

BACTERIAL SPOT OF TOMATO AND PEPPER

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Dan Egel - Bacterial spot may cause symptoms on all above ground portions of affected plants. On leaves, the lesions may begin as small water soaked areas and turn into brown lesions with a yellow halo (see Figures 1 and 2). Lesions on stems often lack a yellow halo. The most important lesions may be those on fruit. While the lesions are variable, on tomato fruit are usually scabby in appearance. Lesions on peppers are often raised.



Figure 1: Bacterial spot lesions on a tomato leaf. (Photo by Dan Egel)



Figure 2: Bacterial spot lesions on a pepper leaf. (Photo by Dan Egel)

Bacterial spot on both tomato and pepper are favored by high temperatures and lots of rain. While the temperatures have been a bit cool lately, the disease may have been introduced into the field from greenhouse grown transplants. The causal bacterium survives on crop debris and may be seed borne. Volunteer tomatoes and peppers may also carry the disease.

Management guidelines for bacterial spot:

1. Fixed copper-growers with strains of the bacterial spot pathogen resistant to copper may have to increase the frequency of copper applications to overcome the level of resistance in bacteria. This is especially true during periods of warm, rainy weather.
2. The use of mancozeb products (e.g., Dithane®, Manzate®, Penncozeb®) to accompany applications of fixed copper may allow more copper to become available on the leaf surface, thus overcoming the level of copper resistance that exists. Mancozeb products are not labeled on peppers. The product Actigard® may help to lessen the symptoms of bacterial spot. Actigard® is not labeled on bell peppers. Follow the Actigard® label closely to avoid yield loss due to the application of this product.
3. Products with the active ingredient streptomycin (e.g., Agri-mycin®, Firewall®) are not affected by copper resistance. Applications of this product in the transplant greenhouse at least once will help to manage bacterial spot. Streptomycin products are not labeled for use in the field.
4. Serenade® is a biological product labeled for use on tomatoes and peppers for bacterial spot. Some research suggests that this product, used with fixed copper products, will help to manage bacterial spot. Serenade® is unaffected by copper resistance.
5. The use of a virus disease of the bacterial spot strains is another option. AgriPhage® is a product that uses a virus disease of bacteria to kill the strains that cause bacterial spot. The use of such a

product requires one to send plant samples to the manufacturer so that they can customize the product for your field. Contact me for more information about AgriPhage®.

6. Some pepper cultivars have resistance to some combination of races 1 through 5 of the bacterial spot pathogen. The more races the cultivar is resistant to, the better the chance of beating bacterial spot. However, any resistance may be overcome. In 2010, bacterial spot race 6 was found on peppers in central Indiana. This race would have overcome any known resistance in commercial cultivars. While all tomato varieties are susceptible to bacterial spot, growers may notice that some varieties are more susceptible than others.
7. Always read and follow pesticide labels.

Bacterial spot is an important disease of peppers and tomatoes. Accurate diagnosis and quick action will help to manage this disease.