

Table 29. Fungicides registered for use on blueberries and their primary uses.

Fungicide	Mummyberry		Phomopsis	Fusicoccum	Alternaria	Anthracnose	Botrytis	Phytophthora
	Primary	Secondary						
Abound	+ /+++	+ /+++	++	?	+	++++	+	?
Aliette	0	0	++ /++++	?	++ /++++	+++	?	+++
Bravo	++***	+	+++	+++	+	+++	++	0
Cabrio	+ /+++	+ /+++	+++	?	+	++++	++**	?
Captan	+	+ /+++	+++	+	+	++ /++++	+	0
Elevate	+	++	+	?	0	0	++++	0
Indar**	+++	+++	+++ /++++	?	+	0	?	0
Lime sulfur*	?	?	++*	?	?	?	?	0
Rovral	0	0	0	0	0	0	++++	0
Ridomil	0	0	0	0	0	0	0	++++
Ziram	++	++	+++	++ /++++	++	+++	++	0

0=not effective, +=poor, ++=fair, +++=good, ++++=excellent, ?=not known.

*Use lime sulfur only on late dormant or dormant bushes. Do not mix with oil.

**Indar is allowed in blueberries under Section 18 Emergency Exemptions on a state by state basis. Check with your Extension Specialist.

***suppression only.

leaves, and be more susceptible to other stresses than healthy-appearing plants. Branches may suddenly wilt, followed by plant mortality in some instances. The disease may be found throughout an entire field, or it may be confined to one or a few area(s). The most important diagnostic characteristics are the presence of the fungus: white mycelial fans underneath the outer bark or the crown of the plant, black rhizomorphs (resembling shoestrings) attached to the roots or the trunk, and yellowish-brown mushrooms produced at the base of the plant in late summer or early autumn.

Two species of the fungus, *Armillaria mellea* and *A. ostoyae*, are probably causal agents of the disease. The fungus survives in the soil on root pieces of susceptible hosts (pine, oak, etc.). The fungus can infect bushes through root grafts and it can survive on wood chip mulches.

Management: The disease is best avoided by thoroughly discing the soil where blueberries are to be planted, and removing as many of the root fragments as is possible. If possible, leave the field fallow three years after the trees have been removed. Soil sterilants or fumigants are effective at killing the fungal inoculum. The disease is very difficult to control once it is present in a field. Dead or dying plants should be removed, and adjacent plants should be inspected at the soil-line for mycelial fans or rhizomorphs. Remove any plants which have these signs of the pathogen. Wood chip mulch should be removed from infection “hot spots.” Although spot fumigation might be effective,

chemical controls are usually not feasible in fields where the disease is present. Most varieties are probably susceptible to the disease.

Viruses and MLOs

Blueberry Shoestring Disease: This viral disease was originally described in New Jersey. In Michigan, the disease has been found in 0.5% of the bushes; an assessment has not been done for potential losses due to the virus.

The most common symptom is an elongated reddish streak along the new stems. The leaves may also show red banding or a red-purple oak-leaf pattern. Diseased leaves are narrow, wavy and somewhat sickle-shaped. Flowers may be red-streaked, and berries turn purple prematurely. Within a few years, berry production drops dramatically.

Management: Other than buying disease-free plants, destroying wild plants near the planting, and removing diseased plants, controls do not exist. As with most virus diseases, the best controls are preventing disease introduction, and detecting the disease when it is localized in a small portion of the field. The virus has been observed most often in Burlington, Jersey, June, Cabot, and Rancocas. Other varieties may possess field resistance to the disease.

Blueberry Stunt: This disease was originally thought to be caused by a virus but it is now known to be caused by a mycoplasma-like organism or