

Hardy magnolias for the north

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I have been growing magnolias since the late 70s in Green Bay, WI, which is located on the border of USDA zones 4 and 5. Our temperatures have dropped to -28°F (-33°C) during the winter of 1994, -26°F (-32°C) during the winter of 1996, and -22°F (-30°C) during the winter of 2000. The month of January 1994 was the third coldest month ever recorded in Green Bay weather history. On one day that month, the maximum temperature never got above -18°F (-28°C), the lowest daily maximum ever recorded.

Some factors contributing to magnolia hardiness that I have observed over the years are:

- A gradual hardening off period in the fall and early winter is of utmost importance. A temperature of 0°F (-18°C) in early November will be more devastating than -25°F (-32°C) in the middle of winter. Early cold in November of 2000 caused trunk cracks on some of the more tender magnolias. Cracks are generally found on hybrids with *M. campbelli*, *M. sprengeri*, *M. denudata*, and *M. sargentiana* genes in their parentage. It is essential that fertilization of magnolias be done only in late fall or early spring to prevent late summer growth and ensure that the magnolias harden off properly.
- Extremes in temperatures in a short duration of time is very harmful to magnolias. In this area we seldom have winter temperatures of $50\text{--}60^{\circ}\text{F}$ ($10\text{--}15.5^{\circ}\text{C}$) followed by below zero temperatures. Blooming does not begin until late April and the blooms are seldom blackened by a hard freeze, so consequently a large seed crop is produced almost every year.
- Planting magnolias on a site where they receive protection from drying winter winds and with good frost drainage is extremely important. I plant my most tender crosses in a site where they receive winter shade and summer sun from a planting of tall white pines.
- Understock of grafted plants is very critical in cold climates. During the winter of 2002–2003, we had a warm December, which was followed by much below normal temperatures in January and February. There were no record lows set at this time, but the cold was continu-

ous and the lack of snow cover caused deep frost penetration. Several magnolias grafted on tender understock perished while trees grafted on *M. kobus* or *M. acuminata* were unharmed. A large *M.* 'Miss Honeybee' grafted on *M.* × *soulangeana* perished while a nearby graft of *M. sprengeri* 'Dark Diva' grafted on *M. acuminata* was unhurt. It is essential that growers who sell magnolias in cold climates graft on either *M. kobus* or *M. acuminata*.

- Planting on a site that slopes to the north can help delay the growing season resulting in a later bloom and avoiding flower bud damage.

The following list represents some of the magnolias in my collection, most of which were planted in 1989 and 1990. All were planted as small 1–3ft (0.3–0.9m) plants and received no special winter protection after being planted out.

The hardiness zone is based on my experience with the magnolia and could vary in various micro climates. Patrick Vettling who lives in zone 4, north of the Twin Cities, also provided information on hardiness.

Almost all magnolias have some degree of pollen fertility, so I am including seed fertility of hand pollinated flowers. For readers who are interested in hybridization, keep in mind that many magnolias that produce a limited amount of open pollinated seed can be very responsive to hand pollination.

Yellow Magnolias

'Butterflies'

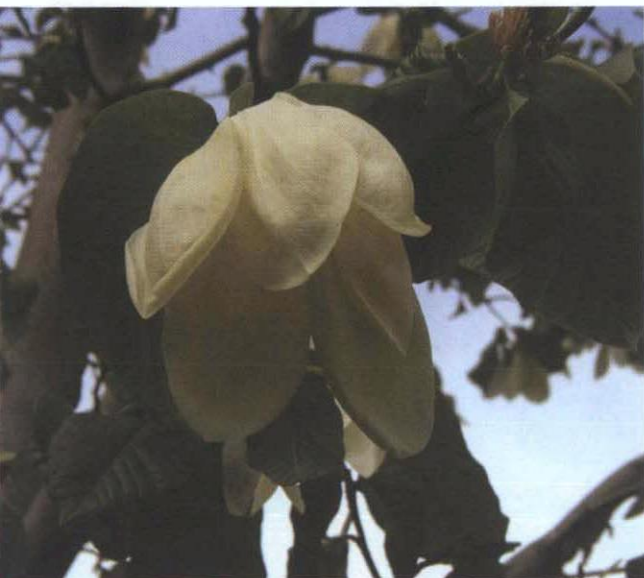
This excellent deep yellow magnolia failed to bloom only once in the past ten years. The best yellow, but the display is short lived if the weather is hot. A medium sized tree reluctant to form a leader. No seed fertility. No wood damage after -34°F (-37°C). Zone 4.

'Elizabeth'

A lighter yellow, but its profusion of flowers and its flower form is spectacular. The only time the flower buds were damaged was after the winter of 1994. Poor seed fertility. Zone 4.

'Eva Maria'

Yellow flowers with a pink blush that bloom with the leaves. There has been some flower bud damage in colder winters. Poor seed fertility. Zone 5.



Magnolia 'Golden Rain'

acuminata × *M.* 'Norman Gould' has medium yellow flowers with six, very wide, cupped shaped tepals, that cascade downward. This vigorous, tall growing magnolia has shown tremendous hardiness. Good seed fertility. Zone 4.



Magnolia 'Goldfinch'

'Gold Cup'

The light yellow flowers hold their upright form until the tepals fall. The outstanding flower form apparently is inherited from its *M.* 'Lennei' parentage. This cultivar has shown exceptional hardiness for me. Good seed fertility. Zone 5.

'Gold Star'

This superb, light yellow, star-shaped magnolia has proven to be very flower-bud and wood hardy. Fair seed fertility. Zone 5.

'Golden Rain'

This tetraploid cross of *M.*

acuminata × *M.* 'Norman Gould' has medium yellow flowers with six, very wide, cupped shaped tepals, that cascade downward. This vigorous, tall growing magnolia has shown tremendous hardiness. Good seed fertility. Zone 4.

'Goldfinch'

This cultivar has been entirely hardy and it does provide some repeat bloom in late summer. Poor seed fertility. Zone 5.

'Hattie Carthan'

The showy yellow and purple flowers bloom as the leaves are developing. The plant had widespread flower bud damage after -20°F (-29°C). Fair seed fertility. Zone 5.

'Ivory Chalice'

The pale yellow flowers have outstanding form similar to *M. denudata*. The

flower buds are extremely hardy. A tall, upright growing tree. Fair seed fertility. No wood damage after -34°F (-37°C) in Minnesota. Zone 4.

'Sundance'

The barium yellow flowers have excellent form similar to *M. denudata*. The flower buds were destroyed after the 1994 cold. Poor seed fertility. Zone 5.

'Yellow Bird'

The deep yellow flowers bloom as the leaves are developing. Flower buds have never been destroyed by cold winters. This plant has become an excellent parent in my hybridizing program and it is the seed parent of *M. 'Blushing Belle'*. Excellent seed fertility. Zone 4.

'Yellow Lantern'

The flowers are of a large, medium yellow that preserve their upright form until the tepals fall. The flower buds were damaged after the 1994 cold. Excellent seed fertility. Zone 5.

Kobus type magnolias

'Ballerina'

This hardy magnolia has fragrant, white flowers with 30 or more tepals. I highly recommend it as a substitute for *M. 'Merrill'*. Good seed fertility. Zone 4.

'Dawn'

The best pink *M. kobus* var. *stellata* that I grow. All of the pink forms tend to be less flower-bud hardy and will bloom sparingly after a cold winter. Poor seed fertility. Zone 5.

'Donna'

This magnolia has very tender flower buds and consequently provides a limited bloom each spring. Poor seed fertility. Zone 5.

'Encore'

The white with a pink base flowers form in multiples of 1-4 on the tips of twigs as well as along the twigs. Augie Kehr's cross of *M. 'Encore'* and *M. 'Alexandrina'* are producing beautiful pink flowers on a plant that needs to be named.



Magnolia 'Encore'

Excellent seed fertility.
Zone 4.

'Janaki Ammal'

The flowers of this large, tetraploid *kobus* type will experience some flower bud damage in colder winters. Fair seed fertility. Zone 5.

'Jane Platt'

The flower buds are damaged after a cold winter. Good seed fertility when it blooms. Zone 4.



Magnolia 'Angelica'

'Keiskei'

A nice pink-purple *stellata* type, with up to 40 tepals, that does experience some flower bud damage in colder winters. Poor seed fertility. Zone 5.

'Leonard Messel'

This commonly grown magnolia is very reliable and never fails to bloom. A good blooming tree for shady locations. Excellent seed fertility. Zone 4.

'Merrill'

Cold temperatures in late winter or early spring can cause flower bud damage. Fair seed fertility. Zone 4.

'Norman Gould'

A tetraploid *kobus* type with good flower form, but rather tender flower buds. An excellent parent for hybridizing. Fair seed fertility. Zone 5.

'Pink Perfection'

This magnolia has only been in my collection for five years, but I am very impressed with its lilac-pink flowers with up to 50 tepals. Good seed fertility. Zone 5.



Magnolia 'Two Stones'



Magnolia 'Black Beauty'

'Raspberry Fun'

An improved *M.* 'Leonard Messel' with more tepals and a deeper color. The flower buds are extremely hardy. Excellent seed fertility. Zone 4.

'Rosea 32'

The flowers of this exceptionally fragrant magnolia have excellent form and excellent flower bud hardiness. Good seed fertility. Zone 4.

'Two Stones'

This is the best of the tetraploid *M. kobus* var. *stellata* forms with good flower form and outstanding hardiness. I consider this cultivar, to be the best *stellata* in my collection. Poor seed fertility. Zone 4.

'Wada's Memory'

The flower form is a bit droopy, but the fragrance is awesome. This magnolia will experience some flower bud damage from colder winters. Another good tree for shady locations. Fair seed fertility. Zone 4.

'Waterlily'

The flower buds have never been damaged on this first-rate white cultivar which I consider better than *M.* 'Royal Star'. Fair seed fertility. Zone 4.



Magnolia 'Blushing Belle'

'White Rose'

This dazzling rose-formed magnolia keeps its upright form until the tepals fall. Fair seed fertility. Zone 4.

Other Hybrids

'Alexandrina Dark Form'

Good color and the hardiest of the *M.* \times *soulangeanas*. Poor seed fertility. Zone 5.

'Angelica' (*M. cylindrica* × *M. × soulangeana* 'Sawada's Pink')

Angelica has nine round, cup shaped tepals that measure over 3in (7.6cm) in diameter. The color is a pure white. The flower retains its bowl shape and does not flop with age. Angelica will develop into a medium sized tree. The bloom time is intermediate between *M. cylindrica* and *M. soulangeana*. The seed of this hybrid was collected from the original cross made by Phil Savage. Good seed fertility. Zone 5.



Magnolia 'Daybreak'

'Barbara Nell'

This *M. acuminata* × *M. sprengeri* 'Diva' hybrid is very hardy, but the flowers are smaller than similar crosses. Fair seed fertility. Zone 5.

BBG 204 ('Black Beauty')

This is a novelty magnolia with very dark purple flowers and poor form. Fair seed fertility. Zone 4.

'Big Dude'

This is a magnolia with very striking, enormous, pink-purple flowers. Will experience wood and flower bud damage in extremely cold winters. Excellent seed fertility. Zone 5.

'Blushing Belle' (*M.* 'Yellow Bird' × *M.* 'Caerhays Belle')

Flowers similar to *M.* 'Caerhays Belle,' but much hardier. The deep pink exterior and lighter pink interior shows no trace of yellow. The tree bloomed after -20°F (-29°C). No seed fertility. Zone 5.



Magnolia 'Lennei'

'Coral Reef'

This magnolia with gorgeous, coral pink flowers, has been a rather scanty bloomer thus far. Excellent hardiness. Good seed fertility. Zone 5.

'Daybreak'

This magnolia has lustrous pink flowers and will grasp the attention of most guests viewing my collection. Has never failed to bloom, even after -28°F (-33°C). A first class magnolia with a narrow upright growth habit. Good seed fertility, but poor viability. Zone 4.

'Emma Cook'

This early blooming magnolia puts on a striking show most springs with its abundance of 12-tepaled white flowers. Flower buds are damaged in cold winters. Poor seed fertility. Zone 5.

'Flamingo'

Has been very hardy, but the tree needs to establish itself before producing an abundance of flowers. Good seed fertility. Zone 5.

'Galaxy'

Not completely wood or flower bud hardy in this climate, but puts on a wonderful display after milder winters. Good seed fertility. Zone 5.

Kosar/de Vos Hybrids, 'Ann', 'Jane', 'Betty', 'Ricki', 'Susan', 'Randy', 'Pinkie'

All are wood hardy, but do suffer some flower bud damage in cold winters. No seed fertility. Zone 5.

'Lennei'

One of the hardiest of the *M. × soulangeana* selections that suffers only minor wood and flower bud damage after the coldest winters. The flower form is excellent, but the growth habit is very floppy. An excellent parent for hybridization with excellent seed fertility. Zone 5.

'Marilyn'

This very hardy magnolia with red-purple flowers will bloom for 4-5 weeks. No seed fertility. Zone 4.

'Nimbus'

Dead! Not hardy at all.

'Phil's Masterpiece'

(*M. acuminata* × *M. campbellii*) The flowers are 8-10in (20-25cm) across, have a nice cup and saucer form, with an exterior a deep rose pink, and an interior a lighter pink. The tree, which bloomed after winter cold of -20°F (-29°C), is susceptible to frost cracks. Fair seed fertility. Zone 5.

'Picture' (15ft)

Huge purple and white flowers that bloom too early and consequently are often damaged by frost. Fair seed fertility. Zone 5.

'Pink Cameo'

(*M.* 'Helen Fogg' × *M.* 'Northstar') The flowers have 12 tepals, with tepal tips cupped inward, and remaining upright until they fall. The color is a bright pink outside and a lighter pink inside. Fair seed fertility. Zone 5.

'Pink Delight'

(*M.* 'Alexandrina' × *M.* 'Galaxy') This magnolia has extremely fragrant, very wide tepaled, flowers of a high-quality, lavender-pink. Extremely good seed fertility. Zone 5.

'Pink Royalty'

Very hardy, outstanding coral pink flowers with up to 16 tepals, with first-class fragrance. Tree requires several years of growth to bloom prolifically. Fair seed fertility. Zone 4.

'Pink Surprise'

(*M. liliiflora* × *M. sprengeri* 'Diva') × (*M. acuminata* × *M.* 'Picture') Tiny flower buds develop into large, wide tepaled, bright pink flowers. Many secondary flower buds extend the bloom period for up to a month. Bloomed after -26°F (-32°C). Excellent seed fertility. Zone 5.

'Red Baron'

(*M. acuminata* × *M.* 'Big Dude') Flowers are smaller than *M.* 'Big Dude', but with a deeper red color. This magnolia is much hardier than *M.* 'Big Dude'. Excellent seed fertility. Zone 5.



Magnolia 'Roseanne'



Magnolia 'Rose Marie'

'Roseanne'

(*M. liliiflora* 'O'Neill' × *M. kobus* var. *kobus* 'Norman Gould') This hybrid has six or seven tepals which are a rich lavender pink on the outside and a lighter pink on the inside. The tepals are very broad and retain their upright form. A fertile hybrid that easily sets viable seed. The foliage is semi-glossy with a rugose texture. Excellent seed fertility. Zone 4.

'Rose Marie'

(*M.* 'Pink Surprise' × *M.* 'Daybreak') This hybrid has large flowers with nine broad tepals. The flower exterior is a vivid rosy pink and the interior is a solid, medium pink, a shade darker than *M.* 'Daybreak.'

The tree blooms at a young age, is very floriferous, and blooms for up to six weeks. Excellent seed fertility. Zone 5.

'Ruby'

Due to very tender flower buds the bloom is impressive about every three years. Poor seed fertility. Zone 6.

'Rustica Rubra'

Not as hardy as *M.* 'Lennei,' but the growth habit is much better. Zone 5.

'Spectrum'

The flowers of this National Arboretum selection are much more spectacular than *M.* 'Galaxy,' but are not as plentiful. This selection is less hardy than *M.* 'Galaxy.' Poor seed fertility. Zone 5.

'Toro'

This magnolia, which is a grandparent of 'Rose Marie,' is a very vigorous and reliable bloomer. Good seed fertility. Zone 4.

'Woodsman'

This tremendously hardy magnolia has provided excellent genetic material for future hybridizing. A good parent with excellent seed fertility. Zone 4.



Magnolia 'Pink Surprise'

Species

M. acuminata

('Patriot', 'Miss Honeybee', 'Fertile Myrtle') All are hardy and excellent seed parents. Zone 4.

M. cylindrica

This tree was magnificent last spring, but suffers some flower bud damage in colder winters. Good seed fertility. Zone 5.

M. denudata

This magnolia is marginally hardy in this area and will suffer flower bud and wood damage during colder winters. Poor seed fertility. Zone 5.

M. kobus borealis

This magnolia has been a wonderful performer in Minnesota where it bloomed after -34°F (-37°C). A good performer in shady locations. Good seed fertility. Zone 4.

M. liliiflora

('Holland Red', 'Darkest Purple', 'Nigra', 'O'Neill') All will suffer some wood and bud damage in a colder winter. Good seed fertility. Zone 5.

M. macrophylla

A 12ft (3.7m) tree did suffer some wood damage after -28°F (-33°C). Zone 5.

M. obovata

Seed source appears to be important with this species with selections from Hokkaido being the most hardy. (I have a cross of *M. officinalis* \times *M. obovata* that is over 40ft (12m) tall and is very hardy; this plant will be registered as 'Oriental Charm.' It has gorgeous and very fragrant flowers, but unfortunately is very difficult to propagate. Fair seed fertility. Zone 5.)

M. salicifolia

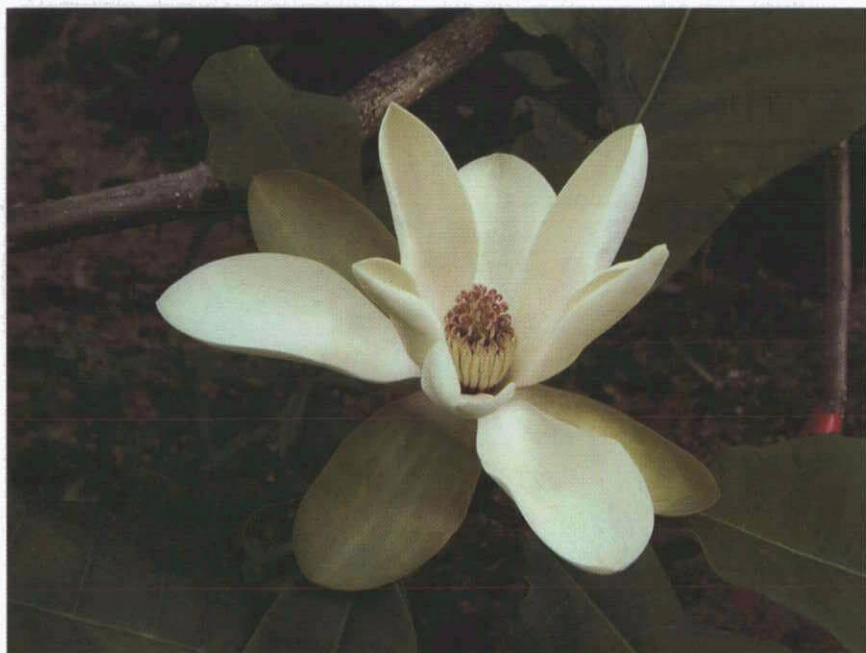
All selections are hardy except 'Jermyns' and 'Tufer Clone.' Poor seed fertility. Zone 4.

M. sieboldii

Very hardy, but must be protected from direct summer sun. I have succeeded in making several crosses using *M. sieboldii* as the seed parent and *M. grandiflora* as the pollen parent. My crosses include using the diploid, tetraploid, and hexaploid form of *M. sieboldii* and the pentaploid and tetraploid forms of *M. grandiflora*. 'Colossus' is an excellent hexaploid form. Good seed fertility. Zone 4.

M. virginiana

A selection from Massachusetts appears to be hardy, but others are tender. In initial trials, 'Moonglow' appears to be very hardy. Poor seed fertility. Zone 5.



Magnolia 'Magnolia Charm' (*M. officinalis* × *M. obovata*)

All photographs by the author.

