

A Quarter Century of Tree Planting Trials at the Morris, Minnesota Field Evaluation Planting



Plant Materials Center
Bismarck, North Dakota
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Acknowledgement

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Executive Summary

Objectives:

1. Assemble and evaluate the adaptation and performance of selected woody plant material for field and farmstead windbreaks, wildlife habitat, and streambank and lakeshore plantings in the Northern Great Plains.
2. Select and cooperatively release superior cultivars for increase by commercial nurseries.

This field evaluation planting at Morris, Minnesota, was established in 1978. Approximately 210 different accessions or seed sources of 127 different species of trees and shrubs have been planted and evaluated. Many of these accessions show promise for additional testing. Information from this planting has been used to document the cooperative release of the cultivars listed below. These cultivars are currently in large-scale production and use in conservation plantings throughout the Northern Great Plains. Several more releases are anticipated in the near future. Information gathered concerning plant performance assists cooperating nurserymen and plant researchers in determining the range of adaptation of many other accessions/cultivars also included in the test planting.

Cooperative Releases:

Cultivar	Common Name	Year Released
Midwest	Manchurian crabapple	1973
Cardan	Green ash	1979
Oahe	Hackberry	1984
Sakakawea	Silver buffaloberry	1984
Scarlet	Mongolian cherry	1984
Centennial	Cotoneaster	1987
McDermant	Ussurian pear	1990
Canam	Hybrid poplar	1995
Regal	Russian almond	1997
Legacy	Late lilac	1999

A QUARTER CENTURY OF TREE PLANTING TRIALS AT THE MORRIS, MINNESOTA FIELD EVALUATION PLANTING

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Introduction

For more than 100 years, the people of Minnesota have realized the importance of tree planting on the prairie to protect their buildings, livestock, and crops. In the early years, planters used a limited selection of trees for these plantings. As one early publication on farm forestry stated, "It may take several years to show that trees are not adapted to a certain region or situation or soil. The ordinary planter cannot afford to experiment with trees." Though there are many trees and shrubs that are native to Minnesota, people are looking for plants to increase the diversity in their species mix, or they need cultivars with specific characteristics not currently available. Unsuitable characteristics and non-adaptation to the site are two common problems with existing commercial stocks.

When the Bismarck Plant Materials Center (PMC) was established in 1954, Plant Materials Specialist John McDermid, made annual seed collecting trips to the Agriculture Canada Arboretum at Morden, Manitoba. As a result of his collections, many new species of trees and shrubs were made available to soil conservation districts for planting. Starting in the spring of 1978, many of these new selections were planted in the Field Evaluation Planting (FEP) at the West Central Experiment Station (now known as the West Central Research and Outreach Center) at Morris, Minnesota. Since that date, the PMC staff, with the assistance of the research center staff, has annually added new plants. A complete list of all species and seed sources (accessions) that were planted is recorded in Table 1. Many of these did not survive more than a few years. Through annual evaluations over the last 25 years, the PMC staff has helped to find adapted species and cultivars. A complete list of currently surviving plants is shown in Table 2.

Cooperators

The USDA Natural Resources Conservation Service (NRCS), Plant Materials Center, Bismarck, North Dakota; the USDA NRCS Morris Field Office, Morris, Minnesota; and the University of Minnesota, West Central Research and Outreach Center, Morris, Minnesota.

Site Description

The FEP is located at Morris, Minnesota, east of the building site of the West Central Research and Outreach Center. The legal description is NE1/4 Sec. 31, T.125N., R.41W., Stevens County. The site is located in Major Land Resource Area 102A, Rolling Till Prairie. The elevation is close to 1100 feet above sea level.

Soils

The soils at this site are Barnes-Buse loams, 2 to 6 percent slopes, eroded (BbB2). This series consist of deep, well-drained soils formed in loamy calcareous glacial till under prairie grasses on moraines and uplands. For Barnes, the darker colored surface layer is noncalcareous loam 7 inches thick. The subsoil is dark brown and olive-brown loam 12 inches thick, and the substratum is olive-brown loam. The Barnes soil makes up 60 to 70 percent of the mapped area and is in windbreak suitability group 3.

The surface of the Buse soil is very dark gray calcareous loam 7 inches thick. The underlying material is light brownish-gray and light yellowish-brown loam. The Buse loam is in windbreak suitability group 8. This has affected the performance of many plants.

Climate

Climatic data is recorded at the West Central Research and Outreach Center. The mean precipitation is about 24 inches. Since the first trees were planted in 1978, the annual precipitation has varied from a high of 34.10 inches in 1984 to a low of 15.77 inches in 1987. Seventy-five percent of this precipitation falls during the months of April through September. The mean annual temperature is 42 degrees. This site is in Plant Hardiness Zone 4a, with an average annual minimum temperature of -25 to -30 degrees.

Planting Plan

Since 1978, approximately 210 different accessions or seed sources of 127 different species of trees and shrubs have been planted. There can be great differences in performance between different accessions within a species. Only by observing these plants over a number of years, at several locations, is it possible to find the best plants for conservation. Quite a few of these accessions have come from other countries, often via the USDA ARS Plant Introduction Stations and the Morden Arboretum, operated by Agriculture Canada at Morden, Manitoba. The plots of each accession are organized in a systematic design for evaluation and demonstration purposes (Figure 1). The site is divided into three blocks. Block 1 is planted to shrubs; Block 2 is planted to medium-tall trees; while Block 3 is planted to tall trees. In the earlier years of the planting, conifers were planted in Block 4, but they were removed due to poor performance on the Barnes-Buse loams. Each block is arranged in single row, non-replicated plots. Each plot contains 1 to 20 plants of each accession. The spacing in the shrub block is 20 feet between rows and 5 feet between plants. The spacing on the taller trees is also 20 feet between rows, but 10 feet between plants. Similar species and standards of comparison are planted in adjacent plots whenever possible.

Plot Maintenance

A clean planting site was prepared annually by disking. All trees and shrubs were planted by hand in the spring, and for some years, these newly planted materials were hand watered. Now many of the new plantings are mulched with wood chips. However, not all these plants survived. Some died out the first year because they were marginally hardy. Other trees and shrubs did survive for several years, only to succumb to adverse weather, disease, or herbivores. The soils at this site are a limiting factor.

Between 1978 and 2001, the plots were maintained under clean cultivation. A disk was used between the rows, while hand hoeing was done around individual plants. In some of the early years, an animal repellent, Arasan 50, was used to discourage rodents from damaging the tree trunks and lower limbs. Dead trees and broken branches were cut and removed annually for sanitation. All the Russian olive accessions were removed in 1989 due to disease symptoms and poor form. A major renovation was completed in 1997 using a backhoe to remove diseased, dead, and dying plants. The evaluation of the conifer species was discontinued in 1995 due to overall poor performance, but not all of the conifers were physically removed from the site. Most of the maintenance at this site has been done by the staff of the West Central Research and Outreach Center under the direction of the Horticultural Department. The area between the tree rows and existing open blocks was seeded to a native grass mixture (50 percent Bad River blue grama and 50 percent Pierre sideoats grama) in the spring of 2002.

Evaluations and Results

Records have been kept for most of the evaluations made on these plants. An evaluation schedule, based on year of planting, is followed for each plot. Evaluations recorded include height, width, vigor rating, signs of animal browsing, disease, and dieback due to cold or drought. See Table 2 for a record of trees and shrubs surviving. One of the key items is the plant vigor, a measure of plant form and plant health.

A number of the accessions have done very well. Based partly on their performance at the Morris FEP, the plants listed in Table 3 were released as cultivars by the Bismarck Plant Materials Center.

Table 3: Tree and Shrub Releases

Cultivar	Common Name	Year Released
Midwest	Manchurian crabapple	1973
Cardan	Green ash	1979
Oahe	Hackberry	1984
Sakakawea	Silver buffaloberry	1984
Scarlet	Mongolian cherry	1984
Centennial	Cotoneaster	1987
McDermand	Ussurian pear	1990
Canam	Hybrid poplar	1995
Regal	Russian almond	1997
Legacy	Late lilac	1999

Figure 1. Morris Woody Field Evaluation Planting Map

		← N		
BLOCK II MEDIUM TREES		BLOCK I SHRUBS		Row
open	open	<-----	Centennial cotoneaster	1
(leave open) ----->		9063143 t. honeysuckle	Arnolds Red honeysuckle	2
<-----	ND-1731 S. crabapple	9082642 wayfaring tree	9082632 Mongolian peashrub	3
<-----	McDermant pear	<-----	Scarlet Mongolian cherry	4
<-----	Streamco willow	peashrub Sib. dogwood	9069128 r.t. honeysuckle	5
open	open	<-----	Legacy late lilac	6
<-----	ND-21 nannyberry	rugosa rose redleaf rose	ND-170 cotoneaster	7
Libbon willow	Meyer's spruce	leadplant Siberian peach	Euonymus (leave open)	8
9069129 amur chokecherry	9069081 littleleaf linden	black currant bittersweet	ND-3902 sandbar willow	9
<-----	ND-2102 apricot	<-----	Regal Russian almond	10
9082629 big tooth maple	9082630 Norway maple	open Rosetree of China	ND-11 amur honeysuckle	11
9082633 black ash	9082631 Japanese birch	open	Indigo silky dogwood	12
9082639 northern pin oak	9082635 black locust	open	open	13
9076719 Scotch pine	9076718 Scotch pine	open	open	14
9069163 Dahurian larch	9076737 black cherry	open	open	15
9069121 mayday	9076722 European white birch	ND-3744 Korean barberry	chokeberry Konza sumac	16
9076725 smoothbark elm	9069170 English oak	ND-2103 highbush cranberry	Meadowlark forsythia	17
9082610 Siberian larch	9069168 Siberian larch	open	ND-2507 pigmy caragana	18
9082665 speckled alder	9063126 Japanese elm	Hedgeking honeysuckle	9057409 American hazel	19
open	9082666 black birch			20
<-----	Flame amur maple			21
<-----	ND-1752 amur maple			22
<-----	ND-629 amur maple			23
<-----	ND-1873 amur maple			24
ND-686 Pekin lilac	open			25
<-----	Homestead Arnold hawthorn			26
<-----	open			27
<-----roadway----->		<-----roadway----->		

(revised 8/02)

Figure 1. Morris Woody Field Evaluation Planting Map (continued)

		BLOCK III TALL TREES	← N	Row
		<-----	SD-156 green ash	1
		ND-1734 green ash	ND-1753 green ash	2
		<-----	Cardan green ash	3
		<-----	ND-1759 green ash	4
		<-----	ND-647 black ash	5
		9063120 Ohio buckeye	ND-1432 Ohio buckeye	6
		<-----	9057410 hackberry	7
		open	9063148 corktree	8
		9082674 sugar maple	9082668 European ash	9
		(leave open)	Clone C Austree	10
		14272 poplar	14271 poplar	11
		14274 poplar	14273 poplar	12
		9082667 gray birch	Canam hybrid poplar	13
		9076746 Ohio buckeye	9082646 Amur linden	14
		<-----	Oahe hackberry	15
		SD-211 hackberry	SD-75 hackberry	16
		9082650 Soongarica poplar	9082675 Manchurian ash	17
		9063098 black walnut	9076723 Siberian elm	18
		9076724 Russian olive	open	19
		9069166 Russian olive	open	20
		ND-428 black walnut	9054820 Siberian elm	21

Table 1: Woody Planting Record at Morris FEP					
			Year	Year	
<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Planted</u>	<u>Removed</u>	<u>Origin/Source</u>
<i>Abies</i>	9057427	Siberian fir	1983	1992	U of M, St. Paul, MN
<i>Acer ginnala</i>	ND-629	Amur maple	1979		Asia/Morden, MB
	Flame	Amur maple	1980		Asia/PMC, Elsberry, MO
	ND-1873	Amur maple	1979		Asia/Lincoln-Oakes Nursery, Bismarck, ND
	ND-1752	Amur maple	1978		Asia/Gurney's Nursery, Yankton, SD
<i>Acer grandidentatum</i>	9082629	big tooth maple	1999		Lawyer Nursery, Plains, MT
<i>Acer platanoides</i>	9082630	Norway maple	1999		Lawyer Nursery, Plains, MT
<i>Acer saccharinum</i>	ND-3825	silver maple	1983	1987	Burleigh Co., ND
	ND-3886	silver maple	1983	1987	Lawyer Nursery, Plains, MT
<i>Acer saccharum</i>	9063131	sugar maple	1993	1997	SD/Smith Nursery, Charles City, IA
	9082674	sugar maple	2000		Polk Co., MN/Lincoln-Oakes Nursery, Bismarck, ND
<i>Aesculus glabra</i>	ND-1432	buckeye	1978		Morden, MB
	9069120	buckeye	1999		Fort Ransom, ND
	9076746	buckeye	2000		Verona, ND
<i>Alnus rugosa</i>	9082665	speckled alder	2000		Lawyer Nursery, Plains, MT
<i>Amorpha canescens</i>	9082678	leadplant	2002		Lincoln-Oakes Nursery, Bismarck, ND
<i>Amorpha fruticosa</i>	9047236	false indigo	1987	2001	Burleigh Co., ND/Lincoln-Oakes Nursery, Bismarck, ND
	9008041	false indigo	1987	2001	PMC, Aberdeen, ID
<i>Berberis koreana</i>	ND-3744	Korean barberry	1988		Asia/NDSU, Fargo, ND
<i>Betula davurica</i>	9082666	Asian black birch	2001		Asia/Lawyer Nursery, Plains, MT

<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Year Planted</u>	<u>Year Removed</u>	<u>Origin/Source</u>
<i>Betula nigra</i>	9063130	river birch	1993		MN Forestry Assn.
<i>Betula papyrifera</i>	9063129	paper birch	1993	1998	MN Forestry Assn.
<i>Betula pendula</i>	9076722	European white birch	1996		Russia/ARS, Mandan, ND
<i>Betula platyphylla</i>	9082631	Japanese birch	1999		Lawyer Nursery, Plains, MT
<i>Betula populifolia</i>	9082667	gray birch	2000		Lawyer Nursery, Plains, MT
<i>Caragana intermedia</i>	9082632	Mongolian pea shrub	1999		Lawyer Nursery, Plains, MT
<i>Caragana microphylla</i>	9082663	little leaf peashrub	2000		Lawyer Nursery, Plains, MT
<i>Caragana pygmaea</i>	ND-2507	pygmy caragana	1988		Asia/Bottineau, ND
<i>Celastrus scandens</i>	9082712	bittersweet	2002		Lincoln-Oakes Nursery, Bismarck, ND
<i>Celtis occidentalis</i>	Oahe	hackberry	1980		SD/ARS, Mandan, ND
	SD-75	hackberry	1981		Potter Co., SD
	SD-211	hackberry	1981		Sanborn Co., SD
	9057410	hackberry	1988		Denbigh, ND/NDFS, Towner, ND
<i>Cornus alba</i>	9082664	Siberian dogwood	2000		Lawyer Nursery, Plains, MT
<i>Cornus amomum</i>	Indigo	silky dogwood	1983		PMC, Rose Lake, MI
<i>Cornus mas</i>	Redbird	Cornelian dogwood	1988	1992	PMC, Elsberry, MO
<i>Corylus x</i>	9076683	hybrid hazel	1995	1997	Badgersett Nursery, Preston, MN
	9076684	hybrid hazel	1995	1997	Badgersett Nursery, Preston, MN
<i>Corylus americana</i>	9057409	American hazel	1988		Bottineau Co., ND/NDFS, Towner, ND

<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Year Planted</u>	<u>Year Removed</u>	<u>Origin/Source</u>
<i>Cotoneaster integerrimus</i>	ND-170	European cotoneaster	1990		Asia/Kingsbury Co., SD
	ND-177	European cotoneaster	1978		Asia/ARS, Cheyenne, WY
<i>Crataegus</i>	ND-1567	native hawthorn	1988	1999	Wells Co., ND
<i>Crataegus arnoldiana</i>	ND-19	Arnold hawthorn	1984		Morden, MB
<i>Elaeagnus angustifolia</i>	ND-364	Russian olive	1978	1989	Russia/Burleigh Co., ND
	ND-1843	Russian olive	1980	1989	Russia/Morden, MB
	ND-363	Russian olive	1978	1989	Russia/Burleigh Co., ND
	ND-541	Russian olive	1978	1989	Russia/Haakon Co., SD
	King Red	Russian olive	1987	1991	Russia/PMC, Tucson, AZ
	9076724	Russian olive	1996		Russia/ARS, Mandan, ND
	9069166	Russian olive	1996		Volgograd, Russia
	ND-1735	Russian olive	1978	1989	Russia/Lincoln-Oakes Nursery, Bismarck, ND
	ND-1756	Russian olive	1978	1989	Russia/Gurney Nursery, Yankton, SD
	ND-1844	Russian olive	1980	1989	Russia/Morden, MB
<i>Elaeagnus umbellata</i>	Cardinal	autumn olive	1987	1994	China/PMC, Elsberry, MO
	Redwing	autumn olive	1987	1994	China/PMC, Rose Lake, MI
<i>Euonymus bungeanus</i>	9082711	winterberry euonymus	2002		China/Lincoln-Oakes Nursery, Bismarck, ND
<i>Forsythia europea x ovata</i>	Meadowlark	forsythia	1988		Arnold Arboretum/NDSU, Fargo, ND
<i>Fraxinus americana</i>	9063127	white ash	1992	1996	WI/Lincoln-Oakes Nursery, Bismarck, ND
<i>Fraxinus excelsior</i>	9082668	European ash	2000		Europe/Lawyer Nursery, Plains, MT
<i>Fraxinus mandshurica</i>	9082675	Manchurian ash	2000		China/ Lincoln-Oakes Nursery, Bismarck, ND

<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Year Planted</u>	<u>Year Removed</u>	<u>Origin/Source</u>
<i>Fraxinus nigra</i>	ND-647	black ash	1978		Morden, MB
	9063116	black ash	1995	2001	Itasca State Park, MN
	9082633	black ash	1999		Lawyer Nursery, Plains, MT
<i>Fraxinus pennsylvanica</i>	SD-156	green ash	1978		Deuel Co., SD
	ND-1759	green ash	1978		PMC, Bismarck, ND
	ND-1753	green ash	1978		Gurney's Nursery, Yankton, SD
	ND-1734	green ash	1978		Lincoln-Oakes Nursery, Bismarck, ND
	Cardan	green ash	1978		MT/ARS, Mandan, ND
	9063115	green ash	1995	2001	Itasca State Park, MN
<i>Gleditsia triacanthos</i>	ND-1863	honey locust	1982	1996	Brown Co., SD
	ND-1879	honey locust	1980	1999	Woodward, OK
	9063124	honey locust	1995	1996	Codington Co., SD/Big Sioux Nursery
<i>Hippophae rhamnoides</i>	9047238	sea buckthorn	1987	1999	PFRA, Indianhead Nursery, Saskatchewan
<i>Juglans cathayensis</i>	ND-573	Cathay walnut	1978	1983	China/Morden, MB
<i>Juglans mandshurica</i>	ND-548	Manchurian walnut	1978	1983	China/Morden, MB
<i>Juglans nigra</i>	ND-465	black walnut	1980	1983	Morden, MB
	ND-428	black walnut	1985		NDSU, Fargo, ND
	9063098	black walnut	1991		Big Sioux Nursery, Watertown, SD
	ND-1755	black walnut	1978	1980	Gurney's Nursery, SD
<i>Larix laricina</i>	9058862	tamarack	1990	1995	Chippewa Farms, MN
<i>Larix olgensis</i>	9069163	Dahurian larch	2000		China/PMC, Bismarck, ND

<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Year Planted</u>	<u>Year Removed</u>	<u>Origin/Source</u>
<i>Larix sibirica</i>	ND-1729	Siberian larch	1978	1995	Asia/NDFS, Towner, ND
	SL-383-T	Siberian larch	1978	1981	Asia/USFS, Bottineau, ND
	9069168	Siberian larch	2000		Altai region, Russia
	9082610	Siberian larch	2000		Minusinsk, Siberia
<i>Lonicera</i>	ND-26	honeysuckle	1979	1989	Asia/ARS, Mandan, ND
<i>Lonicera maackii</i>	ND-11	Amur honeysuckle	1981		Asia/Morden, MB
	Cling-Red	Amur honeysuckle	1987	1992	Asia/PMC, Elsberry, MO
	Rem-Red	Amur honeysuckle	1988	1994	Asia/PMC, Cape May, NJ
<i>Lonicera tatarica</i>	9069080	Tatarian honeysuckle	1993		Asia/Lee Nursery, Fertile, MN
	9063143	Tatarian honeysuckle	1993		Asia/Schumacher Berry Farm, MN
	9069128	Tatarian honeysuckle	1995		Asia/Big Sioux Nursery, Watertown, SD
<i>Lonicera tatarica sibirica</i>	ND-1750	Tatarian honeysuckle	1978	1992	Asia/Gurney's Nursery, Yankton, SD
	ND-313	Tatarian honeysuckle	1978	1992	Asia/ARS, Cheyenne, WY
	ND-1730	Tatarian honeysuckle	1978	1992	Asia/Lincoln-Oakes Nursery, Bismarck, ND
<i>Lonicera xylosteoides</i>	Hedge King	honeysuckle	1988		Asia/Wedge Nursery, Albert Lea, MN
<i>Lonicera xylosteum mollis</i>	ND-452	honeysuckle	1979	1992	Asia/ARS, Cheyenne, WY
<i>Malus</i>	Magenta	crabapple	1992	2001	PMC, Rose Lake, MI
<i>Malus baccata</i>	ND-1731	Siberian crabapple	1978		Asia/Lincoln-Oakes Nursery, Bismarck, ND
	Red Splendor	Siberian crabapple	1978	1995	Asia/Lee Nursery, Fertile, MN
<i>Malus mandshurica</i>	Midwest	Manchurian crabapple	1978	1997	Asia/Morden, MB
<i>Malus sargentii</i>	Roselow	Sargent's crabapple	1983	1987	PMC, Rose Lake, MI
<i>Morus alba</i>	ND-1170	mulberry	1978	1987	China/Burleigh Co., ND

<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Year Planted</u>	<u>Year Removed</u>	<u>Origin/Source</u>
<i>Morus rubra</i>	ND-2105	red mulberry	1988	1997	Big Stone Co., MN
<i>Phellodendron sachalinense</i>	9063148	corktree	1995		Clay Co., MN shelterbelt
<i>Photinia melanocarpa</i>	323957	chokeberry	1988	2002	Russia/ARS, Ames, IA
<i>Picea abies</i>	ND-1724	Norway spruce	1979	1995	Europe/USFS, Lincoln, NE
	ND-3791	Norway spruce	1980	1995	Europe/U of M, St. Paul, MN
<i>Picea mariana</i>	9058847	black spruce	1989	1990	U of Minnesota
<i>Picea meyeri</i>	9082609	Meyer's spruce	2001		Asia/Itasca Greenhouse, Cohasset, MN
<i>Pinus contorta</i>	9057411	lodgepole pine	1988	1991	Canada/NDFS, Towner, ND
<i>Pinus densiflora</i>	ND-1720	Japanese red pine	1979	1981	Japan/USFS, Lincoln, NE
<i>Pinus halepensis</i> var. <i>eldarica</i>		Aleppo pine	1985	1986	Armenia/California
<i>Pinus nigra</i>	ND-1715	Austrian black pine	1979	1995	Spain/USFS, Lincoln, NE
<i>Pinus nigra caramanica</i>	ND-1714	Crimean pine	1979	1980	Turkey/USFS, Lincoln, NE
<i>Pinus nigra pallasiana</i>	ND-1710	Crimean pine	1979		Turkey/USFS, Lincoln, NE
	ND-1712	Crimean pine	1979	1983	Turkey/USFS, Lincoln, NE
<i>Pinus nigra x densiflora</i>	ND-1716	hybrid pine	1979	1982	USFS, Lincoln, NE
<i>Pinus ponderosa</i>	9057413	ponderosa pine	1988	1991	MT/NDFS, Bottineau, ND
	unknown	ponderosa pine	1981	1995	MT
<i>Pinus rigida</i>	ND-1721	pitch pine	1979	1982	ME/USFS, Lincoln, NE

<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Year Planted</u>	<u>Year Removed</u>	<u>Origin/Source</u>
<i>Pinus sylvestris</i>	ND-1717	Scots pine	1979	1985	Greece/USFS, Lincoln, NE
	ND-1718	Scots pine	1979	1993	Turkey/USFS, Lincoln, NE
	ND-1719	Scots pine	1979	1995	Czechoslovakia/USFS, Lincoln, NE
<i>Pinus sylvestris</i> var. <i>mongolica</i>	9076718	Mongolian Scots pine	1999		China/PMC, Bismarck, ND
	9076719	Mongolian Scots pine	1999		China/PMC, Bismarck, ND
<i>Platanus occidentalis</i>	9069088	sycamore	1993	1995	TEC, Osseo, MN
<i>Populus</i>	14390 (Canam)	hybrid Walker poplar	1990		ARS, Mandan, ND
	14392(Manitou)	hybrid Walker poplar	1990	1994	ARS, Mandan, ND
	9082650	Soongarica poplar	2000		Valley Nursery, Helena, MT
<i>Populus deltoides</i> x <i>nigra</i>	14271	Walker poplar	1990		ARS, Mandan, ND
	14272	Walker poplar	1990		ARS, Mandan, ND
	14273	Walker poplar	1990		ARS, Mandan, ND
	14274	Walker poplar	1990		ARS, Mandan, ND
<i>Prunus</i>	ND-2106	hardy almond	1990	1998	Carl Carlson, Bismarck, ND
	ND-1134	select plum	1985	1999	Hand Co., SD
	9063142	Japanese cherry	1993	1995	Lincoln-Oakes Nursery, Bismarck, ND
<i>Prunus americana</i>	ND-288	native plum	1978	1994	SD/Lincoln-Oakes Nursery, Bismarck, ND
	ND-286	manet plum	1978	1994	Lincoln-Oakes Nursery, Bismarck, ND
	ND-1733	native plum	1978	1994	Lincoln-Oakes Nursery, Bismarck, ND
	ND-1757	native plum	1978	1994	Gurney's Nursery, Yankton, SD
	514677	native plum	1990	1999	PMC, Manhattan, KS
<i>Prunus angustifolia</i>	9049970	chickasaw plum	1990	1991	PMC, Manhattan, KS

<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Year Planted</u>	<u>Year Removed</u>	<u>Origin/Source</u>
<i>Prunus armeniaca</i>	ND-1178	apricot	1978	1985	Asia/Walsh Co., ND
	ND-423	apricot	1978	1995	Asia/Slope Co., ND
	Mantoy	apricot	1978	1999	Asia/ARS, Mandan, ND
	SD-132	apricot	1978	1985	Asia/Brookings, SD
	SD-133	apricot	1978	1985	Asia/Brookings, SD
	SD-134	apricot	1978	1985	Asia/Brookings, SD
	ND-416	apricot	1978	1985	Asia/Burleigh Co., ND
	ND-2102	apricot	1986		Asia/Hand Co., SD
<i>Prunus fruticosa</i>	Scarlet	Mongolian cherry	1978		Asia/Morden, MB
<i>Prunus maackii</i>	9069129	Amur chokecherry	1995		Asia/Big Sioux Nursery, Watertown, SD
<i>Prunus padus</i>	SD-131	mayday	1985	1994	Asia/Moody Co., SD
	9069121	mayday	1996		NLH, Aas, Norway
<i>Prunus pedunculata</i>	ND-606	hardy almond	1978	1986	NDSU, Fargo, ND
<i>Prunus persica</i>	ND-3925	peach	1986	1992	China/Meade Co., SD
	9082713	peach	2002		Lincoln-Oakes Nursery, Bismarck, ND
<i>Prunus pumila besseyi</i>	ND-1327	sandcherry	1978	1987	Mercer Co., ND
<i>Prunus serotina</i>	9076737	black cherry	1997		MN/Lincoln-Oakes Nursery, Bismarck, ND
<i>Prunus spinosa</i>	ND-81	sloe	1978	1991	Morden, MB
<i>Prunus tenella</i>	Regal	Russian almond	1980		ND Game & Fish/Lincoln-Oakes Nursery, Bismarck, ND
<i>Prunus triloba</i>	9082634	rose tree of China	1999		Asia/Lawyer Nursery, Plains, MT

<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Year Planted</u>	<u>Year Removed</u>	<u>Origin/Source</u>
<i>Prunus virginiana</i>	Schubert	chokecherry	1978	1994	ARS, Mandan, ND
	ND-1336	chokecherry	1978	1994	Mercer Co., ND
	ND-1349	chokecherry	1978	1995	Burleigh Co., ND
	ND-1751	chokecherry	1978	1995	Plumfield Nursery Inc., Fremont, NE
	ND-1732	chokecherry	1978	1995	Lincoln-Oakes Nursery, Bismarck, ND
<i>Pseudotsuga menziesii</i>	9057426	Douglas fir	1983	1992	U of M, St. Paul, MN
	ND-1722	Douglas fir	1979	1982	Douglas Co., CO/USFS, Lincoln, NE
<i>Ptelea trifoliata</i>	ND-624	common hoptree	1982	1994	Ramsey Co., ND
<i>Pyrus ussuriensis</i>	McDermand	Ussurian pear	1978		Manchuria/Morden, MB
<i>Quercus bicolor</i>	ND-1842	swamp white oak	1981	1982	Morden, MB
<i>Quercus ellipsoidalis</i>	9082639	pin oak	1999		northern MN/Lincoln-Oakes Nursery, Bismarck, ND
<i>Quercus macrocarpa</i>	9057412	bur oak	1988	2002	Foster Co., ND/NDFS, Towner, ND
	K-1407	bur oak	1990	1992	PMC, Manhattan, KS
<i>Quercus robur</i>	9069089	English oak	1993	1997	TEC, Osseo, MN
	9069170	English oak	1996		Russia/ARS, Mandan, ND
<i>Rhus aromatica</i>	Konza	aromatic sumac	1987		PMC, Manhattan, KS
<i>Rhus trilobata</i>	Bighorn	skunkbush sumac	1979	1993	Bighorn Co., WY
<i>Ribes americanum</i>	9082687	black currant	2001		Big Sioux Nursery, Watertown, SD
<i>Robinia pseudoacacia</i>	ND-3804	black locust	1982	1986	Darby, MT/NDFS, Towner, ND
	9082635	black locust	1999		Lawyer Nursery, Plains, MT

<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Year Planted</u>	<u>Year Removed</u>	<u>Origin/Source</u>
<i>Rosa rubifolia</i>	9082685	red leaf rose	2001		Europe/Lincoln-Oakes Nursery, Bismarck, ND
<i>Rosa rugosa x</i>	Hansen	hedge rose	1978	1992	Asia/Anderson Nursery, SD
	Hansen	hedge rose	2001		Lincoln-Oakes Nursery, Bismarck, ND
<i>Salix</i>	ND-3773	willow	1982	1989	Norman Co., MN
<i>Salix fragilis</i>	370126	crack willow	1982	1991	Russia/ARS, Glenn Dale, MD
<i>Salix humilis</i>	ND-995	prairie willow	1982	1991	ARS, Ames, IA
<i>Salix interior</i> 'Silver Sands'	ND-3902	sandbar willow	1990		Charles City, IA/NDSU, Fargo, ND
<i>Salix matsudana x alba</i>	9058896 (C)	austree	1990		Austree Inc., Pescadero, CA
	9058899	austree	1991	1994	Australia/MN
	9076741	Libbon willow	1996		Stevens Co., MN
<i>Salix pentandra</i>	Mich-433	laurel leaf willow	1982	1989	Europe/PMC, Rose Lake, MI
<i>Salix purpurea</i>	Streamco	purple osier willow	1990		Europe/PMC, Big Flats, NY
<i>Shepherdia argentea</i>	Sakakawea	silver buffaloberry	1978	1989	Morden, MB
<i>Syringa pekinensis</i>	ND-686	Pekin lilac	1979		Asia/Lincoln-Oakes Nursery, Bismarck, ND
<i>Syringa villosa</i>	ND-83	late lilac	1988		China/Morden, MB
<i>Thuja occidentalis</i>	ND-1723	northern white cedar	1979	1981	Canada/USFS, Lincoln, NE
	Mich-1841	northern white cedar	1983	1995	PMC, Rose Lake, MI
	Mich-1468	northern white cedar	1983	1995	PMC, Rose Lake, MI
	ND-3787	northern white cedar	1983	1992	U of M, St. Paul, MN

<u>Scientific Name</u>	<u>Accession</u>	<u>Common Name</u>	<u>Year Planted</u>	<u>Year Removed</u>	<u>Origin/Source</u>
<i>Tilia amurensis</i>	9082646	Amur linden	2000		Siberia/Sue Leake, Grand Forks, ND
<i>Tilia cordata</i>	9069081	little leaf linden	1993	2002	Europe/Lee Nursery, Fertile, MN
<i>Ulmus carpifolia</i>	9076725	smoothbark elm	1996		Russia/ARS, Mandan, ND
<i>Ulmus japonica</i>	9063126	Japanese elm	1992		Manchuria/PFRA, Indianhead, Sask
<i>Ulmus parvifolia</i>	Elsmo	Chinese lacebark elm	1990	1992	Asia/PMC, Elsberry, MO
<i>Ulmus pumila</i>	9016318	Siberian elm	1995	2001	Asia/PMC, Bridger, MT
	9054820	Siberian elm	1995		Asia/PMC, Bridger, MT
	9076723	Siberian elm	1996		Russia/ARS, Mandan, ND
<i>Viburnum lantana</i>	9082642	wayfaring tree	1999		Lincoln-Oakes Nursery, Bismarck, ND
<i>Viburnum lentago</i>	ND-21	nannyberry	1986		ARS, Mandan, ND
	ND-276	nannyberry	1988		Morden, MB
<i>Viburnum opulus</i>	399414	European cranberry	1988		Yugoslavia/ARS, Ames, IA
<i>Vitis riparia</i>	ND-1020	riverbank grape	1978	1987	Morden, MB

Table 2.

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Year of Record: 2002

<u>PLOT</u>	<u>ACCESSION</u>	<u>PLANT</u>	<u>GENUS/SPECIES</u>	<u>TRANS</u>	<u>YR</u>	<u>YR</u>	<u>MATL</u>	<u>NO</u>	<u>NO</u>	<u>PCT</u>	<u>CAN</u>	<u>PLT</u>		
<u>LOCATION</u>	<u>NUMBER</u>	<u>SYMBOL</u>	<u>ORIGIN/SOURCE</u>	<u>DATE</u>	<u>PLT</u>	<u>REC</u>	<u>PLTD</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>VI</u>	<u>(ft)</u>	<u>(ft)</u>	<u>REMARKS</u>
I/01/1-20	'Centennial'	COIN*	cotoneaster	10-May 78	78	PLBR		20	12	60	3	1.4	1.5	
	ND-177		<i>Cotoneaster integerrimus</i>		79				17	85	4	3.5	3.2	
	9005729		USDA, ARS, Cheyenne, WY		80				17	85		5.2	3.4	
	PI-113095		USDA, SCS, PMC, Bismarck, ND		82				17	85		9.7	5.9	
					83				17	85		11.1	6.6	
					84				17	85	2	12.6	7.4	
					87				17	85	2	14.6	9.7	
					92				17	85	1	16.5	9.4	
					97				17	85	1	21.3	12.0	
					02				17	85		24.0	11.0	
I/02/1-10	Arnolds Red 9069080	LOTA	red tatarian honeysuckle	27-Apr 93	93	PLBR		10	10	100	4	0.9	1.2	
			<i>Lonicera tatarica sibirica</i>		94				8	80	5	1.8	2.3	
			Lee Nursery, Fertile, MN		95				10	100	4	2.3	3.5	
					97				10	100	2	5.1	5.9	
					99				10	100	4	5.6	7.0	
					02				10	100	3	6.8	8.4	
I/02/11-20	9063143	LOTA	red tatarian honeysuckle	27-Apr 93	93	PLBR		10	9	90	5	0.9	1.5	
			<i>Lonicera tatarica sibirica</i>		94				9	90	4	1.7	2.4	
			Iowa		95				9	90	5	2.9	3.6	
			Lincoln-Oakes Nursery, Bismarck, ND		97				10	100	2	5.2	5.8	
					99				9	90	3	6.1	6.9	
					02				9	90	3		8.7	
1/03/1-10	9082632	CAIN	Mongolian peashrub	29-Apr 99	99	PLBR		10	9	90	5	1.0	1.3	
			<i>Caragana intermedia</i>		00				9	90	4	2.5	1.8	
			Lawyer Nursery, Plains, MT		01				9	90	5	3.8	3.1	
1/03/11-20	9082642	VILE	wayfaring tree	29-Apr 99	99	PLBR		10	10	100	4	0.7	1.2	
			<i>Viburnum lantana</i>		00				10	100	2	2.0	2.4	
			Lincoln-Oakes Nursery, Bismarck, ND		01				10	100	3	3.3	3.6	

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PLOT	ACCESSION	PLANT	GENUS/SPECIES	TRANS	YR	YR	MATL	NO	NO	PCT	CAN	PLT		
<u>LOCATION</u>	<u>NUMBER</u>	<u>SYMBOL</u>	<u>ORIGIN/SOURCE</u>	<u>DATE</u>	<u>PLT</u>	<u>REC</u>	<u>PLTD</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>VI</u>	<u>(ft)</u>	<u>(ft)</u>	<u>REMARKS</u>
I/04/1-20	'Scarlet'	PRFR2	Mongolian cherry	10-May	78	78	PLBR	20	20	100	3	0.7	1.3	
	ND-3		<i>Prunus fruticosa</i>		79				19	95	4	1.9	2.3	
	9006072		Res. Sta. Morden, MB, Canada		80				20	100		3.0	3.2	
	PI-478003		USDA, SCS, PMC, Bismarck, ND		82				20	100	4	4.7	4.6	
					83				20	100		5.6	4.9	
					84				20	100	3	6.4	5.6	
					87				19	95	1	7.6	6.6	
					92				20	100	1	12.3	7.9	
					97				20	100	2	17.1	10.5	stand weakening
					02				18	90		18.0		variation in height
I/05/1-10	9069128	LOTA	red tatarian honeysuckle	26-Apr	95	95	PLBR	10	10	100	6	1.1	2.2	
			<i>Lonicera tatarica</i>		96				10	100	3	3.1	3.5	blight on 2, mites on 4
			Big Sioux Nursery, Watertown, SD		97				10	100	1	5.3	6.8	very uniform
					99				10	100	2	6.3	9.3	
					01				10	100	3	8.3	1.2	
1/05/10-15	9082664	COAL	Siberian dogwood	02-May	00	00		5	5	100	4	0.8	1.9	browsed
			<i>Cornus alba 'sibirica'</i>		01				5	100	5	1.2	1.3	browsed
			Lawyer Nursery, Plains, MT		02				4	80		1.6	1.9	browsed
1/05/15-20	9082663	CAMI	littleleaf peashrub	02-May	00	00		5	5	100	4	1.3	2.7	
			<i>Caragana microphylla</i>		01				5	100	4	2.0	4.0	
			Lawyer Nursery, Plains, MT		02				5	100	4	3.4	4.6	
I/06/1-20	'Legacy'	SYVI	late lilac	04-May	88	88	PLBR	20	12	60	4	0.5	1.4	
	ND-83		<i>Syringa villosa</i>		89				20	100	3	0.9	1.7	
	9006228		Res. Sta., Morden, CA		90				18	90	4	1.8	2.5	
	PI-540443		Lincoln-Oakes Nursery,		92				20	100	3	3.8	4.0	seed production in all plants
			Bismarck, ND		94				20	100	3	6.3	6.3	
					97				20	100	2	12.1	8.6	snow damage on 9-12,14
					02				19	95		17.3	11.0	variation in height

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PLOT <u>LOCATION</u>	ACCESSION <u>NUMBER</u>	PLANT <u>SYMBOL</u>	GENUS/SPECIES <u>ORIGIN/SOURCE</u>	TRANS	YR	YR	MATL	NO	NO	PCT	CAN	PLT	<u>REMARKS</u>	
				<u>DATE</u>	<u>PLT</u>	<u>REC</u>	<u>PLTD</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>VI</u>	<u>(ft)</u>		<u>(ft)</u>
I/9/11-15	9082687	RIAM	black currant <i>Ribes americanum</i> Big Sioux Nursery, Watertown, SD	01	01	02	PLBR	5	5	100	4	0.8	1.5	
								5	5	100		2.6	2.0	browsed
I/10/1-20	Regal' ND-283 9006079 PI-540442	PRTE*	Russian almond <i>Prunus tenella</i> ND Game & Fish Dept. USDA, SCS, PMC, Bismarck, ND Increase Block	29-Apr	80		PLBR	20	19	95		0.7	1.8	
					81				20	100		1.8	2.7	
					82				17	85	5	2.5	3.3	
					83				17	85		3.5	3.6	
					84				19	95	2	4.8	4.0	
					87				17	85	2	6.6	5.7	
					88				17	85	3	7.1	5.8	
					89				17	85	4	7.9	6.0	variable leaf size, color,
					94				20	100	3	12.0	6.8	form
					99				20	100		15.1	6.7	
I/11/1-10	ND-11 9005993 PI-477998	LOMA6	amur honeysuckle <i>Lonicera maackii</i> Res. Sta., Morden, MB, Canada	28-Apr	81		CONT	10	10	100		0.7	1.1	
					82				10	100	6	0.9	1.2	
					83				9	90		1.6	1.8	
					84				10	100	3	3.7	3.1	
					85				10	100	4	4.9	4.7	
					87				10	100	2	7.3	6.8	
					88				9	90	2	8.9	7.0	excellent, heavy fruit crop,
					90				9	90	3	10.2	7.8	mildew on leaves
					95				9	90	3	14.0	10.4	
					00				9	90		18.1	13.8	
1/11/11-15	9082634	PRTI	rose tree of China <i>Prunus triloba</i> Lawyer Nursery, Plains, MT	29-Apr	99		PLBR	5	4	80	5	1.1	1.7	
					00				4	80	6	2.1	1.7	
					01				2	40	3	4.0	3.6	
I/12/1-10	'Indigo' Mich-765 9004971 PI-468117	COAM2	silky dogwood <i>Cornus amomum</i> USDA, SCS, PMC, Rose Lake, MI	03-May	83		PLBR	10	9	90		0.9	1.8	
					84				10	100	2	3.8	3.1	
					85				10	100	2	5.6	4.9	
					87				10	100	1	10.0	7.4	
					92				10	100	2	13.5	9.3	
					97				10	100	1	21.3	10.5	excellent

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<u>LOCATION</u>	<u>NUMBER</u>	<u>SYMBOL</u>	<u>ORIGIN/SOURCE</u>	<u>DATE</u>	<u>PLT</u>	<u>REC</u>	<u>PLTD</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>VI</u>	<u>(ft)</u>	<u>(ft)</u>	<u>REMARKS</u>
I/13/11-20	9047238	HIRH	sea buckthorn	28-Apr	87	87	PLBR	10	9	90	4	0.7	1.6	
			<i>Hippophae rhamnoides</i>		88				9	90	4	1.1	2.2	
			Indianhead Nursery, CA		89				8	80	2	2.9	3.5	
			Lincoln-Oakes Nursery,		90				10	100	3	3.5	3.7	
			Bismarck, ND		91				10	100	3	4.9	4.9	
					93				8	80	2	8.5	8.1	
					96				8	80	4	13.4	10.3	2 split in half, heavy fruit 5 removed
					99				0	0				
I/14/1-10	9008041	AMFR	false indigo	28-Apr	87	87	PLBR	10	10	100		1.8	1.8	
			<i>Amorpha fruticosa</i>		88				9	90	4	2.7	2.3	
			USDA, SCS, PMC, Aberdeen, ID		89				10	100	3	4.4	3.1	
					91				10	100	2	8.5	4.4	
					93				10	100	4	8.8	5.9	
					96				10	100	6	13.0	6.2	severe quack grass on 9 removed
					01				0	0				
I/14/11-20	9047236	AMFR	false indigo	28-Apr	87	87	PLBR	10	10	100		0.9	1.7	
			<i>Amorpha fruticosa</i>		88				10	100	4	1.9	2.1	
			Lincoln-Oakes Nursery,		89				10	100	5	3.7	2.7	
			Bismarck, ND		91				10	100	4	7.0	3.7	
					93				8	80	3	8.0	4.5	
					96				9	90	5	8.9	5.3	
					01				0	0				removed
I/16/1-5	'Konza' PI-477981	RHAR	aromatic sumac	28-Apr	87	87	CONT	5	5	100		0.8	1.2	
			<i>Rhus aromatica</i>		88				5	100	3	1.2	1.7	
			USDA, SCS, PMC, Manhattan, KS		89				3	60	2	3.1	2.8	
					91				2	40	2	6.6	4.3	
					93				2	40	3	9.8	5.8	
					96				2	40	4	13.5	6.1	
					01				1	20	3	12.0	8.5	

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PLOT	ACCESSION	PLANT	GENUS/SPECIES	TRANS	YR	YR	MATL	NO	NO	PCT	CAN	PLT		
<u>LOCATION</u>	<u>NUMBER</u>	<u>SYMBOL</u>	<u>ORIGIN/SOURCE</u>	<u>DATE</u>	<u>PLT</u>	<u>REC</u>	<u>PLTD</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>VI</u>	<u>(ft)</u>	<u>(ft)</u>	<u>REMARKS</u>
I/16/6-10	PI-323957	PHME13	chokeberry	04-May	88	88	CONT	5	3	60	4	0.2	0.6	
			<i>Photinia melanocarpa</i>			89			5	100	3	1.0	1.2	
			P.I. Sta., Ames, IA			91			5	100	4	2.0	1.7	
			USDA, SCS, PMC, Bismarck, ND			92			5	100	5	2.5	2.1	
						94			5	100	2	4.5	3.7	
						97			4	80	4	5.3	4.5	
						02			0	0				
I/16/11-20	ND-3744 9019577	BEKO	Korean barberry	04-May	88	88	CONT	10	0	0				
			<i>Berberis koreana</i>			89			10	100	4	0.7	0.9	
			NDSU			90			10	100	3	1.4	2.0	
			McKenzie FEP, ND			92			10	100	4	3.5	3.0	
						94			10	100	3	4.5	4.8	
						97			10	100	3	6.8	5.7	
						02			10	100		10.5	8.5	
I/17/1-10	'Meadowlark' 9005886	FOOV	forsythia	04-May	88	88	CONT	10	9	90	4	1.2	1.4	
			<i>Forsythia ovata x europaea</i>			89			10	100	1	3.1	2.6	
			P.I. Sta., Ames, IA			90			9	90	2	4.4	4.2	
			Lincoln-Oakes Nursery, Bismarck, ND			92			9	90	2	6.0	6.6	
						94			9	90	1	9.1	7.8	
						97			10	100	1	14.3	9.5	very uniform
						02			9	90	2	16.0	11.0	uniform
I/17/11-20	ND-2103 PI-399414	VIOP	highbush cranberry	04-May	88	88	POTD	10	0	0				
			<i>Viburnum opulus</i>			89			8	80	3	0.7	1.0	
			P.I. Sta., Ames, IA			90			5	50	3	1.7	2.2	
			NDSU, Exp. Sta., Dickinson, ND			92			4	40	3	3.6	4.3	
						94			4	40	4	6.5	6.4	
						97			4	40	1	12.0	8.0	
						02			4	40	2	15.0	11.8	

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PLOT	ACCESSION	PLANT	GENUS/SPECIES	TRANS	YR	YR	MATL	NO	NO	PCT	CAN	PLT		
<u>LOCATION</u>	<u>NUMBER</u>	<u>SYMBOL</u>	<u>ORIGIN/SOURCE</u>	<u>DATE</u>	<u>PLT</u>	<u>REC</u>	<u>PLTD</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>VI</u>	<u>(ft)</u>	<u>(ft)</u>	<u>REMARKS</u>
I/18/1-10	ND-2507 9047228	CAPY	pigmy caragana <i>Caragana pygmaea</i> NDFS, Bottineau, ND USDA, SCS, PMC, Bismarck, ND	04-May	88	88	POTD	10	9	90	7	0.2	0.5	
						89			6	60	5	0.6	0.8	
						90			8	80	3	0.9	1.2	
						92			7	70	3	2.8	2.3	
						94			7	70	3	4.2	3.6	
						97			7	70	3	6.4	4.3	
						02			4	40	4	7.5	5.3	
I/19/1-10	9057409	COAM	American hazel <i>Corylus americana</i> Turtle Mtns., Bottineau Co., ND NDFS	04-May	88	88	PLBR	10	1	10	9	0.2	1.1	
						89			8	80	4	0.6	1.1	
						90			6	60	5	1.1	1.2	
						92			6	60	3	2.0	2.0	
						94			6	60	3	4.1	3.8	
						97			6	60	1	7.0	5.8	
						02			6	60	4	11.5	8.5	
I/19/11-20	'Hedge King' 9057407	LOXY	honeysuckle <i>Lonicera xylosteoides</i> Wedge Nursery, Albert Lea, MN	04-May	88	88	PLBR	10	8	80	7	0.5	0.9	
						89			9	90	5	0.7	1.0	
						90			8	80	3	1.1	1.2	
						92			8	80	3	1.5	1.8	
						94			8	80	5	1.8	2.3	
						97			8	80	1	2.4	3.2	
						02			5	50	5	3.8	5.6	
II/03/1-10	ND-1731 9006001	MABA	Siberian crabapple <i>Malus baccata</i> Lincoln-Oakes Nursery, Bismarck, ND	10-May	78	78	PLBR	10	10	100	5	1.0	2.2	standard
						79			10	100	3	2.2	3.1	
						80			10	100		3.9	5.0	
						82			10	100		5.5	8.0	
						83			9	90		6.2	8.7	fire blight
						84			9	90	7	8.1	10.4	
						87			9	90	4	11.2	14.2	
						88			9	90	4	13.1	13.9	
						92			9	90	4	16.7	15.4	
						97			9	90	1	27.2	19.7	
						02			9	90	3	32.0	28.0	1,2 medium red apple, rest have small yellow apple

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<u>LOCATION</u>	<u>NUMBER</u>	<u>SYMBOL</u>	<u>ORIGIN/SOURCE</u>	<u>DATE</u>	<u>PLT</u>	<u>REC</u>	<u>PLTD</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>VI</u>	<u>(ft)</u>	<u>(ft)</u>	<u>REMARKS</u>
II/04/1-10	'McDermard'	PYUS	Ussurian pear	10-May	78	78	PLBR	10	10	100	5	0.7	2.0	
	ND-14		<i>Pyrus ussuriensis</i>			79			10	100	5	1.6	2.6	
	9006095		Harbin Manchuria/Res. Sta.			80			10	100		2.2	4.1	
	PI-478004		Morden, MB, Canada			82			10	100		2.9	5.2	
			USDA, SCS, PMC, Bismarck, ND			83			6	60		4.0	6.9	
						84			6	60		5.0	8.4	
						87			6	60	5	7.9	11.9	
						88			6	60	3	11.6	13.9	
						92			6	60	3	16.3	16.4	
						97			6	60	1	24.6	23.0	
						02			6	60	1	26.0	26.0	
II/05/1-10	'Streamco'	SAPU2	purpleosier willow	01-May	90	90	PLBR	10	10	100	3	5.2	2.6	
	434309		<i>Salix purpurea</i>			91			10	100	3	7.5	4.1	
			USDA, SCS, PMC, Big Flats, NY			92			10	100	4	10.7	8.3	tipping by deer
						94			10	100	2	17.1	12.1	
						96			10	100		9.5	15.4	
						99			10	100	2	22.0	17.7	
II/07/1-10	ND-21	VILE	nannyberry	29-Apr	86	86	PLBR	10	10	100		0.8	1.5	
	9034900		<i>Viburnum lentago</i>			87			10	100	3	1.4	2.9	
			USDA, ARS, Mandan, ND			88			10	100	3	2.1	3.8	
						90			10	100	3	4.5	5.0	
						92			10	100	3	5.4	6.2	some suckering on all
						95			10	100	2	7.7	7.8	
						00			10	100	3	10.5	10.1	mildew
II/8/1-5	9082609		Meyer's spruce	01	01	01	CONT	5	4	80	5	0.5	0.7	
			<i>Picea meyeri</i>			02			4	80	2	0.7	0.9	
			Itasca Greenhouse, Inc.											
II/08/6-10	9076741		Libbon willow	30-Apr	96	96	HDCU	5	5	100	4	2.6	2.4	severe deer browse
			<i>Salix matsudana</i> x			97			5	100	9	1.9	2.5	
			George Libbon, Stevens Co., MN			98			3	60	7	2.7	3.8	
						00			1	20	2	13.4	22.3	
						02			1	20	3	18.0	26.0	compact growth

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II/09/1-5	9069081	TICO	littleleaf linden <i>Tilia cordata</i> Lee Nursery, Fertile, MN	27-Apr 93	93	PLBR	5	5	100	4	0.4	0.7		
					94			5	100	6	0.8	1.2		
					95			5	100	3	1.1	1.3		
					97			5	100	5	1.0	1.2	poor growth, severe browsing	
					99			2	40	8	1.0	1.1	browsed	
					02			0	0					
II/09/6-10	9069129	PRMA	amur chokecherry <i>Prunus maackii</i> Big Sioux Nursery, Watertown, SD	26-Apr 95	95	PLBR	5	5	100	3	0.9	2.0		
					96			4	80	3	1.3	2.4	deer browse on all	
					97			4	80	4	1.6	3.1	browsed	
					99			3	60	5	2.0	3.6	browsed	
					01			3	60	4	5.0	8.6		
II/10/1-10	ND-2102 9036029	PRAR3	apricot <i>Prunus armeniaca</i> Hand Co., SD	29-Apr 86	86	PLBR	10	10	100		1.2	1.6		
					87			10	100	3	2.5	3.1		
					88			10	100	5	3.2	4.3		
					90			10	100	3	5.9	7.1		
					92			10	100	4	9.2	11.3	canker, deer browse on all	
					95			10	100	3	13.9	14.4		
					00			8	80	5	18.4	15.1		
II/11/1-5	9082630	ACPL	Norway maple <i>Acer platanoides</i> Lawyer Nursery, Plains, MT	29-Apr 99	99	PLBR	5	5	100	4	0.2	1.3		
					00			5	100	6	0.7	0.9		
					01			5	100	7	0.5	0.7		
II/11/6-10	9082629	ACGR3	big tooth maple <i>Acer grandidentatum</i> Lawyer Nursery, Plains, MT	29-Apr 99	99	PLBR	5	5	100	6	0.2	0.7		
					00			1	20		0.4	0.3		
					01			1	20		0.5	0.8		
II/12/1-5	9082631	BEPLJ	Japanese birch <i>Betula platyphylla japonica</i> Lawyer Nursery, Plains, MT	29-Apr 99	99	PLBR	5	5	100	3	0.7	2.6		
					00			5	100	3	3.3	4.4		
					01			5	100	2	5.7	7.5		
II/12/6-10	9082633	FRNI	black ash <i>Fraxinus nigra</i> Lawyer Nursery, Plains, MT	29-Apr 99	99	PLBR	5	5	100	5	0.2	0.9		
					00			4	80	6	0.6	1.1		
					01			4	80	8	0.7	1.6		

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II/13/1-5	9082635	ROPS	black locust	29-Apr	99	99	PLBR	5	5	100	3	2.4	4.2	
			<i>Robinia pseudoacacia</i>			00			5	100	5	2.7	3.9	
			Lawyer Nursery, Plains,MT			01			5	100	6	3.8	4.5	
II/13/6-10	9082639	QUEL	northern pin oak	29-Apr	99	99	PLBR	5	5	100	5	0.2	1.0	
			<i>Quercus ellipsoidalis</i>			00			4	80	4	0.5	0.7	
			Lincoln-Oakes Nurseries, Bismarck, ND			01			4	80	7	0.6	0.8	
II/14/1-5	9076718	PISYM	Scotch pine	29-Apr	99	99	CONT	5	5	100	3	0.7	1.2	
			<i>Pinus sylvestris</i> var. <i>mongolica</i>			00			5	100	3	1.5	1.8	
			USDA, NRCS, PMC, Bismarck, ND			01			5	100	2	2.5	3.0	
II/14/6-10	9076719	PISYM	Scotch pine	29-Apr	99	99	CONT	5	5	100	2	1.0	1.3	
			<i>Pinus sylvestris</i> var. <i>mongolica</i>			00			5	100	3	1.6	1.9	
			USDA, NRCS, PMC, Bismarck, ND			01			5	100	2	2.3	2.9	
II/15/1-5	9076737	PRSE	black cherry	12-May	97	97	PLBR	5	4	80	8	0.3	0.5	
			<i>Prunus serotina</i>			98			2	40	8	0.8	0.8	
			Apple Valley FEP			99			1	20		1.8	2.3	
			Lincoln-Oakes Nursery, Bismarck, ND			00			1	20	5	4.1	4.3	
						01			1	20		5.5	6.5	
II/15/6-10	9069163	LARIX	Dahurian larch	02-May	00	00		5	5	100	7	0.8	1.1	
			<i>Larix olgensis</i>			01			4	80	6	0.9	1.6	
			USDA, NRCS, PMC, Bismarck, ND			02			3	60	2	1.5	2.0	
II/16/1-5	9076722	BEPE3	European white birch	30-Apr	96	96	PLBR	5	5	100	3	2.4	2.8	
			<i>Betula pendula</i>			97			5	100	2	3.5	4.6	
			Russia			98			4	80	3	7.0	9.2	
			USDA, ARS, Mandan, ND			00			5	100	2	10.2	15.8	
						02			5	100	3	16.0	21.0	
II/16/6-10	9069121	PRPA5	mayday	30-Apr	96	96	CONT	5	5	100	4	0.5	0.9	
			<i>Prunus padus</i>			97			5	100	3	0.8	1.2	
			Norway			98			5	100	7	1.1	1.2	
			USDA, NRCS, PMC, Bismarck, ND			00			2	40	3	2.8	3.9	
						02			2	40	4	4.2	6.6	

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II/20/6-10	514677	PRAM	American plum	01-May	90	90	PLBR	5	5	100	3	1.0	1.8	
			<i>Prunus americana</i>			91			4	80	5	1.9	2.7	
			USDA, SCS, PMC, Manhattan, KS			92			5	100	3	2.8	3.2	
						94			4	80	5	3.4	4.3	
						96			3	60	6	5.5	5.6	
						99			0	0				gone
II/21/1-10	'Flame' MI-891 9005157	ACGI	amur maple	29-Apr	80	80	PLBR	10	10	100	5	2.8	3.3	
			<i>Acer ginnala</i>			81			10	100		4.7	4.6	
			USDA, SCS, PMC, Elsberry, MO			82			10	100		6.5	6.0	
						83			10	100		7.0	6.3	
						84			9	90	4	12.2	8.6	chlorosis
						87			8	80	2	16.8	12.9	
						92			8	80	3	22.2	15.8	
						97			7	70	2	26.2	18.4	
						02			5	50	4	31.0	23.5	
II/22/1-10	ND-1752 9005646	ACGI	amur maple	23-May	78	78	PLBR	10	9	90	5	0.6	1.2	standard
			<i>Acer ginnala</i>			79			8	80	4	1.9	2.6	
			Gurney Seed & Nursery Co., Yankton, SD			80			10	100	6	3.2	3.4	
						82			8	80		8.1	7.0	
						83			8	80		11.0	8.1	
						84			8	80	2	12.9	10.5	chlorosis
						87			8	80	2	16.5	13.1	
						92			8	80	2	20.4	15.2	
						97			8	80	4	20.8	20.0	
						02			6	60	5	16.3	17.7	
II/22/11-20	ND-629 9005645 PI-477992	ACGI	amur maple	14-May	79	79	PLBR	10	10	100	3	0.9	1.8	
			<i>Acer ginnala</i>			80			10	100	5	2.2	3.5	
			Res. Sta. Morden, MB, Canada			81			10	100		4.3	5.1	
						83			10	100		7.2	7.1	
						84			9	90	3	12.5	9.7	
						85			9	90	3	13.5	10.7	chlorosis
						87			9	90	3	16.9	13.7	
						93			9	90	3	21.2	17.3	
						98			9	90	5	23.7	20.2	

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II/23/1-10	ND-1873 9005648	ACGI	amur maple <i>Acer ginnala</i> Lincoln-Oakes Nursery, Bismarck, ND	15-May 79	79	PLBR	10	9	90	3	0.7	1.4		
					80			10	100	6	1.2	2.3		
					81			10	100		2.2	0.3		
					83			10	100		3.8	3.7		
					84			9	90	4	6.2	5.2		
					85			8	80	6	8.0	6.5		
					87			8	80	5	9.9	9.1		
					88			8	80	4	9.9	8.8		
					93			8	80	4	14.3	13.2		
					98			8	80	6	14.2	14.7		
II/24/1-10	ND-686 9006225 PI-478008	SYAMJ*	pekin lilac <i>Syringa pekinensis</i> Res. Sta., Morden, MB, Canada USDA, SCS, PMC, Bismarck, ND	14-May 79	79	PLBR	10	9	90	4	0.5	1.0		
					80			10	100	7	0.6	1.0		
					81			9	90		1.2	1.3		
					83			9	90		2.5	2.5		
					84			9	90	4	4.0	3.2		
					85			6	60	4	6.6	5.4		
					88			6	60		8.9	8.0		
					93			6	60	2	15.7	13.5		
					98			6	60	3	17.4	14.4		
II/26/1-10	ND-19 9005731	CRAR	Arnold hawthorn <i>Crataegus arnoldiana</i> Res. Sta., Morden, MB, Canada	01-May 84	84	CONT	10	10	100	3	0.5	1.0		
					85			10	100	3	0.8	1.3		
					86			10	100		1.1	1.7		
					87			10	100	3	1.4	2.1		
					88			10	100	5	1.6	2.8		
					90			10	100	4	2.9	4.1		
					93			10	100	4	4.5	7.0		
					98			10	100	6	6.7	9.8		
II/27/1-10	ND-1134 9047203	PRAM	hardy plum <i>Prunus americana</i> Miller, SD USDA, SCS, PMC, Bismarck, ND	30-Apr 85	85	PLBR	10	9	90	5	0.9	1.9		
					86			10	100		1.6	2.6	mech. damage	
					87			10	100	4	3.6	4.5		
					89			10	100	2	6.1	5.9		
					91			10	100	4	7.3	7.1		
					94			9	90	6	10.7	8.8		
					99			0	0				removed	

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III/01/1-10	SD-156 9005890	FRPE	green ash	10-May 78	78	PLBR	10	8	80	3	0.8	2.5		
			<i>Fraxinus pennsylvanica</i>		79		10	100	5	2.3	2.7			
			Deuel Co., Clear Lake, SD		80		10	100		2.7	4.7			
					82		10	100		6.8	8.9			
					83		10	100		6.5	9.9			
					84		10	100		8.3	12.4			
					87		10	100	2	11.6	18.2			
					92		10	100	2	15.7	23.8			
					97		10	100	1	24.9	31.3			
					02		10	100	3	32.0	46.0			
III/02/1-5	ND-1753 9005892	FRPE	green ash	10-May 78	78	PLBR	5	5	100	2	0.9	2.3	standard	
			<i>Fraxinus pennsylvanica</i>		79		5	100	5	2.3	3.2			
			Gurney Seed & Nursery Co., Yankton, SD		80		5	100		3.2	4.9			
					82		5	100		5.8	8.7			
					83		5	100		5.7	9.8			
					84		5	100		7.3	12.0			
					87		5	100	2	10.7	18.6			
					92		5	100	3	14.2	24.0			
					97		5	100	2	24.0	32.2			
					02		4	80	4	30.0	45.0			
III/02/6-10	ND-1734 9005891	FRPE	green ash	10-May 78	78	PLBR	5	5	100	3	0.8	2.0	standard	
			<i>Fraxinus pennsylvanica</i>		79		5	100	5	1.7	2.4			
			Lincoln-Oakes Nursery, Bismarck, ND		80		5	100		2.1	4.0			
					82		5	100		5.1	8.4			
					83		5	100		4.4	9.4			
					84		5	100		6.2	12.0			
					87		5	100	3	10.6	18.2			
					92		5	100	1	14.6	23.7			
					97		5	100	3	17.4	30.0			
					02		5	100	3	30.0	46.0			

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III/03/1-10	'Cardan'	FRPE	green ash	10-May	78		PLBR	10	10	100	2	0.7	2.3	
	MDN-12002		<i>Fraxinus pennsylvanica</i>		79				10	100	5	1.9	3.2	
	9005895		Carlyle, MT		80				10	100		2.7	4.8	
	PI-469226		USDA, ARS, Mandan, ND		82				10	100		5.8	8.7	
					83				10	100		5.1	9.7	
					84				10	100		6.5	11.5	
					87				10	100	3	11.3	17.7	
					92				10	100	2	15.4	23.5	
					97				10	100	3	17.7	30.1	
					02				10	100	3	30.0	46.0	
III/04/1-10	ND-1759	FRPE	green ash	10-May	78		PLBR	10	10	100	2	0.8	2.2	
	9005893		<i>Fraxinus pennsylvanica</i>		79				10	100	6	1.7	2.7	
			PM-SD-156X MDN-12002		80				10	100		2.4	4.4	
			USDA, SCS, PMC, Bismarck, ND		82				10	100		3.9	7.6	
					83				9	90		4.7	9.1	
					84				9	90		5.8	11.3	regrowth on 5
					87				9	90	3	10.6	16.9	
					92				9	90	1	14.4	23.5	
					97				9	90		17.9	31.2	
					02				9	90	3	30.0	46.0	
III/05/1-10	ND-647	FRNI	black ash	10-May	78		PLBR	10	8	80	5	0.5	1.0	
	9005887		<i>Fraxinus nigra</i>		79				9	90	9	0.8	0.9	
			Res. Sta. Morden, MB, Canada		80				9	90	7	0.7	1.3	
					82				8	80		2.2	3.7	
					83				8	80		2.7	4.6	
					84				6	60		2.4	7.3	
					87				6	60	3	4.6	12.1	
					92				5	50	2	10.1	20.0	
					97				5	50	3	18.2	25.5	
					02				5	50	3	25.0	40.0	

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III/06/1-10	ND-1432	AEGL	Ohio buckeye	10-May	78	78	PLBR	10	7	70	7	0.3	0.7	
	9005658		<i>Aesculus glabra</i>		79				1	10	9	0.7	0.7	
			Res. Sta., Morden, MB, Canada		80				1	10	5	0.7	1.0	
					82				1	10		2.0	3.1	
					83				1	10		1.6	4.4	
					84				1	10		2.3	5.7	
					87				1	10	2	5.9	9.8	
					92				1	10	1	11.6	13.6	
					97				1	10	2	15.1	16.2	
					02				1	10	2	20.0	20.0	
III/06/6-10	9063120	AEGL	Ohio buckeye	29-Apr	99	99	CONT	5	5	100	7	0.2	0.8	
			<i>Aesculus glabra</i>		00				2	40	8	0.1	0.4	
			USDA, SCS, PMC, Bismarck, ND		01				1	20	8	0.8	1.0	
III/07/1-10	9057410	CEOC	hackberry	04-May	88	88	CONT	10	10	100	5	0.6	1.0	
			<i>Celtis occidentalis</i>		89				9	90	5	0.6	0.9	browsing
			Bottineau Co., ND		90				8	80	4	1.1	1.6	
			NDFS		92				8	80	5	1.2	1.8	
					94				8	80	4	1.6	2.8	
					97				7	70	6	1.6	2.1	deer browse on all
					02				7	70	5	3.5	4.4	browsed heavy
III/08/1-5	9063148	PHSA	corktree	26-Apr	95	95	CONT(P)	5	5	100	4	0.2	1.0	
			<i>Phellodendron sachalinense</i>		96				5	100	3	3.0	3.2	deer browse on 1
			Clay Co., MN		97				5	100	1	4.3	5.0	
					99				5	100	4	11.4	8.8	
					01				5	100	3	14.5	12.7	
III/08/6-10	9063116	FRNI	black ash	26-Apr	95	95	CONT(P)	5	5	100	3	0.2	1.3	
			<i>Fraxinus nigra</i>		96				5	100	3	0.2	1.3	
			Itasca State Park, MN		97				3	60	6	0.4	1.5	
					99				1	20		0.5	2.8	
					01				0	0				removed

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III/09/1-10	9057412	QUMA	bur oak	04-May	88	88	CONT	10	8	80		0.4	1.0	
			<i>Quercus macrocarpa</i>			89			10	100	5	0.3	0.9	
			Foster Co., ND			90			9	90	6	0.3	0.8	
			NDFS			92			8	80	3	0.9	1.2	
						95			8	80	4	0.9	2.1	deer browse on all
						97			1	20	9	0.3	0.7	
						02			0	0				gone
III/9/1-5	9082668	FREX	European ash	02-May	00	00	CONT	5	5	100	6	0.6	2.1	
			<i>Fraxinus excelsior</i>			01			5	100	6	1.1	1.8	browsed
			Lawyer Nursery, Plains, MT			02			5	100	5	1.8	2.8	browsed
III/9/6-10	9082674	ACSA	sugar maple	02-May	00	00	CONT	5	5	100	8	0.3	1.1	
			<i>Acer saccharum</i>			01			5	100	9	0.2	1.2	
			Lincoln-Oakes Nursery, Bismarck, ND			02			2	40	8	0.5	0.5	
III/10/1-5	9058896		Austree	01-May	90	90	PLBR	5	2	40	3	1.8	4.1	
	Clone C		<i>Salix matsudana x alba</i>			91			3	60	4	2.7	5.2	
			Austree, Inc., Pescadero, CA			92			3	60	3	4.1	7.7	
						94			3	60	6	9.2	13.5	
						97			2	40	2	19.8	30.8	
						99			2	40	2	23.1	39.4	
III/11/1-5	9058869	PDXP8	poplar	01-May	90	90	PLBR	5	5	100	3	2.1	4.9	
	14271		<i>Populus deltooides x P. nigra</i>			91			5	100	3	4.4	7.3	
	'Italica' #78102		USDA, ARS, Mandan, ND			92			5	100	3	5.8	10.3	
			Lincoln-Oakes Nursery, Bismarck, ND			94			5	100	3	10.6	18.8	
						96			5	100	3	14.0	30.4	
						99			5	100	2	15.1	44.9	
III/11/6-10	9058870	PDXP8	poplar	01-May	90	90	PLBR	5	5	100	3	3.1	5.0	
	14272		<i>Populus deltooides x P. nigra</i>			91			5	100	5	4.1	6.5	
	'Italica' #78101		USDA, ARS, Mandan, ND			92			5	100	5	5.9	9.8	
			Lincoln-Oakes Nursery, Bismarck, ND			94			4	80	4	10.0	17.0	
						96			4	80	4	13.6	24.4	
						99			4	80	3	14.8	42.6	

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III/11/6-10	9058870	PDXP8	poplar	01-May	90	90	PLBR	5	5	100	3	3.1	5.0	
	14272		<i>Populus deltooides x P. nigra</i>		91				5	100	5	4.1	6.5	
	'Italica' #78101		USDA, ARS, Mandan, ND		92				5	100	5	5.9	9.8	
			Lincoln-Oakes Nursery, Bismarck, ND		94				4	80	4	10.0	17.0	
					96				4	80	4	13.6	24.4	
					99				4	80	3	14.8	42.6	
III/12/1-5	9058871	PDXP8	poplar	01-May	90	90	PLBR	5	5	100	2	2.8	5.1	
	14273		<i>Populus deltooides x P. nigra</i>		91				5	100	3	6.0	9.6	
	'Italica' #7899		USDA, ARS, Mandan, ND		92				5	100	3	9.0	13.7	
			Lincoln-Oakes Nursery, Bismarck, ND		94				5	100	3	15.3	22.2	
					96				5	100	3	17.4	33.4	
					99				5	100	2	19.0	45.9	
III/12/6-10	9058872	PDXP8	poplar	01-May	90	90	PLBR	5	5	100	3	3.7	4.6	
	14274		<i>Populus deltooides x P. nigra</i>		91				5	100	3	7.5	9.1	
	'Italica' #7873		USDA, ARS, Mandan, ND		92				5	100	3	8.5	10.4	
			Lincoln-Oakes Nursery, Bismarck, ND		94				5	100	5	12.7	18.2	
					96				5	100	5	15.5	26.8	leaf spot on 1
					99				5	100		14.4	40.3	
III/13/1-5	9058873	POPUL	poplar	01-May	90	90	PLBR	5	5	100	4	3.1	4.2	
	14390		<i>Populus</i>		91				5	100	5	6.0	8.8	
	Canam		USDA, ARS, Mandan, ND		92				5	100	4	5.6	9.7	
			Lincoln-Oakes Nursery, Bismarck, ND		94				3	60	6	9.4	19.2	
					96				3	60	6	11.2	24.0	
					99				3	60	4	12.0	36.5	
III/13/6-10	9082667	BEPO	gray birch	02-May	00	00	CONT	5	2	20	6	0.4	2.4	
			<i>Betula populifera</i>		01				2	40	8	0.3	1.3	
			Lawyer Nursery, Plains, MT		02				1	20	6	1.0	1.5	
III/14/1-5	9082646	TIAM	Amur linden	02-May	00	00	CONT	5	4	80	6	0.7	1.5	
			<i>Tilia amurensis</i>		01				5	100	8	0.5	1.2	
			Sue Leake, Grand Forks, ND		02				4	80	8	0.5	0.5	winter dieback

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III/14/6-10	9076746	AEGL	Ohio buckeye	02-May	00	00	CONT	5	5	100	7	0.3	0.7						
			<i>Aesculus glabra</i>																
			USDA, NRCS, PMC, Bismarck, ND																
III/15/1-10	'Oahe' MDN-12003 9005725 PI-476982	CEOC	hackberry	29-Apr	80	80	PLBR	10	10	100	6	0.4	1.9						
			<i>Celtis occidentalis</i>																
			USDA, ARS, Mandan, ND																
III/16/1-5	SD-75 9005713	CEOC	hackberry	28-Apr	81	81	PLBR	5	5	100		0.7	1.8						
			<i>Celtis occidentalis</i>																
			Potter Co., SD																
III/16/6-10	SD-211 9005714	CEOC	hackberry	28-Apr	81	81	PLBR	5	4	80		0.5	0.8						
			<i>Celtis occidentalis</i>																
			Sanborn Co., SD																
III/17/1-5	9082675	FRMA	Manchurian ash	02-May	00	00	CONT	5	5	100	7	0.4	1.3						
			<i>Fraxinus mandshurica</i>																
			Lincoln-Oakes Nursery, Bismarck, ND																

plt 2 stunted, deer browse

Plt 7 broken down

heavily browsed
browsed

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III/17/6-10	9082650	POPUL	Soongarica poplar <i>Populus</i> Valley Nursery, Helena, MT	02-May	00	00	CONT	5	4	80	4	1.1	1.8	
						01			5	100	6	1.6	2.7	
						02			5	100	5	2.2	3.5	
III/18/1-5	9076723	ULPU	Siberian elm <i>Ulmus pumila</i> USSR USDA, ARS, Mandan, ND	30-Apr	96	96	PLBR	5	5	100	3	2.3	2.5	deer browse on all
						97			5	100	3	3.6	3.6	deer browse on all
						98			5	100	5	5.7	5.4	
						00			2	20	3	17.1	13.5	
						02			2	40	3	24.5	19.0	
III/18/6-10	9063098	JUNI	black walnut <i>Juglans nigra</i> Big Sioux Nursery, Watertown, SD	21-May	91	91	PLBR	5	5	100	5	0.9	1.8	
						92			5	100	6	0.8	1.8	
						93			5	100	6	0.9	1.6	
						94			4	80	3	3.3	3.2	
						95			4	80	4	3.0	3.4	
						97			4	80	5	5.5	5.2	poor site
						00			4	80	4	11.1	10.0	
III/19/1-5	9063115	FRPE	green ash <i>Fraxinus pennsylvanica</i> Itasca State Park, MN	26-Apr	95	95	CONT(S)	5	5	100	7	0.2	1.1	
						96			5	100	4	0.8	1.3	
						97			4	80	6	0.5	1.4	deer browse on all,
						99			3	60	8	0.3	1.1	severe on 1,2
						01			0	0				removed
III/19/6-10	9076724	ELAN	Russian olive <i>Elaeagnus angustifolia</i> USSR	30-Apr	96	96	PLBR	5	5	100	3	4.6	3.8	
						97			5	100	1	7.6	6.2	
						98			5	100		10.5	8.7	
						00			5	100	4	14.6	14.3	
						02			4	80	4	18.0	17.0	
III/20/1-5	9016318	ULPU	Siberian elm <i>Ulmus pumila</i> USDA, NRCS, PMC, Bridger, MT	26-Apr	95	95	PLBR	5	5	100	4	1.2	1.4	deer browse on all
						96			5	100	4	1.2	1.4	deer browse on all
						97			5	100	3	5.9	3.5	mod.-sev. deer browse on all
						99			5	100	5	9.5	8.5	browsed
						01			0	0				removed

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III/20/6-10	9069166	ELAN	Russian olive	30-Apr	96	96	PLBR	5	5	100	3	1.8	2.6		
			<i>Elaeagnus angustifolia</i>			97				5	100	4	3.4	4.0	very poor site,
			USSR			98				5	100	4	6.7	7.2	mech. damage on 4
			USDA, ARS, Mandan, ND			00				4	80	5	12.7	14.1	
								4	80	6	12.8	16.8			
III/21/1-5	9054820	ULPU	Siberian elm	26-Apr	95	95	PLBR	5	5	100	3	1.7	2.2	deer browse on all	
			<i>Ulmus pumila</i>			96				5	100	3	3.8	3.8	
			USDA, NRCS, PMC, Bridger, MT			97				5	100	3	5.7	5.7	deer browse on all
						99				5	100	3	9.9	12.3	
						01				5	100	4	13.6	16.0	
III/21/1-10	ND-428 9005970	JUNI	black walnut	30-Apr	85	85	PLBR	10	10	100	4	0.5	0.9		
			<i>Juglans nigra</i>			86				5	50		1.2	1.1	
			USDA, SCS, PMC, Bismarck, ND			87				5	50		0.4	0.9	
						89				4	40	4	2.6	2.1	
						91				4	40	4	4.3	4.1	
						94				3	30	4	8.3	5.8	
			99				2	20		15.6	15.6				