



# **PLANT DISEASE AND INSECT ADVISORY**

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## **Gummy Stem Blight Outbreak in Watermelons** **John Damicone, Extension Plant Pathologist**

Add yet another foliar disease to be contended with in Oklahoma watermelons. Anthracnose has been the primary foliar disease of watermelons in Oklahoma and spray programs have been developed and recommended for its control. Downy mildew and powdery mildew have also been problems, but do not occur every year. I recently visited some watermelon fields in western Oklahoma that had been sprayed for anthracnose, but were going down with foliar disease (Fig. 1). The fields had received several applications of fungicide on a preventive schedule, and most recently had been treated with mancozeb (eg. Dithane) and pyraclostrobin (Cabrio). Gummy stem blight was causing severe defoliation in a field being harvested, and the disease was also identified in two other fields, one where harvest was complete and another in younger field. The identification of gummy stem blight may dictate that fungicide strategies must be changed in the future to maintain effective foliar disease control in watermelons.

Gummy stem blight gets its name from the bleeding stem cankers it causes on cantaloupe. On watermelon it causes primarily leaf spots and stem lesions. Symptoms of gummy stem blight on the leaves are dark brown spots (Fig. 2), similar in appearance to anthracnose (Fig. 3) and downy mildew (Fig. 4). However, some of the leaf spots of gummy stem blight leaf spots are larger than those of anthracnose and tend to develop along the edges of leaves (Fig. 5). The disease also attacks stems and petioles where it produces elongated cankers much like anthracnose. However, the fruiting bodies of the gummy stem blight fungus are easily observed with the naked eye (Fig. 6). The pathogen is best confirmed under a microscope by the presence of the characteristic fruiting bodies (pycnidia) that exude tendrils of spores (Fig. 7). Unfortunately, once stem lesions develop, the disease is probably too far advanced for effective control to be achieved. Fortunately, the fruit lesions that have been so troublesome in the marketing of watermelons caused by anthracnose do not occur with gummy stem blight.

Like anthracnose, gummy stem blight is favored by warm rainy weather. The production area where the disease was found received locally heavy rains during August. The fungus is known to be seed-borne and may have been introduced into the area on infected seeds or transplants. The fungus over-winters in fields in diseased watermelon vines. Therefore, it could become a recurring problem.

Gummy stem blight is the primary foliar disease of watermelon in the southeastern U.S. where it has been difficult to control. A problem is that the fungus that causes gummy stem blight (*Didimella bryoniae*) has developed resistance to the strobilurin fungicides azoxystrobin (Quadris) and pyraclostrobin (Cabrio). Fungicide programs in the southeast are based on the use of chlorothalonil (eg. Bravo), which is alternated with Pristine, a premixture of pyraclostrobin and boscalid. Pristine had been found to be highly effective on gummy stem blight. If gummy

stem blight becomes a persistent problem in Oklahoma, use of Pristine will be necessary to maintain effective foliar disease control.

The addition of another foliar disease of watermelon with specific fungicide control requirements will make disease identification critical. Because watermelon diseases are difficult to distinguish with the naked eye, particularly in their early stages (Figs. 2-4), regular submission of samples to the OSU Plant Disease and Insect Diagnostic Laboratory is encouraged.



**Fig. 1.** Defoliation from gummy stem blight.



**Fig. 2.** Gummy stem blight on leaves.



**Fig. 3.** Anthracnose on leaves.



**Fig. 4.** Downy mildew.



**Fig. 5.** Large spreading lesions along the leaf margins caused by gummy stem blight.



**Fig. 6.** Fruiting bodies of the gummy stem blight fungus on leaf petioles.



**Fig. 7.** Spores released from fruiting body (pycnidium) of the gummy stem blight fungus under microscope.

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