

# Vegetable Diseases

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## Gummy Stem Blight of Muskmelon and Watermelon

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**G**ummy stem blight (also called black rot) is one of the most serious foliar diseases of muskmelon and watermelon in Indiana. Gummy stem blight causes lesions on stems and leaves. Fruit is rarely affected, but loss of foliage may affect yield and fruit quality. This publication describes the cycle and symptoms of gummy stem blight and offers management recommendations.

### Disease Cycle and Symptoms

The fungus that causes gummy stem blight (*Didymella bryoniae*), favors warm, rainy weather. The fungus requires rain to disperse, and wet leaves provide favorable conditions where new infections can occur. The spores of the gummy stem blight fungus survive on crop residue.

The earliest symptom of gummy stem blight is often an indefinite shaped lesion on the leaf or stem (Figure 1). Often, these lesions are first observed on the vines or on leaf parts that are shaded or that accumulate moisture for long periods.



**Figure 1.** A watermelon leaf with several gummy stem blight lesions. Note that the lesions may have minute ridges as a result of its growth over time.

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**Figure 2.** Gummy stem blight lesions on a watermelon leaf. On watermelon, the lesions tend to be chocolate brown.



**Figure 3.** Gummy stem blight lesions on a muskmelon leaf. Note the chlorosis surrounding the lesion. On muskmelon, the lesions are a lighter brown than those found on watermelon.

Severe infections may rapidly cover entire leaves with lesions. Lesions on watermelon leaves tend to be a chocolate brown (Figure 2), while lesions on muskmelon are a lighter brown (Figure 3). The lesions may be surrounded by areas of chlorosis (yellow tissue). The lesions also may have minute ridges that appear as a result of the lesion's growth over time.

Gummy stem blight may become established in the transplant greenhouse from contaminated seed or transplants, or from poor sanitation. Growers should learn to recognize gummy stem blight symptoms on seedlings. These symptoms



**Figure 4.** A water-soaked stem (hypocotyl) of a watermelon transplant with gummy stem blight.



**Figure 5.** A muskmelon seedling with dark fungal structures (pycnidia) characteristic of gummy stem blight.

include watermelon transplants with water-soaked stems (hypocotyls) (Figure 4). In the final stage of infection, the plant tissue may appear woody. Closely inspecting the lesions at this time with a 10x hand lens may reveal the dark fungal structures (pycnidia) that are characteristic of this disease (Figure 5).

## Disease Management and Timeline

Because the fungus survives on crop residue, any cultural practice that reduces crop residue will help to manage this disease. Preventative applications of contact or systemic fungicides are typically required to successfully manage the disease.

The table below provides a timeline for gummy stem blight management.

| Timing      | Management Measures   |
|-------------|---|
| Fall/Winter | Fall tillage and crop rotations of at least three years without a cucurbit crop will help reduce crop residue and help manage gummy stem blight.  |
| Greenhouse  | Gummy stem blight may be seedborne. Upon delivery, growers should inspect transplant seedlings for disease. Regularly inspect greenhouses for gummy stem blight symptoms. Sanitize properly. Poor sanitation can lead to the survival of the gummy stem blight fungus from year to year. Do not apply fungicides in the greenhouse unless labeled specifically for that use.  |
| Vine Touch  | At or before the time when vines begin to touch within a row, fungicides should be applied in a preventative manner.<br>Contact fungicides effective against gummy stem blight include chlorothalonil (Bravo®, Echo®, Equus®) and mancozeb (Dithane®, Manzate®, Penncozeb®).<br>Effective systemic strobilurin fungicide formulations include Amistar®, Cabrio®, Pristine®, and Quadris®.<br>Apply contact or systemic fungicides at 7- to 14-day intervals, or according to MELCAST recommendations (see Purdue Extension publication BP-67, <i>Foliar Disease Control Using MELCAST</i> , <a href="http://www.ces.purdue.edu/extmedia/BP/BP-67.pdf">www.ces.purdue.edu/extmedia/BP/BP-67.pdf</a> ).<br>Working in watermelon fields that are wet from rain or dew may spread gummy stem blight. |
| Harvest     | Fungicide applications are not necessary within two to three weeks of the final harvest. Do not save seed from fields where gummy stem blight has been observed.  |

## Find Out More

For more information about treating gummy stem blight, see Purdue Extension publication ID-56, the *Midwest Vegetable Production Guide for Commercial Growers*, available at [www.btny.purdue.edu/pubs/ID/ID-56/](http://www.btny.purdue.edu/pubs/ID/ID-56/) or by visiting the Purdue Extension Education Store at [www.ces.purdue.edu/new](http://www.ces.purdue.edu/new).

