

# Bell Pepper Fungicide Spray Guide for 2017

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## Major Diseases of Bell Pepper

### Phytophthora blight (*Phytophthora capsici*)



NC State



NC State

### Southern blight (*Sclerotium rolfsii*)



NC State



NC State

### Bacterial spot (*Xanthomonas campestris* pv. *vesicatoria*)



NC State

### Anthracnose (*Colletotrichum* species)



Ohio State

### Pythium damping off (*Pythium* species)



NC State- PDIC

## Spraying Chemicals Effectively

- No single chemical is effective against all foliar diseases
- Alternate products in different fungicide (FRAC) groups
- Avoid overuse of a single product for fungicide resistance management
- Use a preventative spray program instead of relying on the few curative products available

## Use a Volume-based Spray Schedule

*Less product is needed early in the growing season when plants are small*

1. Calibrate your sprayer
2. Determine the maximum spray volume per acre for your sprayer for fully grown plants
3. Determine the volume required to cover an acre of plants when they are young
4. Adjust the acre rate for the volume you are spraying (e.g., if your field requires 100 gal when plants are fully grown and the label says 1 lb. per acre, then you would spray 1 lb. in 100 gallons or 0.33 lb in 30 gallons)  
*rate = (vol when young/vol when fully grown) x amount per acre when fully grown*
5. Apply the entire spray volume

Diseases of bell pepper do not occur consistently each year in NC, therefore, a weekly spray guide is not applicable. Only relative effectiveness of labeled products is provided in this guide. **It is highly recommended to get an accurate diagnosis and recommendations from the NC Plant Disease & Insect Clinic before treating your crop.**

**Table 1. Relative Effectiveness of Various Chemicals for Pepper Disease Control**

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++++ Excellent; +++ Good; ++ Fair; + Poor; - Not effective; NA not labeled; ND no data			Relative Control Rating					
Active Ingredient (Fungicide trade name)	Fungicide group <sup>1</sup>	Preharvest Interval (Days)	Anthracnose of fruit	Bacterial spot	Phytophthora blight (root and crown)	Phytophthora blight (fruit and foliage)	Pythium damping off	Southern blight
azoxystrobin (Quadris)	11	0	+++	-	-	-	-	-
famoxadone + cymoxanil (Tanos)	11 + 27	3	+	-	-	+	-	-
pyraclostrobin (Cabrio)	11	0	++++	-	-	-	-	-
pyraclostrobin + fluxapyroxad (Priaxor)	11 + 7	0	+++	-	-	-	-	-
trifloxystrobin + fluopyram (Luna Sensation)	11 + 7	3	ND	-	-	-	-	-
fixed copper <sup>4</sup>	M	Check Label	+	+++ <sup>R,5</sup>	-	++	-	-
mancozeb (Manzate Pro-Stick, Dithane F45)	M	5	++	+ <sup>5</sup>	+	+	-	-
streptomycin sulfate <sup>6</sup> (Agri-Mycin, Firewall)	25	Not for field use	-	+++ <sup>R</sup>	-	-	-	-
chlorothalonil	M	3	+	-	-	+	-	-
cyazofamid (Ranman)	21	0	-	-	+++	++++	-	-
dimethomorph (Acrobat, Forum)	40	4	-	-	-	+	-	-
dimethomorph + ametoctradin (Zapro)	40 + 45	4	-	-	+++	++++	-	-
fluopicolide (Presidio) <sup>3</sup>	43	2	-	-	+++	++++	-	-
mandipropamid (Revus)	40	1	-	-	+++	++++	-	-
mefenoxam <sup>2</sup> (Ridomil Gold SL)	4	7	-	-	++++ <sup>R</sup>	NA	++++	-
mefenoxam + copper (Ridomil Gold Copper)	4 + M	7	+	++ <sup>R</sup>	NA	++++ <sup>R</sup>	-	-
oxathiapiprolin + chlorothalonil (Orondis Opti)	U15 + M	0	-	-	+++	++++	-	-
oxathiapiprolin + mefenoxam (Orondis Gold 200)	U15 + 4	0	-	-	++++	+++	-	-
oxathiapiprolin + mandipropamid (Orondis Ultra)	U15 + 40	0	-	-	ND	++++	-	-
propamocarb (Previcur Flex)	28	5	-	-	-	-	++++	-
PCNB (Blocker)	14	Only at Planting	-	-	-	-	-	+++
penthiopyrad (Fontelis)	7	0	-	-	-	-	-	+
sulfur (various)	M	0	-	-	-	-	-	-

<sup>1</sup> Fungicides are separated into groups according to their mode of action and risk of resistance development. Numbers distinguish the different fungicide groups; whereas letters refer to M: multi-site activity.

<sup>2</sup> *Phytophthora capsici* becomes resistant to mefenoxam quickly. Ridomil Gold may be applied to pepper at transplanting, but it is NOT registered for control of Phytophthora blight; the foliar blight phase of *P. capsici* cannot be controlled with foliar applications of Ridomil Gold.

<sup>3</sup> Presidio should always be tank mixed with a protectant (i.e. copper) to reduce the risk of fungicide resistance.

<sup>4</sup> Fixed coppers include: Champ, Champion, Cuprofix Ultra, Kocide, MasterCop, Nordox, Nu-Cop.

<sup>5</sup> Copper tank-mixed with mancozeb enhances efficacy against bacterial spot.

<sup>6</sup> Streptomycin may be used on transplants but is NOT registered for field use.

<sup>R</sup> Resistance to this pesticide has been detected in the pathogen population.

**Note:** Recommendations for the use of agricultural chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention of commercial products or services in this publication does not imply endorsement by North Carolina Cooperative Extension nor discrimination against similar products or services not mentioned. Individuals who use agricultural chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage regulations and examine a current product label before applying any chemical. For assistance, contact your county Cooperative Extension agent.