACTICES

Cultural practices should always be considered when planning, planting, and maintaining a backyard berry plantings. Some practices keep plants healthy and assure the lowest risk for disease outbreaks. Other practices eliminate and eradicate sources for fungal and bacterial pathogens, thereby reducing risk for disease. Combine cultural practices with a fungicide preventative program or use them alone for a no-spray alternative.

- A well-drained site located in full sun is required.
- Maintain plant vigor by watering during drought, mulching to regulate soil moisture and temperature, and amending soil nutrients according to soil tests.
- Minimize insect and wildlife damage.
- Prune and space plants to increase air circulation.
- Utilize specific cultural practices listed in the table to eliminate disease-causing pathogens and reduce risks for infections.

RESISTANCE

A healthy berry planting begins with planning. Disease-resistant cultivars can reduce the need for many fungicide and bactericide applications. Growers should focus on cultivars that are resistant to the most devastating berry diseases in their area. Leaf spots and fruit rots are often the most challenging berry diseases in Kentucky. Refer to Tables 2-1 on page 27 (strawberry), and 4-2 on page 109 (blueberry) of *Midwest Small Fruit Pest Management Handbook* for a listing of disease-resistant berry cultivars.

USING THE TABLE

The following table focuses on cultural practices as a means for eliminating or reducing risk for cane, branch, leaf, and fruit disease. Cultural practices should be considered for each plant growth stage, regardless of fungicide program; target diseases are listed for each practice. Fungicides are listed in the right-hand column; organic fungicides (OMRI-approved) are marked with an asterisk (*). Organic fungicides are generally less effective for managing diseases than synthetic products.

RESOURCES

- Plant Pathology Extension Publications
<http://www2.ca.uky.edu/agcollege/plantpathology/extension/pubs.html>
- Disease and Insect Control Program for Homegrown Fruit in Kentucky (ID-21)
<http://www.ca.uky.edu/agc/pubs/id/id21/id21.pdf>
- Midwest Small Fruit Pest Management Handbook
http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/MwSmFruitPMHandbook.pdf
- Fruit, Orchard, and Vineyard Sanitation (PPFS-FR-T-05)
http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-GEN-05.pdf
- Homeowner's Guide to Fungicides (PPFS-GEN-07)
http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-GEN-07.pdf

Time of Year ¹	Growth Stage	Target Disease	Cultural Management	Target Disease	Chemical Management ²
Blueberries					
March	Dormant	Phomopsis twig blight	Prune out infected stems; Remove weak canes; Avoid mechanical damage.	Phomopsis twig blight	Lime sulfur*
May	Petal fall	Phomopsis twig blight	Avoid excess nitrogen; Prune infected stems.	Phomopsis twig blight	Captan
	After bloom	Fruit rots Phomopsis twig blight	Remove infected berries; Avoid overhead watering; Avoid excess nitrogen.	Leaf spots Fruit rots	Captan
June	Harvest	Fruit rots	Remove infected berries; Avoid drought stress; Irrigate; Avoid excess nitrogen.		
July	End of season	Fruit rots Phomopsis twig blight	Remove all berries from bushes/ground and destroy; Mulch around plants; Prevent drought stress.		
Brambles					
March	Dormant	Anthracoise Cane blight Spur blight	Remove canes that fruited the previous season, if not done in autumn.	Anthracoise Cane blight Spur blight	Lime sulfur*
April	Vegetative growth	Anthracoise Cane blight Spur blight Orange rust Viruses	Prune to increase air movement. Remove infected plants including roots (orange rust); Remove weeds that may serve as inoculum sources.	Anthracoise Cane blight Spur blight	Copper* or Captan
Mid-May	Bud break (buds show silver)	Anthracoise Cane blight Spur blight	Remove weeds to increase air movement.	Anthracoise Cane blight Spur blight	Copper* or Captan
Late May	During bloom	Botrytis fruit rot Orange rust	Remove infected fruit and discard (Botrytis); Remove infected plants including roots (orange rust).	Leaf spots	Captan
Mid-June/ mid-July	Harvest	Botrytis fruit rot	Remove infected fruit and discard.		
	End of season	Anthracoise Cane blight Spur blight Orange rust	Remove canes that fruited the previous season; Remove infected plants including roots (orange rust).		
Strawberries					
	Pre-bloom		Remove weeds to reduce inoculum sources; Plant with wide row spacing.		
	During bloom	Fruit rots Leaf spots	Place straw mulch around plants; Remove weeds to allow for better air flow.	Fruit rots Leaf spots	Captan
	Post-bloom	Fruit rots Leaf spots	Remove infected berries; Remove weeds to allow for better air flow; Remove infected leaves.		
	Harvest	Fruit rots	Remove infected berries; Frequently collect fruit.		
	End of Season	Fruit rots Leaf spots	Renovate beds; Mow old foliage (do not damage crowns); Rake, remove, and discard all leaf and berry debris.		

¹The growth stage indicated typically occurs during this time of year; however, this may vary from year to year depending on environmental conditions.

²Products noted with an * indicate those that may be used in organic production. For a list of products approved by Organic Materials Review Institute (OMRI) please see University of Kentucky publication *Homeowner's Guide to Fungicides* (PPFS-GEN-07).

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