

## **FIELD EVALUATION PLANTING: TECHNICAL REPORT – 1980**

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/cultivar 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: 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 17 for a list of woody species planted from 1978 through 1980.

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 17 for a list of woody species planted from 1978 through 1980.

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, Arason 50, was sprayed on fruit trees to discourage rodent damage.

1980: On November 6, 1980, 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.

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, growth, animal damage, and unusual or outstanding features have been maintained since 1978.

1980: Climatic data recorded at Dickinson Branch Experiment Station, Dickinson, North Dakota is shown in Table 16.

Plant performance data was reported on SCS-ECS-58 Woody Plant Initial Evaluation sheets. Cold hardiness and animal damage were recorded for conifers on May 8, 1980. Survival, vigor, canopy cover and height, and special remarks were recorded for conifers and all remaining broadleaf trees on October 16, 1980.

## Results

Plant Performance: Mean data for individual accessions of trees and shrubs is shown in Table 17. The following accessions exhibit potential for further evaluation. (October 1980):

<b>Accession Number</b>	<b>Genus/Species Origin/Source</b>	<b>Plot Location</b>
ND-1765 5980T	Siberian larch <u>Larix sibirica</u> USDA, FS, Shelterbelt Lab., Bottineau, ND	1/03/1-10
ND-1730 5994T	Red tatarian honeysuckle <u>Lonicera tatarica sibirica</u> Lincoln-Oakes Nursery, Bismarck, ND	2/01/11-20

<b>Accession Number</b>	<b>Genus/Species Origin/Source</b>	<b>Plot Location</b>
ND-628 5887T	Silverberry <u>Elaeagnus commutata</u> Wells, Co., ND	2/02/1-10
'Red Splendor' 6004T	Flowering crabapple <u>Malus sp. x</u> Lee Nursery, Fertile, MN	3/01/6-10
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
MDN-12002 5895T	Green ash <u>Fraxinus pennsylvanica</u> USDA, SEA-AR, 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>
ND-1717 6045T	Scotch pine <u>Pinus sylvestris</u> USDA, FS, For. Sci. Lab., Lincoln, NE Pieria, Greece	I-0/1-5
ND-1760 6035T	Engelman spruce <u>Picea engelmanni</u> USDA, FS, Shelterbelt Lab., Bottineau, ND Coeur d'Alene, ID	I/05/1-5
ND-1710 4364T	<u>Pinus nigra pallasiana</u> USDA, FS, For. Sci. Lab., Lincoln, NE Ilgaz area, Turkey	I/06/1-5
ND-1712 6040T	<u>Pinus nigra pallasiana</u> USDA, FS, For. Sci. Lab., Lincoln, NE Karsanti area, Turkey	I/06/6-10
ND-1714 6039T	<u>Pinus nigra caramanica</u> USDA, FS, For. Sci. Lab., Lincoln, NE Balikesir Prov., Turkey	I/07/1-5
ND-1716 6041T	<u>Pinus nigra</u> x <u>Pinus densiflora</u> USDA, FS, For. Sci., Lab., Lincoln, NE Kellog Forest, MI	I/08/1-5
ND-1720 6037T	Japanese red pine <u>Pinus densiflora</u> USDA, FS, For. Sci. Lab., Lincoln, NE Tono, Japan	I/08/6-10

Accession Number	Genus/Species Origin/Source	Plot Location
ND-1722 6093T	Douglas fir <u>Pseudotsuga menzeisii glauca</u> USDA, FS, For. Sci. Lab., Lincoln, NE	I/09/6-10
ND-1723 6232T	<u>Thuji occidentalis</u> USDA, FS, For. Sci. Lab., Lincoln, NE Berthierville, Quebec, Canada	I/10/1-5
ND-629 5645T	Amur maple <u>Acer ginnala</u> Res. Sta., Morden, MB, Canada	III/08/6-10

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**Table 16. 1980 Weather Summary – Official Station, North Dakota State University  
Dickinson Branch Experiment Station, Dickinson, North Dakota**

Month	Temp. (Mean)	Normal Temp. (Mean)	Deviation From Norm.	Total Precip.	Normal Precip.	Deviation From Norm.
January	9.7°F	-0.9°F	10.6°F	0.51°F	0.41°F	+0.10°F
February	18.6	+3.1	15.5	0.21	0.40	-0.19
March	25.2	+0.9	24.3	0.34	0.66	-0.32
April	46.7	+6.2	40.5	0.03	1.51	-1.48
May	58.3	+6.1	52.2	0.12	2.51	-2.39
June	63.9	+2.6	61.3	2.67	4.01	-1.34
July	70.4	+2.0	68.4	1.43	2.29	-0.86
August	63.1	-4.4	67.5	3.31	1.86	+1.45
September	55.0	-0.8	55.8	0.76	1.37	-0.61
October	43.9	-1.3	45.2	2.41	0.72	+1.69
November	34.6	+6.2	28.4	0.37	0.51	-0.14
<u>December</u>	<u>17.3</u>	<u>+1.7</u>	<u>15.6</u>	<u>0.32</u>	<u>0.42</u>	<u>+0.12</u>
Annual	42.2	1.8	40.4	2.48	16.69	-4.21

USDA, SCS, PMC, Bismarck, North Dakota

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

Soil Series Texture: Parshall fine sandy loam

Year of Record: 1980

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76-PLOT-LOCATION		80-MATL-PLTD	(Establishment, material planted)
34-ACC-NO	(Prime-PMC-control number)	82-AGE	(Age of stock)
3-PLANT-SYMBOL		81-NO-PLTS	(Number of plants)
21-COMMON-NAME		86-NO-PLT-SRV	(Number of plants surviving)
5-GENUS-NAME		151-PCT-SRV	(Percent survival)
6-SPECIES-NAME		125-VI	(Vigor, plant)
42, 43-COLL-SITE-STATE, COUNTY	(Origin/source)	135-R-CO	(Resistance to cold)
0-YR-PLT	(Year planted)	147-CAN-COV	(Canopy cover, cm)
70-TRANS-DATE	(Transplant date)	148-PLNT-HT	(Plant height, cm)

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Table 17. 38I316K Field Evaluation of Woody Plant Materials – Dickinson, ND – 1980

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
1/00/1-5	ND-1717 6045T	PISY	Scotch pine <u>Pinus sylvestris</u> USDA, FS, For. Sci. Lab., Lincoln, NE Pieria, Greece	79	05/2	CONT	1-0	5	0						
1/00/6-10	ND-1718 6046T	PISY	Scotch pine <u>Pinus sylvestris</u> USDA, FS, For. Sci. Lab., Lincoln, NE Eskisehir, Turkey	79	05/2	CONT	1-0	5	1	20	9	9	14	27	
1/01/1-10	ND-1729 5979T	LASI*	Siberian larch <u>Larix sibirica</u> NDFS State Nursery Towner, ND	78	05/26	PLBR	1-0	10	10	100	4	1	33	55	
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	10	100	4	1	43	62	
1/03/1-10	ND-1765 5980T	LASI*	Siberian larch <u>Larix sibirica</u> USDA, FS, Shelterbelt Lab., Bottineau, ND	78	05/17	PLBR	1-0	10	10	100	4	1	55	31	
1/04/1-5	ND-1763 6043T	PIPOP*	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	4	5	46	61	



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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	5	100	5	3	32	23	
1/05/1-5	ND-1760 6035T	PIEN	Engelman spruce <u>Picea engelmanni</u> USDA, FS, Shelterbelt Lab., Bottineau, ND Coeurd' Alene, ID	78	05/16	CONT	1-1	5	0						
1/05/6-10	ND-1719 6047T	PISY	Scotch pine <u>Pinus sylvestris</u> USDA, FS, For. Sci. Lab., Lincoln, NE Prague, Czechoslovakia	79	05/2	CONT	1-0	5	4	80	7	9	23	26	
1/06/1-5	ND-1710 4364T	PINIP*	Austrian pine <u>Pinus nigra pallasiana</u> USDA, FS, For. Sci. Lab., Lincoln, NE Ilgaz area, Turkey	79	05/2	CONT	1-0	5	0						
1/06/6-10	ND-1712 6040T	PINIP*	Austrian pine <u>Pinus nigra pallasiana</u> USDA, FS, For. Sci. Lab., Lincoln, NE Karsanti area, Turkey	79	05/2	CONT	1-0	5	0						
1/07/1-5	ND-1714 6039T	PINIC*	Austrian pine <u>Pinus nigra caramanica</u> USDA, FS, For. Sci. Lab., Lincoln, NE Balikesir Prov., Turkey	79	05/2	CONT	1-0	5	0						
1/07/6-10	ND-1715 6038T	PINI	Austrian pine <u>Pinus nigra</u> USDA, FS, For. Sci. Lab., Lincoln, NE Burgos, Spain	79	05/2	CONT	1-0	5	3	60	7	9	23	24	

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1/08/1-5	ND-1716 6041T	PINI X PIDE	Austrian pine <u>Pinus nigra</u> x <u>Pinus densiflora</u> USDA, FS, For. Sci. Lab., Lincoln, NE Kellog Forest, Mich.	79	05/2	CONT	1-0	5	0						
1/08/6-10	BD-1720 6037T	PIDE*	Japanese red pine <u>Pinus densiflora</u> USDA, FS, For. Sci. Lab., Lincoln, NE Tono, Japan	79	05/2	CONT	1-0	5	0						
1/09/1-5	ND-1721 6044T	PIRI	Pitch pine <u>Pinus rigida</u> USDA, FS, For. Sci. Lab., Lincoln, NE York Co., Maine	79	05/2	CONT	1-0	5	1	20	7	10	39	48	
1/09/6-10	ND-1722 6093T	PSMEG*	Douglas fir <u>Pseudotsuga menzeisii glauca</u> USDA, FS, For. Sci. Lab., Lincoln, NE Douglas Co., Colorado	79	05/2	CONT	1-0	5	0						
1/10/6-10	ND-1724 6034T	PIAB	Norway spruce <u>Picea abies</u> USDA, FS, For. Sci. Lab., Lincoln, NE	79	05/2	CONT	1-0	5	2	40	7	8	24	30	
2/01/1-10	ND-313 5996T	LOTAS*	Red tatarian honeysuckle <u>Lonicera tatarica sibirica</u> USDA, SEA, FR, Cheyenne, WY USDA, SCS, PMC, Bismarck, ND	78	05/17	PLBR	2-0	10	10	100	3	-	98	73	
2/01/11-20	ND-1730 5994T	LOTAS*	Red tatarian honeysuckle <u>Lonicera tatarica sibirica</u> Lincoln-Oakes Nursery Bismarck, ND	78	05/17	PLBT	2-0	10	10	100	1	-	104	90	

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
2/02/1-10	ND-628 5877T	ELCO*	Silverberry <u>Elaeagnus commutata</u> Wells Co., ND	78	05/17	PLBR	2-0	10	10	100	1	1	124	97	
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	-	152	82	
2/03/1-10	ND-26 11852T	LONIC	Honeysuckle <u>Lonicera sp.</u> USDA, SEA-AR, NGP Res. Ctr., Mandan, ND	79	05/2	PLBR	2-0	10	10	100	5	-	60	51	
2/03/11-15	ND-452 19978T	LOXYM*	Honeysuckle <u>Lonicera xylosteum mollis</u> USDA, SEA, Cheyenne, WY USDA, SCS, PMC, Bismarck, ND	79	05/2	PLBR	2-0	5	5	100	3	-	71	47	
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	-	73	43	
2/04/11-20	PM-ND-283 T6079	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	5	-	23	68	
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	-	58	85	

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3/01/6-10	'Red Splendor' 6004T	MALUS	Flowering crabapple <u>Malus</u> sp. x Lee Nursery, Fertile, MN	78	05/17	PLBR	2-0	5	5	100	2	-	108	143	
3/02/1-5	ND-1731 6001T	MABA*	Siberian crabapple <u>Malus baccata</u> Lincoln-Oakes, Bismarck, ND	78	05/17	PLBR	2-0	5	5	100	3	-	125	125	
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	1	-	91	139	
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	3	-	165	147	
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	4	-	163	152	
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	1	-	230	258	
3/04/6-10	'Mantoy' 6069T	PRAR*	Apricot <u>Prunus armeniaca</u> USDA, SCS, PMC, Bismarck, ND USDA, SEA, FR, Mandan, ND	78	05/17	PLBR	2-0	5	5	100	4	-	195	185	

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	5	100	3	-	198	207	
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	1	-	232	225	
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	5	-	132	163	
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	2	-	181	196	
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	3	-	112	169	
3/07/6-10	'Schubert' 12608T	PRVI	Chokecherry <u>Prunus virginiana</u> USDA, SEA, FR, Mandan, ND USDA, SCS, PMC, Bismarck, ND	78	05/17	PLBR	2-0	3	2	66	7	-	53	75	
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	4	80	9	-	48	58	

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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	0						
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	3	-	86	91	
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	5	100	7	-	45	81	
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	2	-	68	134	
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	-	57	113	
4/02/1-5	MDN-12002 5895T	FRPE	Green ash <u>Fraxinus pennsylvanica</u> USDA, SEA, FR, Mandan, ND Wibaux Co., MT	78	05/17	PLBR	2-0	5	5	100	3	-	91	154	
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	3	-	93	158	
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	6	-	37	83	

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
4/03/6-10	ND-1432 5658T	AEGL	Ohio buckeye <u>Aesculus glabra</u> Res. Sta. Morden, MB, Canada	78	05/17	PLBR	2-0	5	3	60	9	-	14	12	
4/04/1-5	ND-1879 11850T	GLSI	Chinese honey locust <u>Gleditsia sinensis</u> Great Plains Fld. Sta. Woodward, OK USDA, SEA-AR, Mandan, ND	80	05/80	PLBR- CONT	2-1	5	1	20	9	-	10	15	
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	8	-	43	46	
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	7	-	241	236	
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	3	-	179	158	
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	1	-	291	255	
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	-	226	217	
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	4	-	251	236	

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
4/07/6-10	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	5	-	45	47	
4/09/1-10	MDN-12003 T05725		Hackberry <u>Celtis occidentalis</u> USDA, SEA-AR, Mandan, ND	80	05/08	PLBR	2-0	10	10	100	-	-	15	61	