

Horticulture: Plant Pathology

Watermelon Spray Guide for 2014

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

1) **Crop rotation** is an important start at 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.
- Disk crop debris immediately after harvest.

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 check fields for five common diseases and pick fungicides based on which disease is present or will most likely appear. Crop loss can be great if the wrong fungicide is used. Disease ID is critical!

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% in spring crops.



The gummy stem blight fungus is resistant to strobilurins (FRAC Group 11 fungicides), Topsin M, and Pristine. **Tebuconazole, Luna Experience, Inspire Super, and Switch control gummy stem**

blight. Do not make more than three applications of Group 3 or Group 9 fungicides per season. Rotate to a different fungicide after applying a Group 3 fungicide.

Anthracnose has become more common recently. Leaf spots of anthracnose are smaller and more angular (pointed) than gummy stem blight spots. Anthracnose also causes ½- to 1-inch-long narrow, reddish brown streaks on vines.



Anthracnose fruit rot starts as round, sunken spots that usually are found on the belly of the fruit. Over 90% of fruit can be unmarketable if anthracnose is not controlled. Based on 2013 trials, **Group 11 fungicides, like Cabrio or Quadris Top, and mancozeb are the best sprays for anthracnose.**

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 Luna Experience.**



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-season fruit. Additional applications can be made to protect late-season fruit.



Downy mildew can affect fall and spring 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 Revus. **Previcur Flex, Gavel, and Ranman are recommended against downy mildew.** If downy mildew is found, immediately spray Ranman + a protectant rotated with Gavel on a weekly schedule for the rest of the season.



5) Fungicides work in two basic ways. First, **protectant or contact fungicides** (such as chlorothalonil and mancozeb) protect the outside surface of the leaf, and **systemic fungicides** (most newer fungicides) are taken up into leaves and attack the fungus inside the leaf. All spray schedules below begin with protectants. Use systemic fungicides mid- to late season, when their ability to get into leaves is useful during rainy periods.

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, apply Inspire Super or Switch to protect against gummy stem blight.
- In the fall, spray every 7 days, starting at vine run, and spray every 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.

7) 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 (usually after week 5).

The current edition of the *Southeastern U.S. Vegetable Crop Handbook* with more information is at: www.thegrower.com/south-east-vegetable-guide.

Fungicide Spray Schedules for Spring Watermelon Crops				
Spray	Focus on Gummy Stem Blight and Anthracnose ¹	Focus on Powdery Mildew ²	Focus on Fruit Blotch	Spray Schedule for Fall Crops and Downy Mildew ³
1 (vine run)	chlorothalonil or Catamaran	chlorothalonil or Catamaran	mancozeb + copper***	chlorothalonil or Catamaran
2	chlorothalonil or Catamaran**	chlorothalonil or Catamaran	mancozeb + copper	tebuconazole or Luna Experience
3	tebuconazole	mancozeb + Torino	tebuconazole + copper	chlorothalonil + Previcur Flex
4	chlorothalonil	Luna Experience	mancozeb + copper	mancozeb + Cabrio
5	Inspire Super or tebuconazole	mancozeb + Cabrio	Inspire Super + copper	mancozeb + Ranman
6	mancozeb + Cabrio	mancozeb + Quintec	mancozeb + Cabrio	Quadris Top
7	mancozeb + Quintec or Switch	Switch	Switch	Gavel
8	Quadris Top	mancozeb + Quintec	mancozeb + Quintec	chlorothalonil

¹Fungicides included to control anthracnose are in **bold**. ²Fungicides included to control powdery mildew are in **bold**. ³Fungicides included to control downy mildew are in **bold**.

**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.

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