Hazelnut Production

Corylus avellana

Characteristics and Adaptability

Hazelnuts, also known as filberts, consist of several species of shrubs and trees in the Corylus family. The beaked hazelnut (C. cornuta) is native throughout Atlantic Canada but produces a very small nut not suited to commercial production. The European hazelnut (C. avellana) is the only hazel grown commercially. Turkey is the major world producer with some production occurring in North America, notably in Oregon and also in British Columbia. Hazelnuts can be grown in hardiness zones 5+.

Propagation, Cultivars and Pollination, and Tree Spacing

Hazelnut seedlings will produce orchards with varying levels of resistance to Eastern filbert blight and non-uniform nut quality and maturity. Selection of appropriate cultivars will improve consistency of orchard performance and reduce disease pressure. Hazelnut cultivars that are likely suitable for Atlantic Canada are: Geneva, Grimo 208P, Grimo 186M, Jefferson, Slate, and Yamhill. These cultivars have some blight resistance, with hardy catkins (male flower), and are very productive.

Hazelnuts do not self-pollinate and at least two different cultivars or seedling trees are required for nut production. Pollinizer trees can be distributed within the row, or main crop rows can be alternated with a row of pollinizers in a 2:1 ratio. Refer to Hazelnuts in Ontario – Biology and Potential Varieties (OMAFRA Publication 12-007) for a pollinizer-compatibility table of hazelnut cultivars.

Suggested tree spacing is 6-7 m between rows and 4 m between trees for European cultivars. Smaller, compact hybrids can be spaced at 5 m between rows and 3 m between trees.

Orchard Management, Pests and Diseases

Pruning is not required until the second year. The goal of the second year is to develop a single strong shoot that does not branch for at least 1 m from the ground. A plastic growing tube can help maintain a tall straight trunk and encourage growth in the first two seasons. The shoot which is selected for the main trunk can either be the original nursery stem or a strong sucker if it is more vigorous than the nursery shoot. Once a suitable stem has been chosen for the main trunk, further suckers should be pruned at the ground. When the main stem has reached 1-1.5 m, branches can be allowed to form above. Hazelnuts produce
their crop on the current season’s growth and the majority of the nuts are found on the outside of the canopy. Pruning strategies that provide renewal of new fruiting wood can help maintain cropping on mature trees. Hazelnuts should be pruned in late winter before bud break to minimize potential for winter injury.

Eastern filbert blight (photo above), caused by the fungal organism *Anisogramma anomala* is the single most important disease of hazelnuts in Atlantic Canada and is a major factor limiting commercial production. This disease severely affects European hazelnuts and can kill trees within a few years of infection. Attempts to introduce resistance from native North American hazelnuts into European cultivars have produced hybrids with varying levels of resistance and nut quality.

Other potential pests of hazelnut include the filbert bud mite, aphids, as well as vertebrate pests. Blue jays are particularly fond of hazelnuts and are not easily frightened, however, bird distress calls are suggested to provide some relief. The only method ensuring a high degree of control is overhead netting to completely exclude birds from the orchard – this technique is used in some hazelnut production areas.

**Harvesting**

Hazelnuts will begin to bear in 2-3 years with full production occurring in about 10 years. Early cultivars will begin to mature and drop nuts in early September. Fallen hazelnuts should be collected regularly as they will quickly become unmarketable if they lie on the ground for more than a few days. Some hazelnuts separate easily from their husk, while those that remain attached will have to be dehusked. Hazelnuts should then be dried to a moisture content of 5-8% for marketing and to extend storability.

**Additional Information**

**Perennia Fact Sheets**

- Tree Nut Production Opportunities in Atlantic Canada
- Persian Walnut Production
- Chestnut Production
- Heartnut Production
- http://www.perennia.ca/production_other.php

**Publications**

- A Guide to Tree Nut Culture in North America, Vol. 1
  Fulbright, D.
  Northern Nut Growers Association (NNGA)

- Hazelnuts in Ontario
  Biology and Potential Varieties (Fact sheet 12-007)
  Growing, Harvesting, and Food Safety (Fact sheet 12-011)
  Pests (Fact sheet 12-009)
  Ontario Ministry of Agriculture, Food and Rural Affairs

- Nut Tree Ontario
  Grimo, E.
  Society of Ontario Nut Growers (SONG)

- Nut Culture in Ontario
  Ontario Ministry of Agriculture, Food and Rural Affairs
  Publication 494

- Nut Tree Nurseries
  Grimo Nut Nursery – Niagara-on-the-Lake, Ontario
  http://www.grimonut.com/

- Charlie The Tree Guy – Truro, Nova Scotia
  http://charliethetreeguy.ca/

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This fact sheet was developed using Nut Culture in Ontario (OMAFRA Publication 494) and Nut Tree Ontario (Society of Ontario Nut Growers) as referential sources. Ernie Grimo of Grimo Nut Nursery also provided valuable input on growing methods and cultivars.

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