

Fruit Crop Disease Strawberries

Disease

Crown Rot
(*Anthracnose*)

Symptoms: Plants wilt suddenly and die during warm weather. Crowns have a reddish discoloration extending into the center. Black lesions occur on leaf petioles or runners. Disease development is inhibited by cool weather.

Source of Inoculum: The fungus lives through the winter on infected plant parts. Control: Obtain plants grown in areas where the disease is not present. Ste the earliest runner plants and remove them to plant beds (nursery) as soon as they have sufficient roots to be removed from the mother plant. Destroy the winter stools as soon as sufficient plants are obtained.

Gray Mold
(*Botrytis* sp.)

Symptoms: This fungus may attack flowers, flower parts, fruit and leaf parts. On the fruit it causes a rot which is first light brown and soft (not “leaky”). As the berry rots it becomes covered with the grayish, powdery growth and in the final stages becomes tough and firm in texture. Source of Inoculum: Fungus survives in decaying plant tissue of strawberries and many other plants. Control: Control leaf diseases and remove dead leaves which can furnish a site for the fungus to develop. Spray with Captan, Benlate or Ronilan. Research indicates Ronilan is highly effective on a Gray Mold but should be alternated with Benlate plus Captan for berry rot control.

Leaf Blight
(*Dendrophoma* sp.)

Symptoms: The first appearance of infection is large spots which are circular and reddish-purple, become zonated with age. The spots have a dark brown center surrounded by a lighter brown area with a purplish border. Mature spots may be circular, oval or V-shaped. Source of Inoculum: The fungus lives from year to year primarily on infected plant tissue. Control: Plant disease-free plants. Follow spray schedule for leaf spot.

Leaf Scorch
(*Diplocarpon* sp.)

Symptoms: The first appearance of leaf scorch occurs on the upper leaf surfaces as small purplish discolorations which rapidly enlarge into irregular purplish blotches from 1/16 to 3/16 inch in diameter. The spots may become numerous and coalesce. In severe cases the edges of the leaflets curl upward and the tissue dies, giving the plant a scorched appearance. Source of Inoculum: The fungus survives from year to year on infected leaves. Control: Plant disease-free plants. Rotate strawberry fields, if possible. Follow spray program for leaf spot.

Leaf Spot (“rust”)
(*Mycosphaerella* sp.)

Symptoms: The spots are at first less than 1/8 inch in diameter and purplish-red. Spots enlarge to about 3/16 inch. They have white or gray centers with purplish borders. Source of Inoculum: The fungus lives through winter on infected plant parts.

Powdery Mildew
(*Sphaerotheca* sp.)

Symptoms: Affected plants show a white powdery growth on the surface of the leaves and fruit. The leaves that become infected have a tendency to roll up. Source of Inoculum: The fungus persists from year to year on the strawberry and various wild hosts. Usually a problem in the spring and early summer months.

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Root Knot Nematodes
(*Meloidogyne hapla*)

Symptoms: Affected plants are stunted, unthrifty, unproductive and often pale green. Galls or knots on the roots are rather small. Numerous secondary roots may develop at the small swellings. Frequently, blackened rotted roots are associated with root knot problems. Source of Inoculum: Root knot nematodes live from year to year in the soil and on the roots of strawberry plants and many weed plants. Root knot is more severe in light soil types. Control: Fumigate plant bed soil and field soil. See table on Nematode Control in Fruit Crops.

Summer Dwarf or Bud Nematode
(*Aphenlenchoides* sp.)

Symptoms: Affected plants are severely stunted during the summer and early fall. Older leaflets are usually darker green with a greasy appearance. Young leaflets are reduced in size, usually crinkled, somewhat elongated with shorter petioles. Margins of leaflets may curl upward in the young leaflets and downward in the older leaflets. Source of Inoculum: Bud nematodes live from year to year on infected daughter plants and in the soil, Control: Fumigate fields where the disease has occurred, and obtain disease-free plants. No satisfactory irradicant treatment for infected plants can be recommended.

Efficacy of Fungicides Used in Strawberry Production

Fungicides	Diseases					
	Anthracnose Fruit Rot	Crown Rot	Botrytis Gray Mold	Leaf Spot	Bacterial Leaf Spot	Powdery Mildew
Topsin-M	0	0	1	1-2	0	2*
Captan	2	2	1	1	0	0
Copper	1	2	2	2	2	1
Nova	1	0	0	2	0	2
Quadris	2	2	1	2	0	0
Rovral	0	1	3	2	0	0
Sulfur	0	0	1	1-2	0	2
Elevate	0	0	3	0	0	0
Switch	2	2	2	1	0	0
Cabrio	2	2	1	2	0	2
Procure	0	0	0	0	0	3

*Resistance may render ineffective.
0 = No control; 1 = fair control; 2 = good control and 3 = excellent control.

Fungicide Spray Program for Strawberries

Time of Application	Disease to be Controlled	Spray Material*	Amount/ 100 gals	Remarks
November 15 – Bloom	Leaf Spot and other foliar diseases	Topsin-M + Captan <u>OR</u>	.5 lb + 2 lbs	Alternate foliar sprays.
		Rovral <u>OR</u>	1.5 – 2 pts	Do not apply Rovral more than 4 times per season.
		Fixed Copper <u>OR</u> Syllit 65W	Mfg. label 1.5 – 2 lbs	Do not apply Syllit within 14 days of harvest.
		<u>OR</u> Nova 40W	2.5 – 5 lbs	14 to 21 day interval.
	Bacterial Leaf Spot	Fixed Copper	Mfg. label	Alternate with other fungicides.
Bloom - Harvest	Powdery Mildew	Topsin-M <u>OR</u>	.5 lb	Alternate Topsin-M with sulfur to avoid disease resistance from occurring. Use wettable sulfur. Do not apply sulfur when temperature is above 85 degrees F.
		Sulfur <u>OR</u> Nova 40W <u>OR</u>	Mfg. label 2.5 – 5 ozs	
			14 ozs	
		Cabrio Procure	4-8 oz/A	1 day PHI
	Leaf Spot Leaf Scorch Leaf Blight	Syllit 65W <u>OR</u> Nova 40W <u>OR</u> Cabrio	1.5 – 2 lbs	Do not use Syllit within 14 days of harvest.
			2.5 – 5 ozs 14 oz/A	
Red Stele Phytophthora Crown Rot	Aliette <u>OR</u> Ridomil 2E	2.5 – 3.5 lbs/A	Foliar spray. 14 days after Planting. Apply in sufficient water to move product into the root zone.	
		2 qts/A		
Fruit Rot Gray Mold Anthracnose Leaf Spot	Topsin-M + Captan <u>OR</u> Quadris <u>OR</u> Elevate Plus Captan <u>OR</u> Switch <u>OR</u> Cabrio	.5 lb + 2 lbs	Alternate combination Sprays. Spray at 7 to 14 day intervals. For Anthracnose only. Elevate for gray mold.	
		1.5 lbs + 2 lbs		
		10 ozs/100 gals		
		1.5 lbs/A plus 2 lbs		
		14 ozs/A 14 ozs/A		