**Bacterial Diseases of Crucifers**

The Economic Threshold Level (ETL) for crucifers also known as brassica leafy greens is low, as growers depend on the foliar health & quality of these crops for wholesale. Plant pathogenic bacteria threaten the foliar health of these leafy greens and have become a significant limitation of production in recent years.

**Common Bacterial Diseases & Casual Agents**

Bacterial blight, *Pseudomonas cannabina* pv. *alisalensis*

Leaf spot or pepper spot*, Pseudomonas syringae* pv. *maculicola*

Black rot, *Xanthomonas campestris* pv. *campestris*

These pathogens can enter the host plants through insect or mechanical wounds and natural leaf openings, often reaching plants through irrigation or splashing rain. The pathogens survive in the soil and infected plant debris, so plantings in fallow fields are at risk of re-infection.

**Hosts**

These bacterial pathogens have a combined wide range of brassica hosts (arugula, broccoli, radish, turnip, cabbages, collards, mustards, bok choy, kale, cauliflower, etc.), but individually may not be pathogenic on each of these hosts. Examples of disease:

A green leaf with black spots on it

Description automatically generatedA close-up of a leaf

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Bacterial blight, *(P. cannabina* pv*. alisalensis)* on arugula can be identified by small chlorotic-bordered lesions that spread quickly.

Pepper Spot, (*P. syringae* pv*. maculicola)* looks as though somebody sprinkled table-pepper on leaves.

Black rot (*X. campestris* pv*. campestris)* is recognized by a V-shaped lesion originating at the leaf margin.

**Management Strategies**

Crop rotations with non-hosts can reduce holdover inoculum from an infected crop to the next. Plant spacing may help reduce humidity and spread of the pathogen. The pathogens are seedborne and planting high quality seed is recommended.

**Our Goal**

There has been significant loss of arugula due to bacterial blight in the northeast in recent years. The **N**orth**E**ast **A**rugula **T**eam (NEAT) was formed in response to grower inquiries raising concerns over bacterial diseases on their brassica leafy greens. Our goal is to identify bacterial pathogens causing diseases on arugula and other brassica leafy greens, design effective management strategies and spread the information to growers.

**Our Team**

NEAT is a collaborative effort between The Pennsylvania State University (Carolee Bull & Cameron Cedeno), Cornell University (Elisabeth Hodgdon), University of New Hampshire (Rebecca Sideman), and University of Vermont (Ann Hazelrigg). NEAT is advised by a committee of farmers, developers, and plant breeders. NEAT receives funding through the NE SARE Project LNE23-463.

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NEAT NE SARE page: <https://projects.sare.org/sare_project/lne23-463/>

**Sending Samples/Scheduling a Farm Visit**

If you’re interested in having your crops surveyed and pathogens identified, please contact Cameron Cedeno by email [cjc315@psu.edu](mailto:cjc315@psu.edu), or phone 724-732-2238.