

## Watermelon Spray Guide for 2013

Controlling watermelon diseases involves more than spraying to get the best results.

**1) Crop rotation** is a very important start to controlling gummy stem blight and anthracnose. Growing watermelon, cantaloupe, or cucumber only once every 3 years in a field will minimize problems with these diseases. Never double-crop cucurbits on the same plastic.

**2) Spray early.** The first spray should be put on when vines start to run or no later than when the first blooms (the male ones) open. This is the most important spray of the season! It is easier to prevent disease than to cure it.

**3) Rotate systemic fungicides** to reduce the risk of fungicide resistance. Fungicide resistance is a serious concern that limits which fungicides can be used against gummy stem blight, powdery mildew, and downy mildew on cucurbits.

**4) Choose the right fungicides based on disease pressure.** Watermelon growers should watch for four common diseases and pick fungicides based on which disease will most likely appear.



**Gummy stem blight** often starts on old leaves near the crowns of plants inside the rows. Leaf spots are dark brown and start on leaf edges. Average yield lost to gummy stem blight is 16% if crops are not sprayed or are

sprayed with the wrong fungicides that do not control the disease.

The gummy stem blight fungus in South Carolina and other states is resistant to strobilurins (Group 11 fungicides), Topsin M, and Pristine. Growers should use tebuconazole (Group 3), Inspire Super (Groups 3 + 9), Switch (Groups 9 + 12), or Luna Experience (Groups 3 + 7) to manage gummy stem blight. **Do not make more than three applications of Group 3 or Group 9 fungicides per season to reduce the risk of resistance.** Do not use Luna Sensation (Group 7 + 11) in areas where resistance to Pristine has been found.



**Powdery mildew** appears during dry spells as yellow spots on the top of leaves. White powdery mildew grows on the bottom or top of the leaf. Average yield lost can be 33% in late spring crops not sprayed

for powdery mildew. Cucurbit powdery mildew in some areas has become resistant to fungicides in Groups 1, 3, and 11. The recommended fungicides for powdery mildew are Quintec, Torino, and Switch.



Leaf spots of **anthracnose** are smaller and more angular (pointed) than gummy stem blight spots. Anthracnose also causes 1/2- to 1-inch-long narrow, reddish brown spots on vines. Anthracnose fruit rot starts as round, sunken spots that usually are found on the belly of the fruit. Cabrio is the best fungicide to spray for anthracnose; Switch, Topsin M, and Pristine also control it.



**Bacterial fruit blotch** often appears first as dark, greasy blotches on nearly ripe fruit. Leaf symptoms—if they are present—are small irregular spots. Fruit blotch often can be managed with 3 sprays of copper hydroxide. These can be mixed with

fungicides (except chlorothalonil) and must be applied 2 weeks before female flowers open, at bloom, and 2 weeks after bloom. Applications later than this will be too late to protect early fruit. Additional applications can be made to protect late-season fruit.



**Downy mildew** can affect fall watermelon. It spreads very quickly in unsprayed crops. The protectants chlorothalonil and mancozeb are useful early in the season, but they are not active enough to stop downy mildew once it starts. Cucurbit

downy mildew is resistant to Ridomil Gold and strobilurins (Group 11). Ranman, Presidio, and Previcur Flex are included in the fall spray schedule to prevent downy mildew. If downy mildew is found, switch to Ranman + a protectant rotated with Presidio + a protectant on a weekly schedule.

5). There are two basic types of fungicides: **protectant or contact fungicides** (such as chlorothalonil and mancozeb) and **systemic fungicides** that are absorbed by leaves (most new fungicides). Use a protectant for the first several sprays. Use systemic fungicides mid- to late season, when their ability to get into leaves is useful during rainy periods. The spray schedules below all begin with protectants.

6) After the first protectant spray at vine run, match the **spray schedule** to fit general weather conditions.

- In spring, if it is dry, spray every 10 to 14 days.
- During a wet period, spray every 5 to 7 days. The

chlorothalonil label limits the spray interval to 7 days for watermelon.

- If leaves stay wet for 48 hours, use a systemic fungicide for the next spray.
- In the fall, spray every 7 days, starting at vine run, and shorten the spray interval to 5 days during rainy periods.
- Apply fungicides before a predicted rain rather than after. As long as the fungicide dries on the leaves before rain starts, it will protect plants from new infections.
- Tebuconazole, Inspire Super, and Luna Experience have a 7-day pre-harvest interval (PHI) on watermelon. These fungicides are not recommended during the harvest period.

See the fungicide labels and the current edition of the *Southeastern U.S. Vegetable Crop Handbook*:  
[www.thegrower.com/south-east-vegetable-guide](http://www.thegrower.com/south-east-vegetable-guide).

Spray	Fungicide Spray Schedules for Spring Watermelon Crops*			Spray Schedule for Fall Crops and Downy Mildew
	Focus on Gummy Stem Blight	Focus on Powdery Mildew	Focus on Fruit Blotch	
1 (vine run)	chlorothalonil or Catamaran	chlorothalonil or Catamaran	mancozeb + copper***	chlorothalonil or Catamaran
2	chlorothalonil or Catamaran**	<b>tebuconazole**</b>	mancozeb + copper	<b>tebuconazole</b>
3	<b>tebuconazole</b>	Catamaran	<b>tebuconazole</b> + copper	chlorothalonil + <b>Previcur Flex</b>
4	chlorothalonil or Catamaran	<b>Inspire Super</b>	copper	<b>tebuconazole</b> (or <b>Inspire Super</b> )
5	<b>Inspire Super</b>	mancozeb + Quintec	mancozeb + copper	mancozeb + <b>Presidio</b>
6	mancozeb + <b>Cabrio</b>	<b>Switch</b>	mancozeb + <b>Cabrio</b> + copper	<b>Inspire Super</b> (or <b>Switch</b> )
7	<b>Switch</b> (or <b>tebuconazole</b> )****	mancozeb + <b>Cabrio</b>	<b>Switch</b> (or <b>tebuconazole</b> ) ****	mancozeb + <b>Ranman</b>
8	mancozeb + Quintec	mancozeb + <b>Torino</b>	mancozeb + Quintec	chlorothalonil or Catamaran
Cost	\$161-\$252 per acre	\$260 per acre	\$230 per acre	\$164-\$243 per acre

\*Systemic fungicides are in **bold** type.

\*\*Mancozeb + copper (high rate) may be sprayed instead to protect against bacterial fruit blotch.

\*\*\*Do not mix copper with chlorothalonil. When spraying copper weekly, use the lowest labeled rate. Alternatively, spray copper weeks 1, 3, and 5 at the highest labeled rate.

\*\*\*\*Use Switch if anthracnose is present.

Prepared by **Anthony P. Keinath**, Extension Plant Pathologist, Clemson University, Coastal Research and Education Center, Charleston, SC and **Gilbert A. Miller**, Area Vegetable Specialist, Edisto Research and Education Center, Blackville, SC.

Clemson University Cooperative Extension Service offers its programs to people of all ages, regardless of race, color, sex, religion, national origin, disability, political beliefs, sexual orientation, marital or family status and is an equal opportunity employer.

Clemson University Cooperating with U.S. Department of Agriculture and South Carolina Counties.

Issued in Furtherance of Cooperative Extension Work in Agriculture and Home Economics, Acts of May 8 and June 30, 1914.

Public Service Activities