

Growing hardy kiwifruit in the home garden

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Helpful Hints

- Vines need sunshine most of the day to grow and produce flowers.
- Plant vines about 10 feet apart.
- Hardy kiwifruit vines produce either male or female flowers. Plant one of each gender to get fruit.
- If you plant to grow many hardy kiwifruit vines, plant one male for every 10 female vines.
- Vines need to be pruned every winter, and twice during the growing season to keep them under control.
- Expect to get fruit 3 to 5 years after planting.
- Remember, hardy kiwifruit vines are vigorous and heavy. Plant vines near a very sturdy structure.



About Hardy Kiwifruit

Native to the forests of eastern Asia, about 80 species of *Actinidia* are known. Two of these, *A. kolomikta* and *A. arguta* can be grown in Minnesota and similar regions, and produce delicious, grape-sized berries with a flavor similar to grocery store kiwifruit though somewhat sweeter. A third, *A. polygama* can be grown in this region but its flavor is not pleasant.

Most kiwifruit plants are either male or female: only the females produce berries, while the males supply the pollen. The smooth-skinned berries of the cold-hardy species are typically an emerald green, though you might find varieties with reddish skin and flesh. The berry shape can vary from round to elongate.

The most winter-hardy kiwifruit, *A. kolomikta*, produces fruit about the size of large grapes. In milder climates, this vigorous species produces cherry-sized fruit. The skin is hairless, so the fruit can be eaten whole, without peeling.

A. arguta can survive winter temperatures of -10° F, so it can be grown in protected sites in southern Minnesota; however, the vine dies to the ground except in the warmest of Minnesota winters. Although the vine will grow back up again from its roots, the buds needed to produce fruit will have been killed.

A closer look at *Actinidia kolomikta*

A. kolomikta, or Arctic Beauty, can be hardy below -40°F, although some plants may not bear fruit the season following a winter that cold. The twining vine will grow at least ten feet long and spread about three feet wide. *A. kolomikta* foliage is attractive, with variegated pink, white and green leaves, and is sometimes planted for its ornamental value alone. The male plants are commonly more variegated than female plants, and variegation increases as the plants mature.

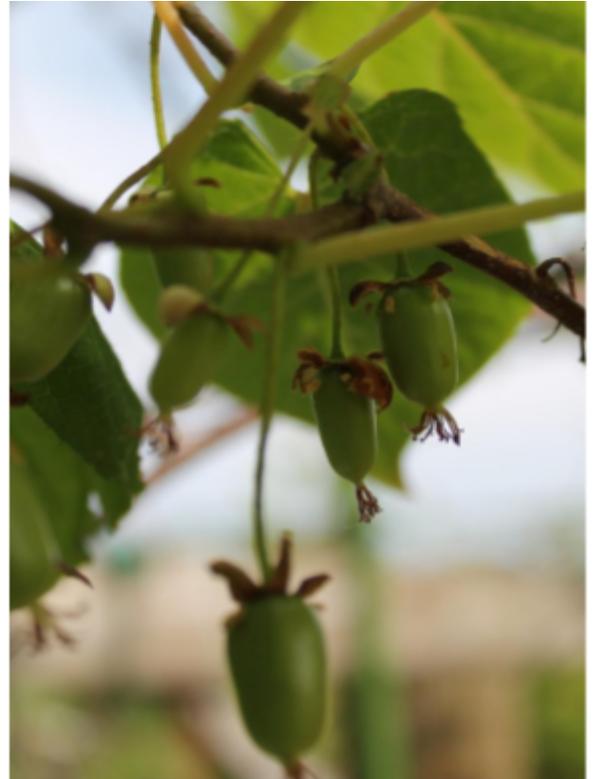
A. kolomikta performs best in partially shaded sites with well-drained soil and some protection from strong winds. They are neither drought tolerant nor flood tolerant: if the soil becomes too dry, the vine may survive, but the fruit will drop; and if the soil is too wet, the vine is likely to succumb to root rot. *Actinidia* vines grow well in soil that is acidic to slightly alkaline (pH 5.5-7.5).

A. kolomikta is less vigorous than *A. arguta*, so little pruning should be necessary. Train the vine to a single trunk for best flowering and fruiting, but don't head back or thin out shoots from this trunk, since fruit will be borne along the length of the stems. Cut stems will "bleed" or run with sap if pruning is done in spring, so any pruning should be done in January and February, with only light pruning in July, if necessary.

Some of the best cultivars of *A. kolomikta* have Russian names, such as Aromatnaya, named for its aromatic fruit; Krupnoplodnaya which has larger fruits than other cultivars; and Sentayabraskaya, which is particularly sweet. These and some others are available from mail-order and online nurseries. New varieties are being developed and should be available soon.

A closer look at *Actinidia arguta*

Actinidia arguta is more useful in Minnesota for ornamental screening than for fruit because in many winters the vine will completely die to the ground (including flower buds). This species has red petioles that provide an interesting contrast to its green leaves. It can grow more than 20 feet long in a single season, and spread to eight feet wide. Trellises for *A. arguta* must be sturdy and firmly anchored, since the vines grow vigorously and can be quite heavy. Because it dies to the ground each year, pruning is limited to removing dead stems from the trellis before growth starts in spring.



Young *A. kolomikta* berries. Bob Guthrie.

Some kiwifruit enthusiasts in Minnesota have harvested crops of fruit from *A. arguta* by training it on a trellis that can be lowered to the ground for the winter. The vines are then mulched with a thick layer of straw, and become buried by snow as well. In spring, the trellis is brought back to the upright position, the vine and its flower buds having survived winter under the insulating layers of mulch and snow.

If *A. arguta* is grown this way, prune the vines back severely for best fruiting. In winter, thin out any weak branches and the thick vertical stems known as watersprouts. Now identify the wood that will be fruitful and the wood that will produce leaves. Fruiting spurs have closely spaced buds. Canes that will produce only leaves in the spring, rather than flowers (and then fruit), have buds spaced farther apart. Prune out most of these vegetative canes. Cut the remaining canes back as far as the short fruiting spurs.

A number of different cultivars of this species are available. The one most commonly found at Minnesota garden centers is Issai, valued as a self-fertile female that produces small seedless fruits. However, this cultivar lacks sufficient cold hardiness to be grown for fruit in most of Minnesota. If you try growing *A. arguta* for fruit, plant a male of the same species; don't rely on a male *A. kolomikta* as a pollinizer.



The dense foliage of *A. arguta* makes it good for screening, and requires a very sturdy structure to grow on..
Bob Guthrie.

Selected hardy kiwifruit species for Minnesota

Species	Hardiness in Zone 4	Hardiness in Zone 3	Description
<i>Actinidia arguta</i>	Fair	Poor	Large grape-sized berries, higher yields, spur-bearing habit of some accessions makes harvesting easier; attractive foliage with glossy green leaves and bright red petioles. Sun tolerant. Vigorous growth habit requires more pruning.
<i>Actinidia kolomikta</i>	Very good	Good	More compact growth habit (less labor), precocious, tri-color green-white-pink variegated foliage, fruit very high in vitamin C; small grape-sized berries. Fresh berries generally have a limited shelf life due to small size and high sugar content.



A. kolomikta variegated foliage. Bob Guthrie.



A. kolomikta male flowers in bloom. Bob Guthrie.



A. arguta berries. Bob Guthrie.



A. arguta blossom. Bob Guthrie.

Getting started

Buying Plants

Several Minnesota retail nurseries sell kiwi vines. Plants can also be ordered from many nurseries online. Both male and female plants are needed for fruit production. If you plan to grow a large number of vines, one male plant is generally required for every six female plants.

Planting

Kiwifruit vines grow best in a well-drained, aerated and moisture-retentive soil that is slightly acidic to neutral (pH 5.5-7.5), and rich in organic matter.

Plant vines where they will be shaded from afternoon sun and winter sun, such as north or east of a treeline or building structure, as these locations contribute to cooler and moister soil conditions favored by kiwifruit. In the wild, the trunks of kiwifruit vines are commonly shaded by trees, while the tops of the plant receive sunlight. Trees also provide vines protection from strong winds and help protect tender shoots during the spring growth. The cooler soil and air temperatures associated with these landscape positions delay flowering in the spring and help retain soil moisture during the growing season—both good things. The selected location should also allow for air circulation and avoid low-lying areas that can become frost pockets.

Plant bare-root or container-grown plants early in the spring after the risk of frost is past. Mulch the base of each vine with wood chips, straw, compost or a similar material.

Watering

Watering is likely to be required during most Minnesota summers, especially those that are dry in mid- to late season. Drought-stressed plants are prone to smaller fruit, premature berry drop, and are more susceptible to winter cold injury.

Support

Kiwifruit vines require sturdy support. Construct or purchase a durable trellis made of metal or wood, with wires or other supports extending horizontally. Wire fencing, supported by side posts, makes an adequate trellis. Kiwifruit vines climb by twining, rather than by anchoring themselves with tendrils.

Start the vine climbing up a wide support such as a large bamboo pole or fence post. Tie the cane to the post to encourage it to grow straight up rather than twining around the post. If the vine's trunk twines around the post, it may not grow and expand properly because it will be too tightly coiled.



This sturdy trellis system in a home garden supports numerous hardy kiwivines. The trunks were trained straight up the posts, rather than being allowed to coil up. This allows the trunks to grow larger which will help support the vine. Bob Guthrie.

Through the Seasons

During the first year or two after planting, the vine may not grow very tall. Underground, though, it will be developing a strong root system to support more vigorous growth and fruiting in future seasons.

Things to Do	Jan	Feb	Mar	Apr il	Ma y	Jun e	Jul y	Au g	Sep t	Oct	No v	De c
Plant kiwifruit vines in spring after the threat of frost is past.												
Control weeds throughout the season.												
Tie new growth to trellis as needed.												
Prune excessive growth in late June or early July.												
Harvest ripe berries after testing a few for ripeness.												
Clean up all fallen leaves, fruit, and debris.												
Prune dormant vines in early winter before significant snowfall.												

Fertilizer and Mulch

Once the vine has begun fruiting, it may be necessary to fertilize it yearly with balanced compost. In most cases, annual applications of a balanced compost should be sufficient. Apply compost or a light application of a prepared balanced organic fertilizer around the trunk area from the spring (after risk of frost is past) into early July.

Most Minnesota soils have adequate phosphorous for plant growth; however, if a soil test shows a lack of phosphorus, be sure to use a complete fertilizer. Woodchip mulch will generally not tie up nitrogen unless the wood chips were incorporated into the soil during planting.

Apply 4-inches of wood chip or other mulch to retain moisture, regulate soil temperature, control weeds, and encourage healthy root growth.

Weeding

It is important to keep weeds and grass away from around the base of kiwifruit vines, to prevent competition for water and nutrients. A 3- to 4-inch layer of mulch will help control weeds.

Insects and Other Creatures

Insect damage is rare on kiwifruit vines. Cottontail rabbits, however, can cause damage to kiwifruit plants during the fall and winter months (particularly after the first snowfall when other food becomes scarce) and may completely girdle the vine's trunk. Secure fencing of adequate height for anticipated snow depths protects the vines.

Diseases and Challenges

Aside from the root rots common to Actinidia in poorly drained soil, there are no significant diseases to worry about when growing hardy kiwis. Plant vines in well-drained soil and be sure not to over-water.

Pruning and Training

Hardy kiwifruit vines can be trained very similarly to grapevines. Remember these vines grow very long and are very heavy, and can become unruly within one season. For this reason, choose your support system wisely. Support systems shown here are specifically built for kiwi vines, however decorative supports such as arbors and pergolas can work just as well, provided they are very sturdy.

The year after planting, vigorous shoots will emerge from the base of the vine. The straightest and most vigorous of these should be selected as the permanent trunk. The rest of the shoots should be pinched back at the tip and pruned out entirely the following winter.



Training a new hardy kiwi vine is similar to training a new grapevine. Choose a strong stem to be the trunk and train that up a stake. Bob Guthrie.



This vine is being trained like a grapevine. There's a main trunk and two cordons that have been trained horizontally. Bob Guthrie.

Much of the vegetative growth occurs during the spring and early summer. Left unchecked, vines can grow into a tangled, impenetrable mess within a few seasons. In Minnesota, pruning is necessary during both the dormant season and the growing season. Two or three times during the summer, cut non-flowering laterals back. Trim flowering shoots back to four to six leaves beyond the last flower. After the vines go dormant in fall or early winter, remove canes that fruited during the previous season as well as dead, diseased, or tangled canes. Keep the best one-year-old lateral canes that haven't fruited, spaced about a foot apart along the arms.



Late-fall pruning is recommended to prevent heavy snow and ice loads on trellis structures. Bob Guthrie.

Harvest and Storage

The berries begin to ripen in August and bearing may extend into late September. Cool night temperatures facilitate ripening. Immature berries are glossy, opaque and hard. As they ripen, the berries become dull, translucent and soft when gently squeezed. Once the berries start to ripen, the remainder of the berries can be picked. Like kiwifruit available in the grocery store, they are best eaten fresh and can be refrigerated for a week or two.

Winter Protection

A shade barrier may be needed on the south and southwest sides of the vine's trunk if insufficient shade is available. The dark-colored bark readily absorbs and accumulates daytime heat, especially in late winter when the trunks can be exposed to the combination of direct sunshine and snow-reflected radiation. To protect vines from sunscald, use spiral tree wrap, paint trunks with latex paint after leaves fall (late October), or place a burlap or other dense screen south of the trunks before the ground freezes.



A shade cloth can help prevent winter injury to trunks. Bob Guthrie.