

# Hybrid Hazelnut Consortium

Creating disease-resistant, climatically adapted hybrid hazelnuts as a sustainable crop for U.S. growers.



## What is the Hybrid Hazelnut Consortium?

The Hybrid Hazelnut Consortium is a group of scientists from Rutgers University, Oregon State University, Arbor Day Foundation and the University of Nebraska-Lincoln working together to develop disease-resistant, climatically adapted hybrid hazelnuts. Combined, the Consortium partners have more than 70 years of hazelnut research. Their partnership leverages the intellectual resources and prior research investments of the four institutions.

## Are hazelnuts grown commercially in the U.S.?

Yes, the U.S. produces about 3% of the world commercial hazelnut crop. Most of the U.S. crop is grown in Oregon's Willamette Valley (below left: area shown in orange). The valley's temperate climate is similar to Turkey and Italy where most of the world's hazelnuts are grown.



## Why isn't U.S. hazelnut production more widespread?

Two factors currently limit wider production of hazelnuts in the U.S.—the inability of hazelnut plants to survive in harsh weather and susceptibility to eastern filbert blight (EFB), a fungal disease. Overcoming these barriers would expand the growing region for hazelnuts to include most of the U.S. (above right).

## Can these two barriers be overcome?

Yes, native wild American hazelnuts (*Corylus americana*) are resistant to EFB and can survive in cold weather, but they produce tiny, thick-shelled nuts with little commercial value. The European hazelnut (*Corylus avellana*) is grown commercially and produces large, high-quality nuts but is susceptible to eastern filbert blight and is not cold hardy. The Hybrid Hazelnut Consortium is working to develop a hybrid hazelnut that combines the wide adaptation, cold hardiness and EFB resistance of American hazelnuts with the high nut quality of European hazelnuts.



## Why will hybrid hazelnuts be a good option for growers?

Hazelnuts are a perennial crop requiring few inputs after becoming established. They require less water than annual crops, are drought resistant and can be grown on sloping terrain and in marginal soils. Consortium research has shown that hazelnuts can be a high-yielding, dry-land crop.

Hazelnut shrubs will be suitable for integrating into farms as orchards or income-producing windbreaks or snow fences. Planted near streams or rivers, they will reduce erosion, store water and trap soil, chemicals and nutrients while producing extra income

for landowners. They also may provide revenue-generating capability for small, hard-to-farm parcels of land, such as corners created by pivot irrigation systems or areas where the topography is unsuited for cultivated crops.

## How are hazelnuts used?

A nutritious, high-protein, cholesterol-free food, hazelnuts are used worldwide as a premium ingredient in confections, pastries, ice cream, cookies, breads and savory dishes. Nuts, in general, are very healthy foods, and hazelnuts rank at or near the top of many important health categories. Hazelnuts are a rich source of vitamin E, folate, B vitamins and arginine. They are one of the best nut sources of heart-healthy mono- and poly-unsaturated fats, and flavorful hazelnut oil is high in omega-9 and omega-6 fatty acids, making it a healthy cooking option. High concentrations of phenolic compounds found in hazelnut shells could serve as a source of natural antioxidants for food applications.

## Are there potential new markets for hazelnuts?

Yes, opportunities exist to expand into new markets with hybrid hazelnuts, especially as a biodiesel or other oleochemical component and as animal feed. Hazelnuts produce nearly twice the amount of oil per acre as soybeans, and the oil's physical and chemical properties make it substantially superior to soybean oil for biodiesel production. The oil has a unique fatty acid composition, thermal stability and low temperature properties that should increase its value over soybean oil for a number of applications.

A largely unexplored, yet promising, opportunity also exists with the byproduct created when oil is extracted from hazelnuts. A high-quality protein meal remains after extraction that can be used for livestock feed.

## Where can I get more information?

The Hybrid Hazelnut Consortium's website, [arborday.org/programs/hazelnuts/consortium](http://arborday.org/programs/hazelnuts/consortium), has additional information about the Consortium's work and the huge potential for creating thousands of jobs and millions of dollars with development of a disease-resistant, climatically adapted hybrid hazelnut.

At the website you'll find newsletters, fact sheets and information about how you can contribute to the project by collecting wild American hazelnuts. Also check out our blog at [hybridhazelnutconsortium.blogspot.com](http://hybridhazelnutconsortium.blogspot.com) and any of the partner websites:

- **Rutgers**, [aesop.rutgers.edu/~plantbiopath/faculty/molnar/molnar.html](http://aesop.rutgers.edu/~plantbiopath/faculty/molnar/molnar.html)
- **Oregon State**, <http://horticulture.oregonstate.edu/content/shawn-mehlenbacher>
- **Arbor Day Foundation**, [arborday.org](http://arborday.org)
- **Nebraska Forest Service** at the University of Nebraska-Lincoln, [nfs.unl.edu](http://nfs.unl.edu).