

Huston-Brumbaugh Nature Center

Environmental Science Outreach STEM Program

Tuesday, June 23

Plants Get Sick Too!

The Irish Potato Famine (1845-1852)



In the mid-1800s, Ireland experienced a devastating famine when a plant disease called late blight, caused by the pathogen *Phytophthora infestans*, destroyed potato crops across the country. Because many families relied on potatoes as their main food

source, the crop failure led to widespread hunger, disease, and poverty. More than one million people died and another million emigrated from Ireland. Scientists later identified the specific strain responsible for the outbreak, helping us better understand plant diseases and how to develop crops that are more resistant to them



Potato Disease Investigation



Students explored how growing practices and plant diseases can affect potato crop. They compared organically grown potatoes with potatoes grown using pesticides and herbicides, looking for signs of *Rhizoctonia solani*, a soilborne pathogen that causes black scurf and

can reduce crop health and yield. This activity helped students understand the challenges farmers face in managing plant diseases and producing healthy food crops.



Plant Disease

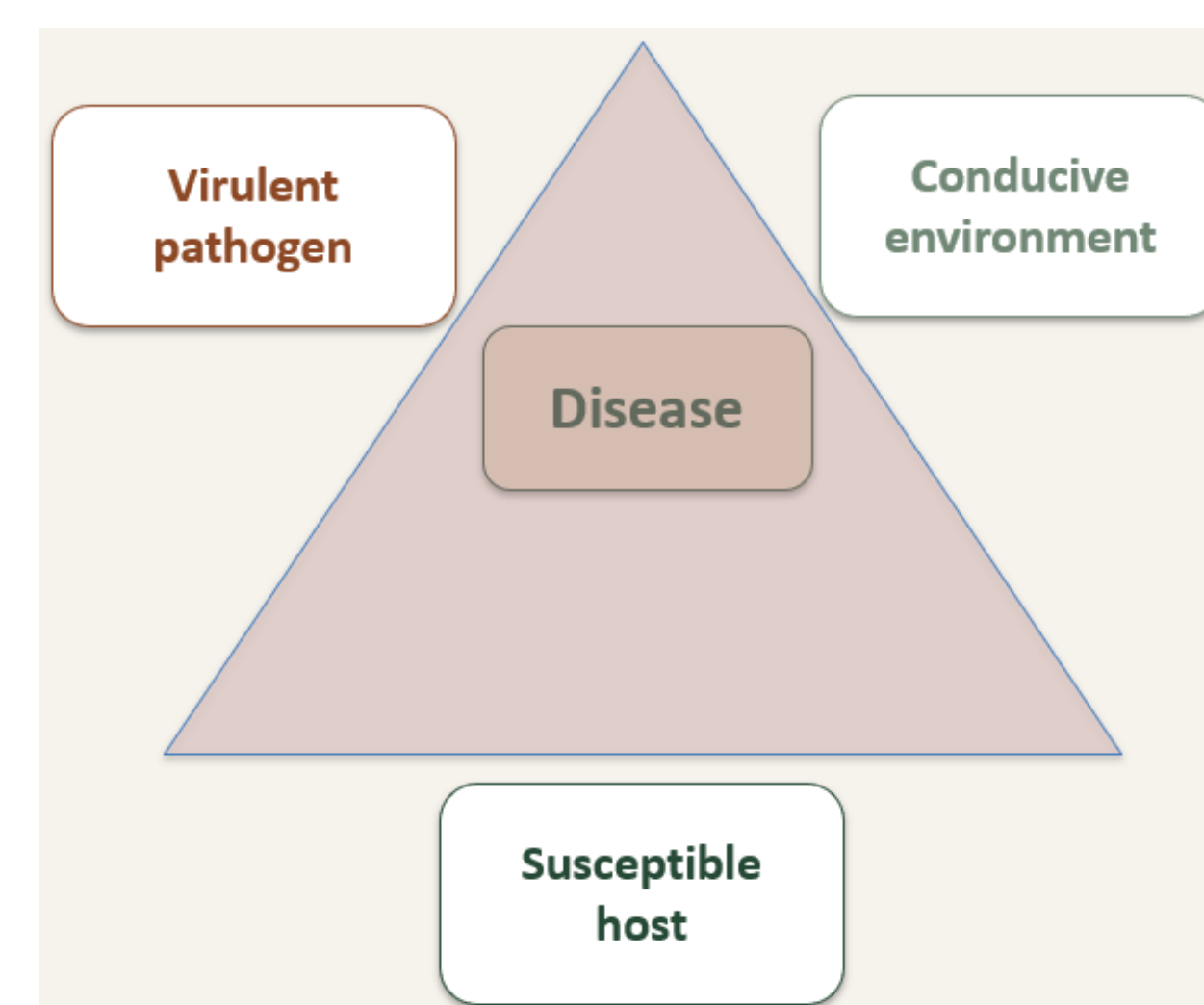


Figure 1: The Disease Triangle. When all three sides are present, disease can happen.

Students learned the difference between plant injury and plant disease and explored the Disease Triangle (Figure 1), which explains that disease occurs only when a susceptible host, pathogen, and favorable conditions are present. Using collected stems, leaves, and other plant samples, students examined signs and symptoms of diseases in the lab and practiced identifying evidence of plants pathogens before searching for examples in the woods.



Beech Leaf Disease

Beech Leaf Disease (BLD) is an emerging forest disease that affects American beech trees and is caused by a microscopic nematode that feeds on leaf tissue (Image 1). First identified in Ohio in 2012, the disease causes dark banding between leaf veins, reduced leaf growth, and eventual decline of infected trees (Image 2).

At the Huston-Brumbaugh Nature Center, students learned how scientists monitor BLD, recognize its symptoms, and study its impact on local forests. Through field observations and discussions with researchers, students explored how plant diseases can spread through natural ecosystems and why protecting healthy forests is important for biodiversity and ecosystem health.

Students learned to identify the symptoms of BLD by examining infected leaves in the field and discussing how a microscopic nematode can affect tree health. Through observations at the Huston-Brumbaugh Nature Center and conversations with researchers, they explored how scientists monitor emerging forest diseases, study their spread, and evaluate their impact on local ecosystems. This activity highlighted the importance of forest health and the role of plant pathology in protecting native tree species.



Image 1: BLD Nematode



Image 2: BLD produces dark banding in leaves.



References & Acknowledgements

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*Poster created by Amy Miller. Text assistance provided by Microsoft Copilot (AI); content reviewed and approved by program staff.

