

Easter Filbert Blight: Potential Impact and Strategies for Your Orchard

Margaret Townsend, NewTown Truffiere and NATGA President

Easter Filbert Blight (EFB), caused by the fungus *Anisogramma anomala*, poses a significant threat to hazelnut orchards, particularly on the East Coast. Orchards planted with *Corylus avellana*, a very common host tree for truffles, are at significant risk.

While the Gasaway gene was initially thought to provide substantial resistance in the European species, recent observations indicate that this resistance is breaking down. Growers with *Corylus avellana* on the East Coast should be aware that they are susceptible to significant to full dieback over 3 to 5 years from infection. Other species, such as *Corylus americana*, are not susceptible to EFB. This highlights the urgent need for updated strategies and vigilant monitoring to protect truffle production.

What is Easter Filbert Blight (EFB)?

- A fungal disease caused by *Anisogramma anomala*, which is prevalent on the East Coast.
- Carried by the wild American Hazelnut (*Corylus americana*), which does not succumb to the disease.
- Primarily affects the European species of hazelnut trees (*Corylus avellana*), including cultivars like Jefferson, Yamhill, and McDonald, which are widely used in truffle production.

Transmission

- **Spore Dispersal:** The fungus produces spores that are spread by wind and rain, allowing the disease to travel short and long distances.
- **Human Activity:** The disease can be transmitted via contaminated hands, clothing, farm implements, and by transporting infected wood.
- **Infection Sites:** Unlike many other fungi, *Anisogramma anomala* infects through immature tissue on actively growing shoots (bud break in the spring) rather than through wounds.

Resistance

- **The Gasaway Gene:**
 - First identified in the 'Gasaway' hazelnut cultivar, which exhibited resistance to EFB in the Pacific Northwest.
 - Extensively used in breeding programs, particularly at Oregon State University, to develop new EFB-resistant cultivars such as Jefferson, Yamhill, Dorris, Wepster, and McDonald.
 - Originally thought to provide resistance in about 75% of the trees.
- **Factors Associated with Breakdown of Resistance:**
 - **Pathogen Variability:** New strains have emerged that overcome the resistance provided by the Gasaway gene.
 - **Environmental Conditions:** Different environmental conditions, such as those on the East Coast compared to the Pacific Northwest, with high humidity and rainfall, can favor the pathogen and challenge the resistance mechanisms.
 - **Monoculture Planting:** Planting large areas with a single resistant cultivar can increase the selection pressure on the pathogen to evolve and overcome the resistance.

Management Strategies:

- **Smaller Orchards:** Pruning, burning affected branches, and fungicides as part of an integrated disease management plan *may* be possible.
- **Larger Orchards:** May need to implement a program of annual tree removal, burning and replacement.
- **Host Diversification:** Now is the time to consider diversifying host plants and encouraging seedling providers to offer native trees such as multiple oak species, chestnut, linden, etc.

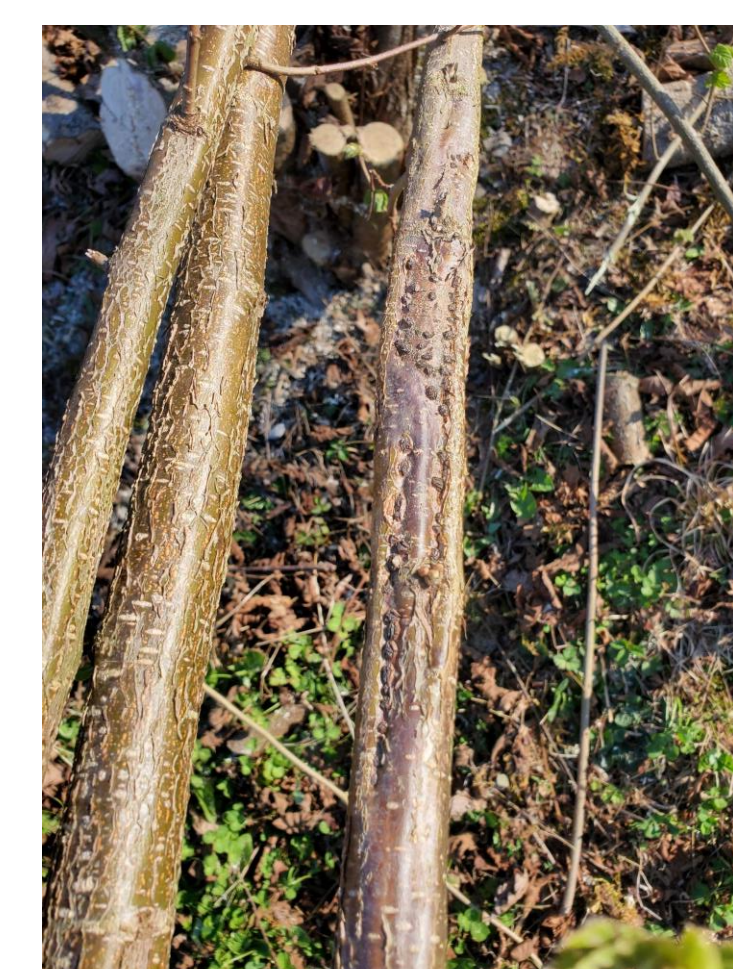
Research and Support:

- Ongoing research to develop EFB resistant hazelnut varieties such as The Beast, Monmouth, Hunterdon, Somerset, and Raritan, all coming out of Rutgers University, but not yet widely available.
- Extension services and support for affected growers

• **NATGA: Join our Webinar on November 19th to hear from experts about the latest research and management strategies for EFB.**

Symptoms

- Cankers on branches and stems.
- Dieback of branches.
- Reduced nut production and quality.



JOIN OUR EXPERTS TO LEARN MORE

Webinar - Tuesday, Nov 19th at 1:00 pm EST/10:00 am PST



Jay W. Pscheidt received his Ph.D. in Plant Pathology from the University of Wisconsin-Madison in 1985. Since 1988 he has been a professor at Oregon State University as an Extension Plant Pathology Specialist. His principal duties are to lead a statewide extension program related to the diagnosis and management of diseases of all fruit, nut, and ornamental/nursery crops. He is also co-editor of regional publication The Pacific Northwest Plant Disease Management Handbook.



Dr. Jeanine Davis is an associate professor and extension specialist in the Department of Horticultural Science at NC State University. For over 35 years, she has conducted field research on medicinal herbs, forest farming, new and emerging crops (e.g., hops, truffles, hemp, and ginseng), vegetables, and organic agriculture. She has maintained two small demonstration orchards at a research station in Waynesville, NC since 2010 and collaborated several truffle research projects. She is the lead author of the book "Growing and Marketing Ginseng, Goldenseal and Other Woodland Medicinals".



Davis M. Upchurch is a Ph.D. candidate in Plant Breeding at Cornell University in conjunction with the USDA-ARS Plant Genetic Resources Unit. Principle work is on the genetic basis of viral resistance, viral biology, and scion-rootstock interactions in Apple rootstocks. He is part owner of a large, productive truffiere in N.C. along with his parents. His orchard includes Hazels in its plantings, with 5 *Corylus* sp. and 6 cultivars mycorrhized with 3 different truffle species.