

## **FIELD EVALUATION PLANTING: TECHNICAL REPORT – 1982**

- Project 38I316K:** North Dakota State University, Dickinson Branch Experiment Station, Dickinson, North Dakota
- Project Title:** Field Evaluation of Woody Plant Materials
- Introduction:** There is a need to evaluate the performance of shrub and tree species/cultivars for windbreaks, wildlife, and recreational plantings under diverse soil and climatic conditions. To meet this need, field evaluation planting sites representative of the major land resource areas were located in the three states served by the center. These sites provide planting locations for assemblies of trees and shrubs to be evaluated under uniform culture and management.
- Objective:** The objective is to assemble and evaluate woody plant materials for conservation use. Superior cultivars will be selected and released for increase by commercial nurseries.
- Cooperators:** The Soil Conservation Service, Plant Materials Center, Bismarck, North Dakota, in cooperation with the North Dakota State University, Dickinson Branch Experiment Station, Dickinson, North Dakota.
- Location:** This project is located one mile west of Dickinson, North Dakota, on the NDSU Dickinson Branch Experiment Station.
- Legal description: NE ¼ 5, T139N., R96W., Stark County, North Dakota
- Major Land Resource Area:** The site is located in Major Land Resource Area 054, Rolling Soft Shale Plain. This moderately dissected rolling plain is underlain by calcareous shales and sandstones. Strongly dissected areas of sharp local relief or badland topography border major streams and valleys in some areas. Elevation is 1,800 to 3,100 feet. Sixty percent of the area is rangeland.
- Soils:** The soil type is a Parshall fine sandy loam. The Parshall series consists of deep, well drained soils formed in fine sandy loam alluvium on terraces and outwash plains and in upland swales. The surface layer and subsoil is dark grayish-brown fine sandy loam. The underlying material is dark grayish-brown fine sandy loam and loamy fine sand. Permeability is moderately rapid. The available water capacity is moderate. Organic matter is high and fertility is medium.

This soil is in North Dakota Windbreak Suitability Group 5. Included in this group are nearly level to hilly soils of the Flaxton, Lihen, Livonia, Parshall and Vebar series among others. These are well-drained, loamy and sandy soils. They are suited to windbreak and other plantings, but selection of species is limited. Erosion hazard is serious. The moderate available water capacity is the main limitation.

Climate: For MLRA 054 the average annual precipitation is 13 to 19 inches; increasing from west to east for this semiarid area. Rainfall is highest from late spring to midsummer and very low during the rest of the year. Winter precipitation is snow. Average annual temperature is 40° to 45°F. Average freeze-free period is 110 to 135 days. The plant hardiness zone is 4a, with an average annual minimum temperature of -30 to -20°F.

## **Methods and Materials**

Assembly: Refer to Table 31 for a list of woody species planted from 1978 through 1982.

Planting Plan: The planting site is approximately 500 feet long and 200 feet wide. The area is divided into four blocks. Each block consists of single row, non-replicated plots. Each plot contains a minimum of 5 plants. Row length is 100 feet and spacing between rows is 20 feet. Block 1 contains conifers spaced 5 feet within row. Block 2 contains shrubs and small trees spaced 5 feet within row. Block 3 contains medium sized trees, spaced 10 feet within row. Block 4 contains tall trees spaced 10 feet within row. All rows run from west to east.

Plot Preparation: A clean, firm planting site is prepared annually by disking and harrowing.

Planting Method: All tree and shrubs were hand planted using approved forestry methods.

Planting Date: Refer to Table 31 for a list of woody species planted from 1978 through 1982.

Fertilization: No fertilizer has been applied to planting area.

Weed Control: No herbicide has been applied to any plot during year of establishment or in succeeding years. Weeds were controlled by clean cultivating between rows, within row, and in fallow areas. Six to seven tillage operations were performed each year in the months of May through August. Hand hoeing was done as needed to control weeds in rows.

Biological Control: Previous years: No animal repellent or insecticide was applied in 1978. In the fall of 1979, an animal repellent, Arasan 50, was sprayed on fruit trees to discourage rodent damage.

1980 – 1981: On November 6, 1980 and October 29, 1981, Arasan 50 was applied to the trunks and lower limbs of fruit trees to deter rodents from damaging bark and cambium. Conifers also received this spray treatment to discourage animal browse. No insecticides were applied.

1982: No rodent repellent was applied.

Irrigation: Each year, newly planted materials were watered with a portable tank. No water was added following year of establishment.

Crop Residue Management: No cover crop has been established.

Silvicultural Practices: A minimum of pruning was done in 1979 to reshape trees damaged by animals. Dead trees and broken branches were cut and removed each year for sanitation. Replacements were used when available.

Evaluations and Measurements: Previous years: Records of planting date, survival, vigor, canopy width, height, cold hardiness, animal damage, and unusual or outstanding features have been maintained since 1978.

1982: Climatic data recorded at Dickinson Branch Experiment Station, Dickinson, North Dakota is shown in Table 30.

Plant performance data was reported on SCS-ECS-58 Woody Plant Initial Evaluation sheets. Survival, vigor, canopy cover and height, and special remarks were recorded for all hardwoods and remaining conifers on May 5 and September 16, 1982.

## Results

Plant Performance: Mean data for individual accessions of trees and shrubs is shown in Table 31. The following accessions exhibit potential for further evaluation:

Accession Number	Genus/Species Origin/Source	Plot Location	Remarks
ND-1765 5980T	Siberian larch <u>Larix sibirica</u> USDA, FS, Shelterbelt Lab., Bottineau, ND	1/03/1-10	
ND-313	Red tatarian honeysuckle <u>Lonicera tatarica sibirica</u> USDA, ARS, Cheyenne, WY USDA, SCS, PMC, Bismarck, ND	2/01/1-10	
ND-1730 5994T	Red tatarian honeysuckle <u>Lonicera tatarica sibirica</u> Lincoln-Oakes Nursery, Bismarck, ND	2/01/11-20	
ND-628 5887T	Silverberry <u>Elaeagnus commutata</u> Wells, Co., ND	2/02/1-10	
‘Midwest’	Manchurian crabapple <u>Malus baccata mandshurica</u> Echo Manchuria Res. Sta. Morden, Manitoba, Canada	3/01/1-5	
WY-843 ‘Bighorn’ 4646T	Skunkbush sumac <u>Rhus trilobata</u> Basin, WY USDA, SCS, PMC, Bismarck, ND	2/02/11-20 2/04/1-10	
‘Red Splendor’ 6004T	Flowering crabapple <u>Malus sp. x</u> Lee Nursery, Fertile, MN	3/01/6-10	

Accession Number	Genus/Species Origin/Source	Plot Location	Remarks
ND-14	Harbin pear <u>Pyrus ussuriensis</u> Res. Sta. Morden, MB, Canada SCS, PMC, Bismarck, ND	3/02/6-10	
SD-134 6066T	Apricot <u>Prunus armeniaca</u> Brookings Co., Brookings, SD	3/04/1-5	
ND-416 6067T	Apricot <u>Prunus armeniaca</u> Burleigh Co., Bismarck, ND	3/05/6-10	
ND-1336 6088T	Chokecherry <u>Prunus virginiana</u> Mercer Co., Stanton, ND	3/06/6-10	
ND-1873 5648T	Amur maple <u>Acer ginnala</u> Lincoln-Oakes Nursery, Bismarck, ND	3/09/1-5	
SD-156 5890T	Green ash <u>Fraxinus pennsylvanica</u> Deuel Co., Clear Lake, SD	4/01/1-5	
'Cardan' MDN-12002 5895T	Green ash <u>Fraxinus pennsylvanica</u> USDA, ARS, Mandan, ND Carlyle, MT	4/02/1-5	
ND-1759 5893T	Green ash SD-156 x MDN-12002 <u>Fraxinus pennsylvanica</u> USDA, SCS, PMC, Bismarck, ND	4/02/6-10	
ND-364 5867T	Russian olive <u>Elaeagnus angustifolia</u> Burleigh Co., Menoken, ND	4/06/1-5	

The following accessions failed to survive:

<b>Accession Number</b>	<b>Genus/Species Origin/Source</b>	<b>Plot Location</b>	<b>Remarks</b>
ND-1717 6045T	Scotch pine <u>Pinus sylvestris</u> USDA, FS, For. Sci. Lab., Lincoln, NE Pieria, Greece	1/10/1-5	Failed to Establish
ND-1760 6035T	Engelman spruce <u>Picea engelmannii</u> Coeur D' alene, ID USDA, FS, Shelterbelt Lab., Bottineau, ND	1/05/1-5	Failed to Establish
ND-1719 6047T	Scotch pine <u>Pinus sylvestris</u> USDA, FS, For. Sci. Lab., Lincoln, NE Prague, Czechoslovakia	1/05/6-10	Failed to Establish
ND-1710 4364T	<u>Pinus nigra</u> USDA, FS, For. Sci. Lab. Lincoln, NE Turkey	1/06/1-5	Failed to Establish
ND-1712 6040T	<u>Pinus nigra</u> USDA, FS, For. Sci. Lab. Lincoln, NE Turkey	1/06/6-10	Failed to Establish
ND-1714 6039T	<u>Pinus nigra</u> USDA, FS, For. Sci. Lab. Lincoln, NE Turkey	1/07/1-5	Failed to Establish
ND-1716 6041T	<u>Pinus nigra</u> USDA, FS, For. Sci. Lab. Lincoln, NE Kellog Forest, Michigan	1/08/1-5	Failed to Establish

## Accessions which failed to survive (Continued):

Accession Number	Genus/Species Origin/Source	Plot Location	Remarks
ND-1720 6037T	<u>Pinus densiflora</u> USDA, FS, For. Sci. Lab. Lincoln, NE Tono, Japan	1/08/6-10	Failed to Establish
ND-1722 6093T	<u>Pseudotsuga menzeisii</u> USDA, For. Sci. Lab. Lincoln, NE Douglas Co., Colorado	1/09/6-10	Failed to Establish
ND-1723 6232T	Northern white cedar <u>Thuja occidentalis</u> USDA, FS, For. Sci. Lab. Lincoln, NE Quebec, Canada		Failed to Establish
ND-3805	Amur corktree <u>Phellodendron amurense</u> UM, Dept. of Hort. Arboretum Chaska, MN SDSU, Brookings, SD		Failed to Establish
ND-81 6078T	Sloe <u>Prunus spinosa</u> Res. Sta. Morden, MB, Canada USDA, SCS, PMC, Bismarck, ND	3/08/1-5	Winter Killed
ND-573 5967T	Cathay walnut <u>Juglans cinerea</u> Res. Sta. Morden, MB, Canada	4/04/1-5	Failed to Establish

Rabbit damage was severe the winter of 1981-1982. Nearly all species showed some signs of rabbit damage. The following accessions of Apricot were completely girdled and were pruned back to the ground May 12, 1982, to stimulate regrowth.

<b>Accession Number</b>	<b>Genus/Species Origin/Source</b>	<b>Plot Location</b>
SD-132 6064T	Apricot <u>Prunus armeniaca</u> Brookings Co., Brookings, SD USDA, SCS, PMC, Bismarck, ND	3/03/1-5
SD-133 6065T	Apricot <u>Prunus armeniaca</u> Brookings Co., Brookings, SD USDA, SCS, PMC, Bismarck, ND	3/03/6-10
SD-134 6066T	Apricot <u>Prunus armeniaca</u> Brookings Co., Brookings, SD USDA, SCS, PMC, Bismarck, ND	3/04/1-5
Mantoy 6069T	Apricot <u>Prunus armeniaca</u> USDA, ARS, Mandan, ND USDA, SCS, PMC, Bismarck, ND	3/04/6-10
ND-1178 6070T	Apricot <u>Prunus armeniaca</u> Walsh Co., Park River, ND USDA, SCS, PMC, Bismarck, ND	3/05/1-5
ND-416 6067T	Apricot <u>Prunus armeniaca</u> Burleigh Co., Bismarck, ND USDA, SCS, PMC, Bismarck, ND	3/05/6-10
ND-423 6068T	Apricot <u>Prunus armeniaca</u> Stark Co., Dickinson, ND USDA, SCS, PMC, Bismarck, ND	3/06/1-5

Project No: 38I316K

**Table 30. 1982 Weather Summary – Official Station, North Dakota State University  
Dickinson Branch Experiment Station, Dickinson, North Dakota**

<b>Month</b>	<b>Temp. (Mean)</b>	<b>Normal Temp. (Mean)</b>	<b>Deviation From Norm.</b>	<b>Total Precip.</b>	<b>Normal Precip.</b>	<b>Deviation From Norm.</b>
January		10.6°F		0.85 in.	0.43 in.	+0.42 in.
February		15.5		0.40	0.41	-0.01
March		24.3		1.68	0.72	+0.96
April		40.5		1.85	1.42	+0.43
May		52.2		4.32	2.36	+1.96
June		61.3		3.48	3.56	-0.13
July		68.4		2.02	2.15	-0.13
August		67.5		2.63	1.78	+0.85
September		55.8		1.77	1.32	+0.45
October		45.2		6.51	0.91	+5.60
November		28.4		0.63	0.52	+0.11
December		<u>15.6</u>		<u>0.49</u>	<u>0.41</u>	<u>+0.08</u>
Annual		40.4		26.58	15.99	+10.59

	<b>Last Killing Frost</b>	<b>First Killing Frost</b>	<b>Frost Free Days</b>
1982	May 7	September 15	131

Total Seasonal Precipitation (Average): 11.27 inches

Total Seasonal Precipitation (April-August) 1982: 14.25 inches

USDA, SCS, PMC, Bismarck, North Dakota

210 – Project No: 38I316K

Project Title: Field Evaluation of Woody Plant Materials (FEP)

Location: North Dakota State University, Dickinson Branch Experiment Station, Dickinson, North Dakota

Major Land Resource Area: 054

202 – Soil Series Texture: Parshall fine sandy loam

201 – Year of Record: 1982

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211-PLOT-LOCATION		304-MATL-PLTD	(Establishment, material planted)
23,1-ACC-NO	(Prime-PMC-control number,	306-AGE	(Age of stock)
2-PLANT SYMBOL	PI number)	305-NO-PLTS	(Number of plants)
12-COMMON-NAME		310-NO-PLT-SRV	(Number of plants surviving)
4-GENUS-NAME		363-PCT-SRV	(Percent survival)
5-SPECIES-NAME		337-VI	(Vigor, plant)
29,30-COLL-SITE-STATE, COUNTY	(Origin/Source)	347-R-CO	(Resistance to cold)
212-YR-PLT	(Year planted)	359-CAN-COV	(Canopy cover, cm)
209-TRANS-DATE	(Transplant date)	360-PLNT-HT	(Plant height, cm)

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Table 31. 38I316K Field Evaluation of Woody Plant Materials – Dickinson, ND – 1982

Plot Location	Accession Number	Plant Symbol	Genus/Species Origin/Source	Yr. Plt.	Trans. Date	Matl. Pltd.	Age	No. Plts.	No. Plt. Srv.	Pct. Srv.	V I	C O	Can. Cov. (cm)	Plnt. Ht. (cm)	Remarks
1/01/1-10	ND-1729 5979T	LASI*	Siberian larch <u>Larix sibirica</u> NDFS State Nursery Towner, ND	78	05/16	PLBR	1-0	10	8	80	8		29	46	
1/02/1-10	SL-383-T Pallet No. 2392 5976T	LASI*	Siberian larch <u>Larix sibirica</u> USDA, FS, Shelterbelt Lab., Bottineau, ND Denbigh Ex. Forest	78	05/16	PLBR	1-0	10	9	90	6		47	69	
1/03/1-10	ND-1765 5980T	LASI*	Siberian larch <u>Larix sibirica</u> USDA, FS, Shelterbelt Lab., Bottineau, ND	78	05/17	PLBR	2-0	10	10	100	5		63	122	
1/04/1-5	ND-1763 6043T	PIPO*	Ponderosa pine <u>Pinus ponderosa</u> var. <u>ponderosa</u> USDA, FS, Shelterbelt Lab., Bottineau, ND 757-5 Todd Co., SD	78	05/16	CONT	1-1	5	4	80	7		74	134	Winter Injury
1/04/6-10	ND-1565 6036T	PIAR	Bristle cone pine <u>Pinus aristata</u> USDA, FS, Shelterbelt Lab., Bottineau, ND	78	05/16	CONT	1-1	5	1	20			65	90	
1/06/1-10	ND-1863 5909T	GLTR	Honey locust <u>Gleditsia triacanthos</u> Brown Co., SD USDA, SCS, PMC, Bismarck, ND	82	05/12	PLBR	2-0	10	9	90	5		33	46	

Plot Location	Accession Number	Plant Symbol	Genus/Species Origin/Source	Yr. Plt.	Trans. Date	Matl. Pltd.	Age	No. Plts.	No. Plt. Srv.	Pct. Srv.	V I	C O	Can. Cov. (cm)	Plnt. Ht. (cm)	Remarks
1/07/1-10	ND-3804	ROPS	Black locust <u>Robinia pseudoacacia</u> Darby, MT ND Forest Service State Nursery, Towner, ND	82	05/12	CONT	1-0	10	7	70	5		53	76	
2/01/1-10	ND-313 5996T	LOTAS*	Red tatarian honeysuckle <u>Lonicera tatarica sibirica</u> USDA, ARS, Cheyenne, WY USDA, SCS, PMC, Bismarck, ND	78	05/17	PLBR	2-0	10	10	100	4		162	136	Moderate grasshopper damage, leaf spot
2/01/11-20	ND-1730 5994T	LOTAS*	Red tatarian honeysuckle <u>Lonicera tatarica sibirica</u> Lincoln-Oakes Nursery, Bismarck, ND	78	05/17	PLBR	2-0	10	10	100	4		181	160	Leaf spot, and mildew
2/02/1-10	ND-628 5877T	ELCO*	Silverberry <u>Elaeagnus commutata</u> Wells Co., ND	78	05/17	PLBR	2-0	10	10	100	5		151	145	
2/02/11-20	WY-843 'Bighorn' 4646T	RHTR	Skunkbush sumac <u>Rhus trilobata</u> USDA, SCS, PMC, Bismarck, ND Bighorn Co., WY	78	05/17	PLBR	2-0	10	10	100	3		232	153	
2/03/1-10	ND-26 11852T	*	Honeysuckle <u>Lonicera</u> sp. USDA, ARS Mandan, ND	79	05/2	PLBR	2-0	10	10	100	6		104	118	Many grasshoppers
2/03/11-15	ND-452 19978T	LOXYM*	Honeysuckle <u>Lonicera xylosteum mollis</u> USDA, ARS, Cheyenne, WY USDA, SCS, PMC, Bismarck, ND	79	05/2	PLBR	2-0	5	5	100	4		133	137	Leaf mildew, grasshoppers

Plot Location	Accession Number	Plant Symbol	Genus/Species Origin/Source	Yr. Plt.	Trans. Date	Matl. Pltd.	Age	No. Plts.	No. Plt. Srv.	Pct. Srv.	V I	C O	Can. Cov. (cm)	Plnt. Ht. (cm)	Remarks
2/04/1-10	WY-843 'Bighorn' 4646T	RHTR	Skunkbush sumac <u>Rhus trilobata</u> USDA, SCS, PMC, Bismarck, ND Bighorn Co., WY	79	05/2	PLBR	2-0	10	10	100	5		126	93	Leaf spots
2/04/11-20	PM-ND-283 6079T	PRTE*	Russian almond <u>Prunus tenella</u> ND Fish & Game Dept. USDA, SCS, PMC, Bismarck, ND	80	05/08	PLBR	2-0	10	10	100	4		54	60	Leaf spots
2/05/1-10	ND-11 5993T	LOMA6	Amur honeysuckle <u>Lonicera maackii</u> Res. Sta. Morden, MB, Canada	81	05/07	CONT	0-1	10	10	100	4		42	44	
2/06/1-5	ND-995 PI-303584	SAHU	Prairie willow <u>Salix humilis</u> USDA, PI Sta., Ames, IA	82	05/12	PLBR- CONT	1-2	5	4	80	4		58	66	
2/06/6-10	PI-370126	SALIX	Willow <u>Salix sp.</u>	82	05/12	PLBR- CONT	0-1	5	5	100	4		33	48	
2/07/1-10	ND-624 6094T	PTTR	Common hop tree <u>Ptelea trifoliata</u> Ramsey Co., ND USDA, SCS, PMC, Bismarck, ND	82	05/12	PLBR	2-0	10	9	90	5		24	33	
3/01/1-5	'Midwest' 6003T	MABAM*	Manchurian crabapple <u>Malus baccata mandshurica</u> Echo Manchuria/Res. Sta. Morden, MB, Canada USDA, SCS, PMC, Bismarck, ND	78	05/17	PLBR	2-0	5	5	100	3		144	169	Deer browse, rodent damage

Plot Location	Accession Number	Plant Symbol	Genus/Species Origin/Source	Yr. Plt.	Trans. Date	Matl. Pltd.	Age	No. Plts.	No. Plt. Srv.	Pct. Srv.	V I	C O	Can. Cov. (cm)	Plnt. Ht. (cm)	Remarks
3/01/6-10	'Red Splendor' 6004T	*	Flowering crabapple <u>Malus sp.</u> x Lee Nursery, Fertile, MN	78	05/17	PLBR	2-0	5	5	100	3		181	256	
3/02/1-5	ND-1731 6001T	MABA*	Siberian crabapple <u>Malus baccata</u> Lincoln-Oakes Nursery, Bismarck, ND	78	05/17	PLBR	2-0	5	5	100	3		178	249	2 replacements
3/02/6-10	ND-14 1095T	PYUS*	Harbin pear <u>Pyrus ussuriensis</u> Harbin, Manchuria/Res. Sta. Morden, MB, Canada USDA, SCS, PMC, Bismarck, ND	78	05/17	PLBR	2-0	5	5	100	3		195	272	Good growth
3/03/1-5	SD-132 6064T	PRAR*	Apricot <u>Prunus armeniaca</u> USDA, SCS, PMC, Bismarck, ND Brookings Co., SD	78	05/17	PLBR	2-0	5	5	100	5		159	183	2 replacements
3/03/6-10	SD-133 6065T	PRAR*	Apricot <u>Prunus armeniaca</u> USDA, SCS, PMC, Bismarck, ND Brookings Co., SD	78	05/17	PLBR	2-0	5	3	60	6		185	185	
3/04/1-5	SD-134 6066T	PRAR*	Apricot <u>Prunus armeniaca</u> USDA, SCS, PMC, Bismarck, ND Brookings Co., SD	78	05/17	PLBR	2-0	5	5	100	7		124	146	
3/04/6-10	'Mantoy' 6069T	PRAR*	Apricot <u>Prunus armeniaca</u> USDA, SCS, PMC, Bismarck, ND USDA, ARS, Mandan, ND	78	05/17	PLBR	2-0	5	5	100	6		195	212	

Plot Location	Accession Number	Plant Symbol	Genus/Species Origin/Source	Yr. Plt.	Trans. Date	Matl. Pltd.	Age	No. Plts.	No. Plt. Srv.	Pct. Srv.	V I	C O	Can. Cov. (cm)	Plnt. Ht. (cm)	Remarks
3/05/1-5	ND-1178 6070T	PRAR*	Apricot <u>Prunus armeniaca</u> USDA, SCS, PMC, Bismarck, ND Walsh Co., ND	78	05/17	PLBR	2-0	5	4	80	7		168	161	
3/05/6-10	ND-416 6067T	PRAR*	Apricot <u>Prunus armeniaca</u> USDA, SCS, PMC, Bismarck, ND Burleigh Co., ND	78	05/17	PLBR	2-0	5	5	100	7		142	137	
3/06/1-5	ND-423 6068T	PRAR*	Apricot <u>Prunus armeniaca</u> USDA, SCS, PMC, Bismarck, ND Stark Co., ND	78	05/17	PLBR	2-0	5	5	100	7		155	190	
3/06/6-10	ND-1336 6088T	PRVI	Chokecherry <u>Prunus virginiana</u> Mercer Co., ND	78	05/17	PLBR	2-0	5	5	100	3		259	313	Slight leaf spot
3/07/1-5	ND-1732 6090T	PRVI	Chokecherry <u>Prunus virginiana</u> Lincoln-Oakes Nursery, Bismarck, ND	78	05/17	PLBR	2-0	5	5	100	4		247	293	Moderate mildew, slight leaf spot
3/07/6-10	'Schubert' 12608T	PRVI	Chokecherry <u>Prunus virginiana</u> USDA, ARS, Mandan, ND USDA, SCS, PMC, Bismarck, ND	78	05/17	PLBR	2-0	5	5	100	6		116	169	Mildew
3/08/1-5	ND-81 6078T	PRSP	Sloe <u>Prunus spinosa</u> Res. Sta. Morden, MB, Canada USDA, SCS, PMC, Bismarck, ND	78	05/17	PLBR	2-0	5	0	0					

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3/08/6-10	ND-629 5645T	ACGI	Amur maple <u>Acer ginnala</u> Res. Sta. Morden, MB, Canada	79	05/2	PLBR	2-0	5	4	80	5		121	138	3 replacements
3/09/1-5	ND-1873 5648T	ACGI	Amur maple <u>Acer ginnala</u> Lincoln-Oakes Nursery, Bismarck, ND	79	05/2	PLBR	2-0	5	5	100	5		166	193	2, 4-D damage
3/09/6-10	ND-686 6225T	SYAMJ*	Japanese tree lilac <u>Syringa amurensis japonica</u> ND Game & Fish Dept.	79	05/2	PLBR	2-0	5	3	60	4		62	77	
3/10/1-5	ND-3773 21576T		Willow <u>Salix sp.</u> Norman Co., MN USDA, SCS, PMC, Bismarck, ND	82	05/12	PLBR	0-1	5	3	60	7		11	22	
3/10/6-10	Mich-433	SAPE	Laurel willow <u>Salix pentandea</u> USDA, SCS, Rose Lake PMC, East Lansing, MI	82	05/12	PLBR	0-1	5	5	100	5		13	38	
4/01/1-5	SD-156 5890T	FRPE	Green ash <u>Fraxinus pennsylvanica</u> Deuel Co., SD	78	05/17	PLBR	2-0	5	5	100	3		171	232	3 replacements
4/01/6-10	ND-1734 5891T	FRPE	Green ash <u>Fraxinus pennsylvanica</u> Lincoln-Oakes Nursery, Bismarck, ND	78	05/17	PLBR	2-0	5	5	100	4		143	222	2 replacements

Plot Location	Accession Number	Plant Symbol	Genus/Species Origin/Source	Yr. Plt.	Trans. Date	Matl. Pltd.	Age	No. Plts.	No. Plt. Srv.	Pct. Srv.	V I	C O	Can. Cov. (cm)	Plnt. Ht. (cm)	Remarks
4/02/1-5	MDN-12002 5895T	FRPE	Green ash <u>Fraxinus pennsylvanica</u> USDA, ARS, Mandan, ND Wibaux Co., MT	78	05/17	PLBR	2-0	5	5	100	3		228	308	5 replacements
4/02/6-10	ND-1759 5893T	FRPE	Green ash <u>Fraxinus pennsylvanica</u> SD-156 x MDN-12002 USDA, SCS, PMC, Bismarck, ND	78	05/17	PLBR	2-0	5	5	100	4		176	246	5 replacements
4/03/1-5	ND-647 5887T	FRNI	Black ash <u>Fraxinus nigra</u> Res. Sta. Morden, MB, Canada	78	05/17	PLBR	2-0	5	5	100	4		126	243	Good growth
4/03/6-10	ND-1432 5658T	AEGL	Ohio buckeye <u>Aesculus glabra</u> Res. Sta. Morden, MB, Canada	78	05/17	PLBR	2-0	5	1	20	6		45	65	
4/04/1-5	ND-1879 11850T	GLSI	Chinese honey locust <u>Gleditsia sinensis</u> Woodward, OK USDA, ARS, Mandan, ND	80	05/08	PLBR- CONT	2-1	5	5	100	4		43	68	
4/04/6-10	ND-548 5969T	JUMA*	Manchurian walnut <u>Juglans mandshurica</u> Res. Sta. Morden, MB, Canada	78	05/17	PLBR	2-0	5	3	60	6		168	110	Winter injury
4/05/1-5	ND-1170 6009T	MOAL	Mulberry <u>Morus alba</u> Burleigh Co., ND	78	05/17	PLBR	2-0	5	5	100	3		420	325	Moderate Winter injury
4/05/6-10	ND-363 5866T	ELAN	Russian olive <u>Elaeagnus angustifolia</u> Burleigh Co., ND	78	05/17	PLBR	2-0	5	5	100	4		240	296	

Plot Location	Accession Number	Plant Symbol	Genus/Species Origin/Source	Yr. Plt.	Trans. Date	Matl. Pltd.	Age	No. Plts.	No. Plt. Srv.	Pct. Srv.	V I	C O	Can. Cov. (cm)	Plnt. Ht. (cm)	Remarks
4/06/1-5	ND-364 5867T	ELAN	Russian olive <u>Elaeagnus angustifolia</u> Burleigh Co., ND	78	05/17	PLBR	2-0	5	5	100	2		375	400	
4/06/6-10	ND-1735 5874T	ELAN	Russian olive <u>Elaeagnus angustifolia</u> Lincoln-Oakes Nursery, Bismarck, ND	78	05/17	PLBR	2-0	5	5	100	4		335	441	
4/07/1-5	ND-541 5868T	ELAN	Russian olive <u>Elaeagnus angustifolia</u> Haakon Co., SD	78	05/17	PLBR	2-0	5	5	100	3		390	360	
04/07/6-10	PM-ND-1843 11840T	ELAN	Russian olive <u>Elaeagnus angustifolia</u> Res. Sta. Morden, MB, Canada	80	05/08	PLBR	2-0	5	5	100	4		144	153	
4/09/1-10	MDN-12003 T05725	CEOC	Hackberry <u>Celtis occidentalis</u> USDA, ARS, Mandan, ND	80	05/08	PLBR	2-0	10	8	80	6		40	48	
4/10/1-10	PM-SD-75 5713T	CEOC	Hackberry <u>Celtis occidentalis</u> Potter Co., SD	81	05/07	PLBR	2-0	10	7	70	6		28	44	