

## Cucurbits

### **Belly Rot (Cucumber)**

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#### **Identification and Life Cycle**

Belly rot is caused by the soilborne fungus *Rhizoctonia solani*, and can be a serious problem on cucumbers grown for pickling. The disease is most damaging to cucumber, but the pathogen can attack all cucurbits to some degree. *R. solani* is a very common soil inhabitant and invades cucumbers in contact with soil. The disease can occur over a range of temperatures (46 to 95°F), but is most damaging near 80°F. Temperature is more important than moisture for disease development, but high humidity and excessive moisture favor infection. The belly rot pathogen can be disseminated within and among fields by moving soil and infected plant parts by equipment and irrigation water. *R. solani* survives in the soil as dormant mycelium and in infested crop debris as dormant sclerotia. It is also a pathogen of many weeds and other crops, but only certain strains of the fungus (AG-4) can attack cucumber.

#### **Plant Response and Damage**

Belly rot symptoms occur on the underside and blossom end of cucumber fruit, producing water-soaked, tan to brown lesions. As the disease progresses lesions become sunken, cratered, irregular in shape, and dried. Infected fruits are firm and a soft rot seldom occurs. Belly rot reduces the quality and marketable yield of cucumbers.

#### **Management Approaches**

##### **Biological Control**

No biological control practices have been developed for belly rot.

##### **Cultural Control**

Practice a three-year or longer crop rotation between cucurbit crops. The belly rot pathogen can attack many weeds; thorough weed control is essential for crop rotation to be most effective. Crop debris should be promptly and thoroughly incorporated after harvest to hasten the breakdown of the pathogen's dormant resting structures. Belly rot

can be controlled effectively by not letting fruit touch the soil. Plastic mulches are often effective in preventing belly rot in semi-arid and arid production regions.

## **Chemical Control**

Soil-applied fungicides provide inconsistent disease control. Soil fumigation can be effective but is generally not economical in the High Plains.

### *Product List for Belly Rot:*

<b>Pesticide</b>	<b>Product per acre</b>	<b>Application Frequency (days)</b>	<b>Remarks</b>
<b>Azoxystrobin</b>			
Quadris	11.0-15.4 fl oz	5-14 days	Maximum of 4 applications or 2.88 quarts per season; Alternate Quadris with fungicides with different modes of action; 1 day PHI
<b>Chlorothalonil</b>			
Bravo 720, Ensign	1.5-2 pt	7 days	Do not graze or feed debris to livestock; 7 day PHI
Bravo Ultrex	1.4-1.8 lb	7-10 days	Maximum of 16.5 pounds per season; 0 day PHI
Bravo WeatherStik	1.5-2.0 pt	7-10 days	Maximum of 20 pints per season; 0 day PHI
Echo 720	1.5-2.0 pt	7-10 days	Maximum of 2.5 gallons per season; 7 day PHI
Echo 90DF	1.2-1.6 lb	7-10 days	Maximum of 16.67 pounds per season; 7 day PHI
Echo Zn	2.2 to 2.8 pt	7-10 days	Maximum of 3.6 gallons per season; 7 day PHI
<b>Thiophanate Methyl</b>			
Topsin M 70WP	0.5 lb	7-14 days	Maximum of 3 lb per season; Alternate fungicide sprays or tank-mix with fungicides with a different mode of action; 1 day PHI
Topsin 4.5 FL	10 fl oz	7 days	Maximum of 60 fl oz per season; Alternate fungicide sprays or tank-mix with fungicides with a different mode of action; 1 day PHI

Topsin WSB	0.5 lb	7-14 days	Maximum of 3 lb per season; Alternate fungicide sprays or tank-mix with fungicides with a different mode of action; 1 day PHI
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Categories: Cucurbits, Disease, Belly Rot, Cucumber, Melon, Pumpkin, Squash, Zucchini

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