

## 2007 Disease Prevention and Spray Guide (Watermelon)

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**Soilborne diseases.** There are some soilborne diseases that affect watermelons. These diseases can attack the crop from seedling stage through harvest and are referred to as crown-rot diseases. Many of these diseases, however, attack the foliage and fruit and are deposited there by water splash or by physical contact between the fruit and the soil. Early, seedling crown rot can be caused by either *Rhizoctonia solani*, or species of *Pythium*. **Phytophthora crown and fruit rot** (*Phytophthora capsici*) can damage the roots, crown, foliage and fruit. **Southern stem rot** (*Sclerotium rolfsii*) and **Rhizoctonia belly rot** (*Rhizoctonia solani*) can attack fruit that come into contact with soil. **Cottony leak** (*Pythium* spp.) can be severe on fruit during periods of wet weather. **Fusarium wilt** (*Fusarium oxysporum* fsp. *niveum*) can cause problems on seedless due to lack of resistance in seedless cultivars. Fumigation does not help much with Fusarium wilt as roots get infected once they grow out of the treated area.

### Recommended practices in chronological order are as follows:

1. Rotation with non-cucurbit crops reduces potential inoculum of all of the above diseases except Phytophthora crown and fruit rot.
2. Avoid low-lying, wet areas and poorly drained conditions that favor Phytophthora crown and fruit rot.
3. Deep turning with a moldboard plow will help with all diseases except *Phytophthora* and *Pythium*.
4. Fumigation with methyl bromide will suppress all soilborne diseases. Alternatives to methyl bromide that suppress diseases are Telone C-35, K-Pam, Vapam, and chloropicrin. Telone products are nematicidal.
5. Avoid planting seedless to fields with a history of Fusarium wilt.
6. Products containing mefenoxam (Ridomil, UltraFlourish) can suppress losses to *Phytophthora*.
7. Quadris/Amistar applied at vine run can suppress losses to belly rot and southern stem rot.
8. Forum tank-mixed with copper applied intensively at fruit set may protect some fruit from *Phytophthora*.

**Foliar diseases.** There are several foliar diseases of watermelon. **Gummy stem blight** (*Didymella bryoniae*) is the most destructive and common disease affecting watermelons and there is no commercial cultivar resistance to this disease. Gummy stem is best controlled using disease-free seed and transplants and preventive sprays of chlorothalonil and Pristine. **Anthracnose** (*Colletotrichum obiculare*) is another troublesome disease of watermelon that is suppressed by mancozeb, strobilurin fungicides, and Topsin M. **Bacterial fruit blotch** (*Acidovorax avenae* subsp. *citrulli*) is a seedborne bacterial disease that generally requires destruction of transplants, but can be treated in the field with copper materials. **Powdery mildew** (*Sphaerotheca fuliginea*) is a disease that regularly shows up on watermelons at fruit set and can cause severe defoliation. Effective fungicides for powdery mildew are Quintec, Pristine, Nova, and Procure. Some suppression of powdery mildew by strobilurins has been observed. **Downy mildew** (*Pseudoperonospora cubensis*) is rarely a problem on watermelon but can cause severe losses if left unchecked. Mancozeb, Gavel, Previcur Flex, Cabrio, Forum, Ranman, Tanos, chlorothalonil, Ridomil Gold Bravo and Reason can suppress downy mildew. Tank-mix Previcur Flex, Ranman, Forum, and Tanos with chlorothalonil or mancozeb.

### Recommended practices in chronological order are as follows:

1. Use disease-free seed and plants.
2. Avoid fall-planted watermelons as diseases are more severe during that time.
3. Begin chlorothalonil sprays at vine run or disease onset, then rotate to Pristine.
4. Rotate Pristine and chlorothalonil until fruit set, then replace chlorothalonil w/Topsin M + mancozeb.
5. Mancozeb + copper for fruit blotch suppression is best used weekly until fruit develop a waxy covering.

### Spray Schedule for Watermelon

<u>Transplanting/Emergence</u>	<u>Vine run</u>	<u>Blooming</u>	<u>Fruit Set</u>	<u>Harvest</u>
Begin copper and or chlorothalonil	Pristine		end copper for fruit blotch unless ( <i>P.capsici</i> ) replace chlorothalonil w/ Topsin M + mancozeb to prevent rind burn + anthracnose	
			<b>Pristine early if gummy stem pressure is high (maximum applications=4)</b> Nova/Procure here if powdery starts	
			Downy mildew products as needed	