

# Persian Walnut Production

*Juglans regia*

## Characteristics and Adaptability

Persian walnuts are thought to have originated in present day Iran and Iraq – once part of ancient Persia. The Persian walnut is a medium-sized tree growing to a mature height of approximately 8 m and spread of 6 m. It is also known by several other names including the ‘Carpathian’ walnut, English walnut, or California walnut. The ‘Carpathian’ term refers to a particular population of Persian walnuts which became naturalized in the Carpathian Mountains of Poland and are considered highly cold tolerant. However, ‘Carpathian’ is now used interchangeably to refer to all Persian walnuts considered hardy for northern climates.

Persian walnuts can be grown in hardiness zones 5+, however, the most successful plantings in Canada are in hardiness zones 6-7. The Persian walnut evolved in mild and dry environments and is best suited to areas of low rainfall such as the Middle East, and Mediterranean climates such as California. Persian walnuts are being successfully cultivated in Atlantic Canada, however, commercial potential is limited climatically by high rainfall, late frosts, and also by winter cold, so site selection is critical.

## Propagation, Cultivars and Pollination, and Tree Spacing

Persian walnut seedlings produce trees with variable cropping habits, nut quality, and disease resistance. However, Persian walnut seedlings are considered to be satisfactory for orchard establishment. Grafted trees of improved cultivars are available to increase tree uniformity and may be worth the extra cost if a specific market has been identified. Some improved cultivars suitable for planting in Atlantic Canada are: Bauer 2, Coble 2, Combe, Harrison, ISU 73-H-24, Lake, and Sejnovo. Combe is an excellent cultivar which is annual bearing, productive, and appears less susceptible to walnut blight. Grafted trees are more tender than seedlings and are appropriate for only the most protected sites.

Persian walnut trees are partially self-pollinating, however, at least two different seedlings or improved cultivars will be required for full production. When planting grafted trees, it is important to ensure that there is overlap of bloom of the male catkins (releasing pollen) and female flowers. Broadview is an excellent pollinizer with good overlap for most cultivars. Consult with a nursery or industry specialists to ensure that the cultivars will be compatible.

Suggested tree spacing is on 12 m x 12 m squares with an optional semi-permanent tree planted in the center of the square 8.5 m from each corner. The semi-permanent trees will provide greater early production and can be transplanted or removed when the trees begin to crowd. This system can also allow for selection of superior trees in seedling orchards.



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## Orchard Management, Pests and Diseases

Persian walnuts are typically trained to a central-leader system or modified-central leader. Permanent branches below 2.5 m are not desirable for orchard management and harvesting. Keep lower limbs pruned short until branches are established above 2.5 m. Once the tree begins to establish a canopy above 2.5 m, the lower branches can be completely removed. Wide branching angles (> 45°) are preferred due to their improved strength. Pruning cuts should be made when the tree is dormant in late winter or early spring.

Walnut blight (*Xanthomonas juglandis*) is a serious bacterial disease of Persian walnuts which attacks the leaves, flowers, as well as the nuts. Developing nuts which are infected early will abort during summer. The disease is most severe in wet springs which occur frequently in Atlantic Canada. Insect pests include leafhoppers, walnut husk maggot, and codling moth. Control of these insects can be warranted if pressure becomes significant. Vertebrate pests such as birds can also pose a problem and cannons or distress calls can be an effective deterrent.

## Harvesting

Persian walnuts grown from seed will begin to bear within 4-6 years of planting while grafted trees generally begin cropping earlier. Early cultivars will begin to mature and drop nuts in mid-September. Maturity is indicated when the husks begin to split and the nuts fall to the ground. Fallen walnuts should be collected regularly as they will quickly become unmarketable if they lie on the ground for more than a few days. Persian walnuts should be dried to a moisture content of 8% for marketing and to extend storability.



## Additional Information

### Perennia Fact Sheets

**Tree Nut Production Opportunities in Atlantic Canada**

**Heartnut Production**

**Hazelnut Production**

**Chestnut Production**

[http://www.perennia.ca/production\\_other.php](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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