

Frequent heavy rains = lots of vegetable disease problems

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I do not have to tell you that these frequent and heavy rains we have been having over the last 2-3 weeks have really increased the amount of foliar and at times soil diseases in our vegetable crops. In cucurbits foliar diseases such as *Alternaria*, gummy stem blight and an odd one *Cercospora* (fig 1) all have been found causing moderate to severe defoliation in some fields that are heavy with fruit. The large fruit load puts a strain on the plant and when conditions are right-wet weather and warm temperatures-the fungal and bacterial diseases will flourish. *Phytophthora sp* in soils has also been a problem in some cucurbit fields as this organism moves best by swimming in water and a very wet or temporarily flooded field is just what it needs to move around and infect plants causing a 'melt down' of the plant.

Even though a grower has been diligent about applying their foliar protectant sprays, under the kinds of weather conditions we have had we are still going to see plants become infected with foliar pathogens. One of these problem pathogens is *Xanthomonas campestris* pv. *vesicatoria*, which is the causal agent of bacterial spot in tomato (fig 2). However it is not that straight forward as there are at least 4 different species and four different races of this pest that can cause bacterial leaf spot. Preliminary work at North Carolina State University has shown that their bacterial leaf spot in many of their tomato fields has resistance to copper sprays. Based on what I have seen in some of our tomato fields I am sure we have similar problems. However, even if your bacterial spot is not resistant it still is probably going to spread and get worse in fields where it was already present with all the frequent rains that we have had. I know you have heard Extension say this before and repeatedly, but we need to be sure we follow good sanitation and cultural practices in our vegetable fields, which will allow us to better combat disease problems.

Some cultural controls include: Using pathogen-free seed and disease-free transplants. Hot water treatment can be used to kill bacteria on and in seed and rotating with a non-host crop. Good sanitation practices include cleaning all equipment used in diseased fields, sanitation of equipment can be done safely and effectively using a commercial sanitizer. Keep fields free from volunteers, weeds, and cull piles. Avoid working in fields when bacterial diseases are present and the fields are wet. Bury or remove crop debris at the end of the season.

Fig 1 *Alternaria* (larger tan/brown spots) and *Cercospora* leaf spots (arrows) on cantaloupe leaves and Gummy stem blight on a watermelon leaf (right)

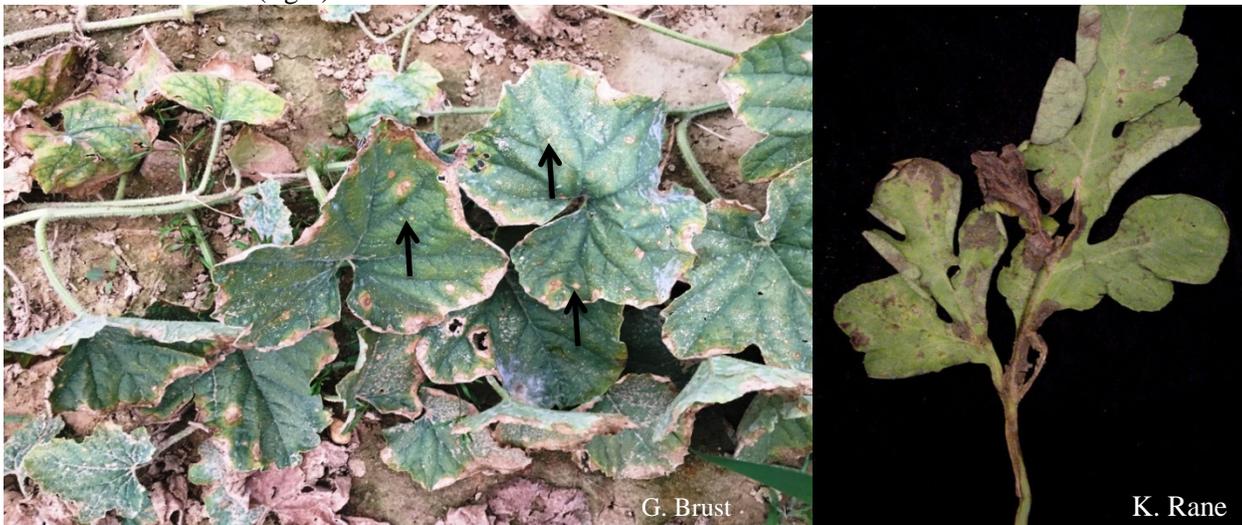


Fig. 2 Bacterial spot on tomato leaf



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