

# Tree and Shrub Characteristics for Riparian or Speciality Plantings

COMMON NAME	SCIENTIFIC NAME	Native Species	Mature Height (feet)	Mature Crown Spread (feet)	USDA Hardiness Zone	Conservation varieties avail.	Growth Rate	Shade Tolerance	Snow/Ice Tolerance	Root or Basal Suckers	Coppicing Potential	Flood Tolerance	Wildlife Food	Wildlife Cover	Bank Stabilization	Detritus Source	Nutrient Uptake	Sediment Trap.	Stream Shading	Regeneration Potential	Lifespan
<b>Shrubs</b>																					
Almond, Russian	<i>Prunus tenella</i>	N	3-5	3-5	2	Y	SLOW	N	M	Y	Y	N	M	Y	Y	N	M	M	NA	N	S
Arrowwood	<i>Viburnum dentatum</i>	Y	6-8	6-15	2	N	MED.	M	M	Y	Y	M	M	M	Y	N	M	M	N	Y	M
Buffaloberry, silver	<i>Shepherdia argentea</i>	Y	8-12	8-14	2	Y	MED.	N	N	Y	M	N	Y	Y	M	N	M	N	NA	M	M
Caragana (Siberian peashrub)	<i>Caragana arborescens</i>	N	6-11	6-12	2	N	MED.	M	M	N	Y	N	M	Y	M	N	M	N	N	M	M
Cherry, Mongolian	<i>Prunus fruticosa</i>	N	4-6	3-6	3	Y	SLOW	N	M	Y	M	N	M	M	M	N	M	N	NA	N	S
Cherry, Nanking	<i>Prunus tomentosa</i>	N	6-7	6-10	2	N	MED.	N	M	N	M	N	M	Y	M	N	M	N	NA	M	S
Chokeberry, black	<i>Photina melanocarpa</i>	Y	3-6	3-4	4	Y	SLOW	M	M	N	M	M	M	Y	M	N	M	N	N	N	M
Chokecherry	<i>Prunus virginiana</i>	Y	12-20	10-20	2	Y	MED.	M	M	Y	Y	N	M	Y	Y	M	M	M	M	Y	M
Cotoneaster, European	<i>Cotoneaster integerrima</i>	N	8-12	8-12	3	Y	MED.	M	M	N	Y	N	M	Y	M	N	M	N	NA	N	S
Cotoneaster, Peking	<i>Cotoneaster acutifolia</i>	N	6-8	6-10	3	N	MED.	M	M	N	Y	N	M	Y	M	N	M	N	NA	N	S
Cranberrybush, American	<i>Viburnum trilobum</i>	Y	8-12	8-12	2	N	MED.	N	M	N	M	M	M	Y	M	N	M	N	M	N	M
Cranberrybush, European	<i>Viburnum opulus</i>	N	10-15	10-15	4	N	MED.	N	M	N	M	M	M	Y	M	N	M	N	M	N	M
Currant, American black	<i>Ribes americanum</i>	Y	3-5	3-5	2	N	MED.	M	M	M	M	N	M	Y	M	N	M	N	NA	Y	S
Currant, golden	<i>Ribes, aureum</i>	Y	3-6	3-6	2	N	MED.	M	M	M	M	N	M	Y	M	N	M	N	NA	Y	S
Dogwood, redosier	<i>Cornus sericea</i>	Y	7-10	10-15	2	N	FAST	Y	M	M	Y	Y	M	Y	Y	N	Y	Y	M	Y	M
Dogwood, gray	<i>Cornus racemosa</i>	Y	10-15	10-15	4	N	MED.	Y	M	Y	Y	N	Y	Y	M	N	M	M	N	Y	M
Dogwood, silky	<i>Cornus amomun</i>	Y	7-9	6-10	5	N	MED.	Y	M	Y	Y	M	Y	Y	Y	N	M	Y	N	Y	M
Elderberry	<i>Sambucus canadensis</i>	Y	6-8	5-12	3	N	FAST	M	M	Y	Y	Y	Y	Y	Y	N	M	M	M	Y	M
False indigo	<i>Amorpha fruticosa</i>	Y	8-10	6-10	5	N	SLOW	N	M	N	Y	Y	Y	Y	Y	N	Y	Y	M	Y	M
Forsythia, 'Meadowlark'	<i>Forsythia europa x F. ovata</i>	N	6-10	6-11	3	N	MED.	M	M	N	Y	N	N	M	M	N	M	N	NA	N	M
Gooseberry, Missouri	<i>Ribes missouriense</i>	Y	3-5	3-5	3	N	MED.	M	M	M	M	N	M	Y	M	N	M	N	N	M	S
Hansen Hedge rose	<i>Rosa rugosa 'Hansen'</i>	N	4-6	4-6	2	N	MED.	M	M	Y	Y	N	Y	Y	M	N	M	M	N	M	M
Honeysuckle, Amur	<i>Lonicera maackii 'Rem red'</i>	N	10-12	10-14	4	N	MED.	Y	M	N	Y	M	M	Y	M	N	M	N	M	M	M
Honeysuckle, blueleaf	<i>Lonicera korolkowii 'Freedom'</i>	N	6-10	6-9	4	Y	MED.	N	M	N	Y	M	M	Y	M	N	M	N	M	M	M
Lilac, common	<i>Syringa vulgaris</i>	N	8-12	6-12	3	N	MED.	N	M	Y	Y	N	N	Y	Y	M	M	M	NA	N	M
Lilac, late	<i>Syringa villosa</i>	N	6-10	5-10	2	Y	MED.	N	M	N	Y	N	N	M	M	N	M	N	NA	N	M
Nannyberry	<i>Viburnum lentago</i>	Y	10-12	8-12	2	N	MED.	M	M	M	Y	M	Y	M	M	N	M	N	M	N	M
Ninebark, common	<i>Physocarpus opulifolius</i>	Y	6-9	5-9	3	N	SLOW	N	M	Y	N	M	M	M	M	N	M	M	N	N	M
Plum, American	<i>Prunus americana</i>	Y	8-10	8-10	3	N	MED.	N	M	Y	M	N	Y	Y	M	N	M	M	NA	M	S
Sandcherry, western	<i>Prunus pumilla besseyi</i>	Y	3-6	3-6	3	N	MED.	N	M	M	M	N	M	M	M	N	M	N	NA	N	S

# Tree and Shrub Characteristics for Riparian or Speciality Plantings

COMMON NAME	SCIENTIFIC NAME	Native Species	Mature Height (feet)	Mature Crown Spread (feet)	USDA Hardiness Zone	Conservation varieties avail.	Growth Rate	Shade Tolerance	Snow/Ice Tolerance	Root or Basal Suckers	Coppicing Potential	Flood Tolerance	Wildlife Food	Wildlife Cover	Bank Stabilization	Detritus Source	Nutrient Uptake	Sediment Trap.	Stream Shading	Regeneration Potential	Lifespan
<b>Shrubs (cont)</b>																					
Saskatoon serviceberry	<i>Amelanchier alnifolia</i>	Y	6-10	5-12	3	N	SLOW	M	M	Y	Y	N	M	Y	Y	N	M	M	NA	M	M
Shadblow serviceberry	<i>Amelanchier canadensis</i>	Y	10-20	10-12	4	N	SLOW	M	M	Y	Y	N	M	Y	Y	N	M	M	NA	M	M
Sea-buckthorn	<i>Hippophae rhamnoides</i>	N	10-15	8-10	3	N	MED.	N	M	Y	Y	M	M	M	M	N	M	M	M	N	M
Silverberry	<i>Elaeagnus commutata</i>	Y	6-10	3-6	2	N	MED.	N	M	Y	Y	M	Y	M	Y	N	M	M	N	N	S
Snowberry	<i>Symphoricarpos occidentalis</i>	Y	3-4	1-2	3	N	SLOW	N	M	Y	Y	M	M	M	N	N	N	M	N	N	S
Sumac, skunkbush	<i>Rhus trilobata</i>	Y	3-6	4-10	2	Y	MED.	M	M	N	M	N	M	M	M	N	N	M	NA	M	M
Sumac, smooth	<i>Rhus glabra</i>	Y	5-12	10-15	2	N	SLOW	M	M	Y	Y	N	Y	M	N	N	M	M	M	N	M
Willow, Bebb's	<i>Salix bebbiana</i>	Y	8-12	4-8	2	N	FAST	N	M	M	M	Y	M	M	M	N	Y	N	M	N	S
Willow, purpleosier	<i>Salix purpurea 'Streamco'</i>	N	10-18	8-15	3	Y	FAST	N	M	M	Y	Y	M	M	M	M	Y	N	M	N	M
Willow, sandbar	<i>Salix interior</i>	Y	5-10	5-10	2	Y	FAST	N	M	Y	Y	Y	M	Y	Y	M	Y	Y	M	N	M
Woods rose	<i>Rosa woodsii</i>	Y	3-4	3-4	3	N	MED.	N	M	Y	Y	N	Y	Y	M	N	M	M	N	M	M

## Deciduous Trees

Apricot	<i>Prunus armeniaca</i>	N	15-25	12-18	4	Y	MED.	N	M	N	M	N	M	M	N	N	N	N	NA	N	M
Ash, black	<i>Fraxinus nigra</i>	Y	30-50	15-30	2	N	MED.	M	T	N	M	Y	M	M	N	Y	M	N	Y	N	L
Ash, green	<i>Fraxinus pennsylvanica</i>	Y	45-60	30-40	2	Y	MED.	M	T	N	M	Y	M	M	N	Y	M	N	Y	M	L
Ash, Manchurian	<i>Fraxinus manshurica</i>	N	30-55	25-35	3	Y	MED.	N	M	N	M	Y	M	M	N	Y	M	N	Y	N	L
Aspen, quaking	<i>Populus tremuloides</i>	Y	25-50	20-30	2	N	FAST	N	T	Y	Y	M	Y	Y	M	Y	M	M	Y	N	L
Birch, river	<i>Betula nigra</i>	Y	30-60	20-30	4	N	MED.	N	T	N	M	Y	M	M	M	Y	M	M	M	M	M
Boxelder	<i>Acer negundo</i>	Y	30-60	30-60	2	N	FAST	N	M	N	Y	Y	M	M	N	Y	Y	N	Y	Y	L
Chokecherry, Amur	<i>Prunus maackii</i>	N	25-35	15-25	3	N	MED.	N	M	N	N	N	M	N	N	N	N	N	NA	N	M
Cottonwood	<i>Populus deltoides</i>	Y	50-90	40-75	2	Y	FAST	N	M	N	Y	Y	M	M	Y	Y	Y	N	Y	N	L
Crabapple, prairie	<i>Malus ioensis</i>	Y	20-25	15-25	2	N	MED.	N	M	N	Y	N	Y	M	N	M	N	N	NA	N	M
Crabapple, Siberian	<i>Malus baccata</i>	N	15-25	15-25	2	Y	MED.	N	M	N	M	N	Y	M	N	M	N	N	NA	N	L
Elm, Japanese	<i>Ulmus davidiana japonica</i>	N	35-55	25-35	2	N	MED.	M	Y	N	Y	M	M	M	N	Y	M	N	NA	M	M
Elm, Siberian	<i>Ulmus pumila</i>	N	25-50	20-40	4	Y	MED.	M	T	M	Y	M	M	M	N	Y	M	N	NA	Y	M
Hackberry	<i>Celtis occidentalis</i>	Y	40-60	25-45	2	Y	MED.	M	T	N	M	Y	Y	M	N	Y	M	N	Y	M	L
Hawthorn, Arnold	<i>Crataegus mollis arnoldiana</i>	Y	15-20	15-20	3	Y	SLOW	N	M	N	M	M	M	Y	N	M	M	N	M	N	M
Hawthorn, downy	<i>Crataegus mollis</i>	Y	15-20	15-20	3	N	SLOW	N	M	N	M	M	M	Y	N	M	M	N	M	N	M
Honeylocust	<i>Gleditsia triacanthos</i>	Y	50-60	50-70	4	N	FAST	N	T	N	M	M	M	N	N	Y	M	N	NA	N	L
Kentucky Coffeetree	<i>Gymnocladus dioica</i>	Y	50-60	30-40	5	N	MED.	N	T	N	M	M	N	N	N	M	N	N	Y	N	L

# Tree and Shrub Characteristics for Riparian or Speciality Plantings

COMMON NAME	SCIENTIFIC NAME	Native Species	Mature Height (feet)	Mature Crown Spread (feet)	USDA Hardiness Zone	Conservation varieties avail.	Growth Rate	Shade Tolerance	Snow/Ice Tolerance	Root or Basal Suckers	Coppicing Potential	Flood Tolerance	Wildlife Food	Wildlife Cover	Bank Stabilization	Detritus Source	Nutrient Uptake	Sediment Trap.	Stream Shading	Regeneration Potential	Lifespan
<b>Deciduous Trees (cont)</b>																					
Linden, American (Basswood)	<i>Tilia americana</i>	Y	50-70	30-50	2	N	MED.	Y	M	M	Y	M	M	M	N	Y	M	N	Y	M	L
Linden, littleleaf	<i>Tilia cordata</i>	N	35-40	20-30	3	N	MED.	N	M	N	M	N	M	N	N	Y	M	N	Y	M	L
Maple, Amur	<i>Acer ginnala</i>	N	15-20	15-20	3	N	MED.	N	M	N	Y	N	N	M	N	M	N	M	NA	Y	M
Maple, silver	<i>Acer saccharinum</i>	Y	60-80	50-70	3	N	FAST	M	T	Y	Y	Y	M	M	M	Y	Y	N	Y	M	L
Maple, Tatarian	<i>Acer tataricum</i>	N	18-30	15-25	4	N	MED.	N	M	N	Y	N	N	M	N	M	N	M	NA	Y	M
Mulberry, Russian	<i>Morus alba tartarica</i>	N	25-35	25-35	4	N	MED.	N	M	Y	Y	N	Y	M	N	M	M	N	Y	M	M
Oak, bur	<i>Quercus macrocarpa</i>	Y	40-70	35-60	3	N	SLOW	N	T	N	M	Y	Y	M	N	Y	N	N	NA	M	L
Ohio buckeye	<i>Aesculus glabra</i>	Y	20-40	20-35	4	N	SLOW	M	M	N	M	M	M	M	N	Y	M	N	Y	M	L
Pear, Ussurian (Harbin)	<i>Pyrus ussuriensis</i>	N	18-30	15-20	4	Y	MED.	N	M	N	M	N	Y	M	N	M	N	N	NA	N	L
Poplar, hybrids	<i>Populus sp.</i>	VAR	40-70	20-35	2	Y	FAST	N	M	M	Y	Y	M	M	N	M	Y	N	Y	N	M
Poplar, white	<i>Populus alba</i>	Y	40-65	35-50	3	N	FAST	N	M	Y	Y	Y	M	M	M	Y	Y	N	Y	N	L
Russian-olive	<i>Elaeagnus angustifolia</i>	N	18-25	12-25	2	N	FAST	M	M	M	Y	M	Y	M	N	M	N	N	M	Y	M
Walnut, black	<i>Juglans nigra</i>	Y	35-60	30-50	4	N	MED.	N	M	N	M	N	Y	M	N	M	M	N	NA	M	L
Willow, golden	<i>Salix alba vitellina</i>	N	35-40	25-35	2	N	FAST	N	M	N	Y	Y	M	M	Y	Y	Y	N	Y	N	L
Willow, laurel	<i>Salix pentandra</i>	N	25-40	20-35	4	N	FAST	N	M	N	Y	Y	M	M	Y	Y	Y	N	Y	N	L
Willow, Missouri River	<i>Salix eriocephala</i>	Y	35-40	25-35	3	N	FAST	N	M	N	Y	Y	M	M	Y	Y	Y	N	Y	N	L
Willow, peachleaf	<i>Salix amygdaloides</i>	Y	40-55	30-45	2	N	FAST	N	M	N	Y	Y	M	M	Y	Y	Y	N	Y	N	L
Willow, white	<i>Salix alba</i>	N	40-45	30-50	2	N	FAST	N	M	N	Y	Y	M	M	Y	Y	Y	N	Y	N	L

## Conifers

Juniper, Rocky Mountain	<i>Juniperous scopulorum</i>	Y	30-40	12-20	3	N	SLOW	M	M	N	N	N	Y	Y	M	Y	N	N	NA	M	L
Larch, European	<i>Larix decidua</i>	N	30-60	15-25	2	N	MED.	N	M	N	N	N	N	M	N	Y	N	N	NA	N	L
Larch, Siberian	<i>Larix siberica</i>	N	30-60	15-25	2	N	MED.	N	M	N	N	N	N	M	N	Y	N	N	NA	N	L
Pine, Austrian	<i>Pinus nigra</i>	N	30-50	25-30	2	N	MED.	N	N	N	N	N	N	M	N	Y	N	N	NA	N	L
Pine, ponderosa	<i>Pinus ponderosa</i>	Y	50-75	25-30	4	N	MED.	N	N	N	N	N	N	M	N	Y	N	N	NA	N	L
Pine, scotch	<i>Pinus sylvestris</i>	N	25-50	20-35	3	N	MED.	N	N	N	N	N	N	M	N	Y	N	N	NA	N	L
Redcedar, Eastern	<i>Junipeous virginiana</i>	Y	30-50	15-30	3	N	SLOW	Y	M	N	N	M	Y	Y	M	Y	M	N	NA	M	L
Spruce, Black Hills	<i>Picea glauca densata</i>	Y	30-60	15-25	2	N	MED.	N	M	N	N	M	N	Y	N	Y	N	N	NA	N	L
Spruce, Colorado blue	<i>Picea pungens</i>	N	30-60	15-25	2	N	MED.	N	M	N	N	N	N	Y	N	Y	N	N	NA	N	L
Spruce, white	<i>Picea glauca</i>	Y	30-60	15-25	3	N	MED.	Y	M	N	N	M	N	Y	N	Y	N	N	M	N	L

## Legend

### General Definition of Symbols

Y = Yes - The plant is appropriate for the indicated use or exhibits the indicated characteristic to a high degree.

M = Moderate or Maybe - The plant exhibits the listed characteristics to some degree or may be appropriate for the listed use to some degree. Specifics are listed for each characteristic further in the legend.

N = No - The plant does not exhibit the listed characteristic, or is not suited for the listed use.

- 1 Native Plants  
Y = native plant (naturally occurring within the region)  
N = introduced plant
- 2 Mature Height  
Height at maturity. Assumes healthy stock planted on the most productive soils with good to excellent weed control. Generally, tree heights will decrease from east to west across South Dakota. Trees will tend to grow taller when planted in blocks or multiple row windbreaks compared to single row or specimen plantings.
- 3 Mature Crown Spread  
Maximum spread at maturity. Assumes healthy stock planted on the most productive soils with good to excellent weed control. Generally, tree size will decrease from east to west across South Dakota. Trees will tend to spread wider if planted in single rows or as a specimen planting as compared to block or multiple row plantings.
- 4 Conservation Varieties  
Y = Varieties have been tested and released for conservation plantings.  
N = Varieties may exist within the horticultural trades but have not been proven suitable for conservation plantings.
- 5 Growth Rate  
Fast, >2 feet per year  
Med., 1-2 feet per year  
Slow, <1 foot per year  
Note: Growth rates assume normal weather conditions and appropriate weed control on better soils.  
Tree growing conditions deteriorate as one progresses from eastern to western South Dakota.  
Trees and shrubs in western South Dakota may grow at slower rates than shown.
- 6 Shade Tolerance  
Plant's ability to do well when shaded from direct sunlight for most of each day during the growing season.  
Y = Yes the plant will grow well in shade.  
M = The plant is moderately well adapted to growing in shade.  
N = The plant will not grow well in shade.
- 7 Snow / Ice Tolerance  
Plant's ability to withstand normal snow drifts and ice loading, without severe deformity or breakage, such as commonly found on the windward edges of multiple row windbreaks.  
Y = Withstands heavy snow and ice loading with minimal damage.  
M = Heavy snow and ice loads cause damage to small limbs and branches, but basic plant form and function is maintained.  
N = Heavy snow and ice loads cause severe deformity and destruction to plant form and function.  
T = Tall tree, not rated for snow/ice tolerance
- 8 Root or Basal Suckers  
Plant's tendency to produce root suckers or basal trunk sprouts. Does not include basal sprouts arising from the stump when the tree has been cut.

Y = Commonly develops root suckers.

M = Rarely develops root suckers unless roots are damaged, but may produce basal trunk sprouts or spread by layering.

N = Does not develop root suckers or basal trunk sprouts.

9 Coppicing Potential

Plant's ability to initiate sprouting after the top growth has been removed (as in harvest or ice shearing.)

Note: For some species the removal of top growth may not initiate resprouts from the cut stump but rather encourage a flush of basal and root sprouts in the area immediately adjacent to the stump. For the purposes of this characteristic both are considered as coppice regeneration.

Note: In some situations, by the time that the need for coppicing is noted, the health of the root stock has deteriorated to the point that successful regeneration is not likely. The references in this table to a plant's coppicing potential assumes healthy root stock.

Y = High. Even mature healthy root stock can initiate resprouts of sufficient quantity to reestablish the stand.

M = Moderate. Mature root stock may not initiate enough resprouts to fully stock the stand.

Juvenile root stock can reestablish a fully stocked stand after the tops have been removed.

N = Unlikely that a stump will initiate new top growth.

10 Flood Tolerance

An established plant's ability to withstand soil saturation or surface ponding. NOTE: Most plants will withstand extended periods of flooding when dormant, but some plants are particularly sensitive to excess water during the growing season. Certain plants that may be tolerant to flooding once established may be sensitive to excess moisture during their establishment period.

Y = Plants are able to withstand flooding or soil saturation for more than three weeks during the growing season.

M = Plants are able to withstand one to three weeks of flooding or soil saturation during the growing season.

N = Plants are unable to withstand flooding or soil saturation for more than seven days.

11 Wildlife Food

Y = This plant is an excellent source of winter food.

M = This plant provides food prior to winter, with most food being utilized during the growing season.

N = This plant provides no food supplies that are carried into the winter and little food is available or utilized during the growing season.

12 Wildlife Cover

Y = Provides three or more of the following cover types; *nesting, loafing escape, winter cover.*

M = Provides two of the needed cover types.

N = Provides only one of the cover types.

13 Bank Stabilization

Y = Dense roots stabilize soils and supple tops resist tear out during high water.

If tops are sheared by ice, they readily resprout.

M = Root system provides effective soil stabilization, yet mature tops do not bend easily during high water. If sheared off they may not resprout as readily.

N = Neither root systems nor top growth respond favorably to high water depths and velocities.

14 Source of Detritus

Y = Listed plant is able to provide an appropriate source of detritus for the riparian system. (Detritus is stems and limbs of sufficient size to provide in-water habitat for aquatic species.)

M = Listed plant is only moderately useful as a source of detritus.

N = Due to size or rapid deterioration of stems, the listed plant is not an appropriate source of detritus.

- 15 Nutrient Uptake      Plant's ability to absorb nutrients when planted in a riparian area. Little empirical data is available for this plant characteristic. Fast growing plants that naturally occur in riparian areas are assumed to be efficient and effective nutrient sinks. Others are assumed to have value as nutrient sinks but without specific data they are rated as moderate.  
 Y = Plant's root system is able to absorb high levels of nutrients from shallow ground water.  
 M = Plant's root system is able to absorb nutrients from shallow ground water, yet plant specific characteristics are not known.  
 N = Plant would not be appropriate for use as a nutrient sink in riparian areas.
- 16 Sediment Trapping      Plant's ability to trap sediment in out-of-bank flood flows. (Directly related to the number of stems per unit area.) More stems per square foot translates to more efficient trapping. Note: Larger stems of larger trees may not trap sediment by themselves, but they strain debris, increase roughness and retard velocities which also translates to increased sediment trapping.  
 Y = This plant exhibits excellent sediment trapping ability, even with out-of-bank stream flows.  
 M = This plant provides good sediment trapping ability, yet less effectively, during flood conditions.  
 N = Plant characteristics reduce its effectiveness in filtering sediments from overland flows.
- 17 Stream Shading      Y = Dense canopy and effective plant height provide shade and cooling to stream or water body.  
 M = Crown density and height provide some temperature moderation to stream or water body.  
 N = Short stature or sparse foliage provide little temperature moderation to stream or water body.  
 NA = Species usually not adapted to riparian sites.
- 18 Regeneration Potential      Relative ability of the plant to regenerate from seed spread by birds, mammals, floods, snow melt or wind.  
 Y = Plant seeds can become established on sites with existing dense vegetation or mulch layers and minimal amounts of exposed mineral soil.  
 M = Plant seeds can become established on sites with moderately dense amounts of existing vegetation or mulch and proportionately greater areas of exposed mineral soil.  
 N = Plant seeds will become established only on suitable sites of exposed mineral soil under optimal climatic conditions.
- 19 Life Span      How long will the plant live under average field conditions found in conservation plantings. Generally plants in the eastern part of South Dakota will survive longer than in the western part of South Dakota. Life span refers only to the survival capability of the originally planted above-ground plant parts. This characteristic does not apply to situations where the above-ground part of the plant dies, but new root sprouts emerge from the existing root stock.  
  
 L = Long Above ground plant parts can be expected to survive for greater than 50 years.  
 M = Moderately long Above ground plant parts can be expected to survive for 20-50 years.  
 S = Short Above ground plant parts can be expected to survive for less than 20 years.

- Dirr, Michael A. 1977. Manual of woody landscape plants: their identification, ornamental characteristics, culture, propagation and uses. Stipes Publishing Company. Champaign.
- Farrar, J. L. 1995. Trees of the Northern United States and Canada. Iowa State University Press. Ames
- Herman, D. E., C. M. Stange, V. C. Quam. 1996. North Dakota tree handbook. North Dakota State Soil Conservation Committee. Bismarck
- Highshoe, Gary L. 1978. Native Trees for Urban and Rural America. Iowa State University Research Foundation, Ames
- Hoag, D. G. 1965. Trees and shrubs for the northern plains. North Dakota Institute for Regional Studies. Fargo
- Lafromboise, R. Nursery manager. Towner State Nursery. Towner. (Personal communication.)
- Morgenson, G. 2001 Nursery manager. Lincoln-Oakes Nursery. Bismarck. (Personal communication.)
- Preston, Richard J. 1961. North American Trees. Iowa State University Press, Ames
- Rosendahl, Carl O. 1955. Trees and Shrubs of the Upper Midwest. University of Minnesota Press. Minneapolis
- Stephens, H. A. 1973. Woody plants of the north central plains. The University Press of Kansas. Lawrence/Manhattan/Wichita
- Tober, D. 2001. Plant material specialist. Natural Resources Conservation Service. Bismarck. (Personal communication.)
- USDA-NRCS PLANTS Database. 2001. <http://plants.usda.gov/>.

Note: When differences existed between references, the PLANTS database was generally used for resolution.