



# Hazelnut 'Gasaway' - EFB Resistance

USDA-Agricultural Research Service & Oregon State University, USA

'Gasaway' is a pollinizer hazelnut (*Corylus avellana*; PI 557042) from Washington. In 1975 it was discovered to be free of eastern filbert blight (EFB) while cultivars in the same orchard were dying from the disease. Its use in crosses with elite EFB-susceptible selections resulted in new EFB-resistant cultivars that saved the Oregon hazelnut industry. Since 2005, 7 cultivars and 12 pollinizers with the Gasaway source of resistance have been released, allowing production in Oregon to triple. This important genetic material is maintained by the USDA National Plant Germplasm System.



Photo by Jane Olson, GRIN-Global

'Gasaway' nut clusters on tree.

## PROJECT GOALS

- ✓ Produce cultivars resistant to the eastern filbert blight (EFB) fungal pathogen
- ✓ Support the hazelnut industry in Oregon

## Problems Addressed

The fungal pathogen *Anisogramma anomala* that causes eastern filbert blight (EFB) kills susceptible hazelnut trees. In the 1960s, it was introduced from its native range in the eastern U.S. to Washington State. By 1986, it had spread to Oregon's Willamette Valley where 99% of commercial hazelnuts in the U.S. are produced. The fungus is now present throughout the valley. At the time of introduction, commercial hazelnuts in the Northwest were very susceptible to EFB. Breeding new resistant cultivars was the most sustainable and economic solution for protecting the hazelnut industry.

## Solutions Developed

In 1975, Gasaway was found to be resistant to EFB and was therefore used in breeding programs to produce improved cultivars. Since genetic studies determined a dominant allele at a single locus controls that resistance, Oregon State University was able to use DNA testing to identify seedlings that carry resistance from the Gasaway source. Only resistant seedlings were planted and evaluated further for desirable tree and nut characteristics for release as cultivars or pollinizers. As a result, this program has released more than 20 EFB-resistant lines, energizing the Oregon hazelnut industry.



Written by: N. Bassil, S. Mehlenbacher, K. Chen (editor)

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