

United States Department of Agriculture



Soil Conservation Service
Bismarck, North Dakota

'Homestead' Arnold hawthorn



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Homestead Arnold hawthorn, *Crataegus arnoldiana* Sarg., is a seed propagated cultivar recommended for use in multi-row farmstead and single row field windbreaks, wildlife habitat, and recreation, urban, industrial development and transportation corridor plantings. The vigorous, dense growth makes it useful for shelterbelts and screening. The attractive form, foliage and flowering is of ornamental value. The fruit is edible. Many song and game birds utilize this tree for food and nesting.

Description

Arnold hawthorn is a small tree 15 to 20 feet (250-600 cm) tall, with a trunk 8 to 10 inches (20-25 cm) in diameter, stout wide spreading branches forming a broad round-tipped often symmetrical head, and slender conspicuously zigzag branchlets coated early in the season with long matted pale hairs, and armed with many stout straight or slightly curved chestnut-brown shining spines 2 to 3 inches (5.0-7.6 cm) long. Leaves are dark yellow-green, glabrous above, pubescent below, ovate to broadly ovate, sharply serrate. Flowers are 3/4 inch (1.9 cm) in diameter, pale yellow, on slender pedicels, blooming in early to mid May. Fruit is subglobose, 1.4-1.6 cm in diameter, turning fleshy and bright red when mature in late August.



Origin

Arnold hawthorn is native to the U.S. and is found growing naturally in thickets in the Arnold Arboretum, West Medford, Connecticut. This species is often cultivated in the parks and gardens of Boston. Seed of accession ND-20, PI-503530, was collected by John McDermid, Soil Conservation Service, Bismarck, North Dakota, on the Agriculture Canada, Research Station, Morden, Manitoba, Canada, in 1954. The Research Station received their plants from the United States Plant Introduction Station, Chico, California, as PI-130958 in 1941. PI-130958 was originally collected in the northeastern United States.

Establishment

Eliminate all competing perennial vegetation by cultivating the planting site and keeping it fallow for at least one year prior to planting. Plant seedlings in the spring as soon as the ground thaws and soil moisture is high. The recommended within-the-row spacing is 6 to 10 feet. Weeds should be controlled for 4 to 5 years, preferably by cultivation. Irrigation may be needed to ensure early survival on drier sites. If animal populations are high the seedlings need to be protected until trees are large enough to withstand browsing.



Propagation

Homestead is propagated by seed. Mature fruit can be collected in September, and processed by wet maceration. Germination requires warm and cold stratification. The initial warm stratification should be for 90 days at about 75 degrees F, followed by a period of cold for 180 days at about 36 degrees F in damp peat or sand. Seed needs to be closely monitored for germination towards the end of the cold stratification period.

In the nursery, seed should be planted in July, at a rate of 30 seeds/foot (1 seed/cm), to a depth of 1 1/4 inch (0.8 cm). The seeds need to be protected over winter by a mulch. In the spring the mulch needs to be removed. Seedlings require two years to reach the proper size that will survive in the field.

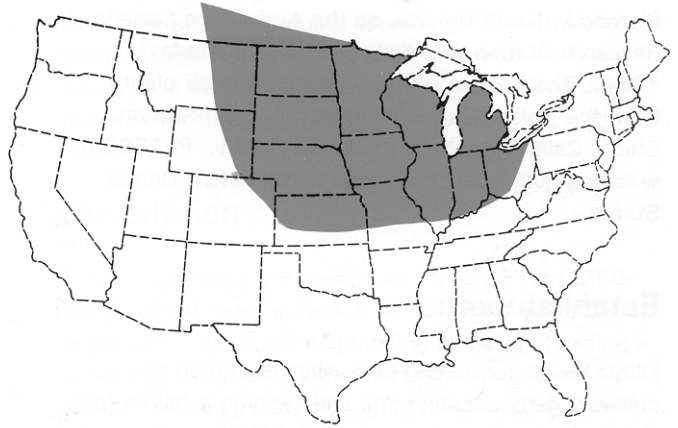
Adaptation

The USDA, Soil Conservation Service (SCS) has evaluated the adaptation and performance of Homestead Arnold hawthorn at the SCS Plant Materials Centers at Bismarck, North Dakota; Bridger, Montana; Manhattan, Kansas; Elsberry, Missouri; and East Lansing, Michigan. Field planting evaluations in actual use situations at 90 locations were conducted in cooperation with state and federal agencies and conservation district cooperators.

Homestead is currently recommended for planting on soils that are in the USDA, Soil Conservation Service, Field Office Technical Guide, Windbreak Suitability Group 1 (deep, moderately coarse through fine texture and somewhat poorly through well drained); Group 2 (deep, silty, loamy, and clayey soils, poorly to somewhat poorly drained with a high available water holding capacity); Group 3 (deep and moderately deep, well and moderately well drained soils, with moderate to high available water capacity); Group 4 (moderately well and well drained soils, available water capacity is low or moderate in the clayey soils and moderate to high in the silty or loamy soils); Group 5 (deep loamy and sandy, well drained to moderately well drained soils with a moderate available water capacity); and Group 6 (silty, loamy, well drained and somewhat excessively drained soils with a low or moderate available water capacity).

The northern limit for the area of adaptation for Homestead Arnold hawthorn appears to be plant hardiness zone 3A and with good performance southward to plant hardiness zone 6B. The most limiting factors to survival and growth rate are weed control, animal damage and soil moisture. Observations at some test locations have shown slight damage from cedar apple rust *Gymnosporangium* sp. and fireblight, *Erwinia amylovora*. The wooly apple aphid *Eriosoma lanigerum* can be a problem both in seedling beds and on mature trees. The results of these studies and others in adjacent states indicate that Homestead Arnold hawthorn is adapted to the states of North

Dakota, South Dakota, Montana, Wyoming, Minnesota, Nebraska, Kansas, Missouri, Iowa, Illinois, Michigan, Wisconsin, Indiana, and Ohio. Its performance outside of this area has not been adequately tested.



Availability

The USDA, Soil Conservation Service, Plant Materials Center, P.O. Box 1458, Bismarck, ND 58502, will maintain breeders seed and foundation seed of Homestead Arnold hawthorn. Certified seed (source identified and selected class) will be available from growers approved by the North Dakota, South Dakota and Minnesota State Certified Seed Departments.

For more information on availability and use of Homestead Arnold hawthorn, contact your local SCS office,

September 1994

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