

FIELD EVALUATION PLANTING: TECHNICAL REPORT – 1981

- 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 23 for a list of woody species planted from 1978 through 1981.

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 23 for a list of woody species planted from 1978 through 1981.

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 – 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.

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.

1981: Climatic data recorded at Dickinson Branch Experiment Station, Dickinson, North Dakota is shown in Table 22.

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 July 15, 1981.

Results

Plant Performance: Mean data for individual accessions of trees and shrubs is shown in Table 23. The following accessions exhibit potential for further evaluation. (October 1981):

Accession Number	Genus/Species Origin/Source	Plot Location
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, NE	2/01/1-10

Accession Number	Genus/Species Origin/Source	Plot Location
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, CA	3/01/1-5
'Red Splendor' 6004T	Flowering crabapple <u>Malus sp. x</u> Lee Nursery, Fertile, MN	3/01/6-10
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

Accession Number	Genus/Species Origin/Source	Plot Location
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:

ND-1718 6045T	Scotch pine <u>Pinus sylvestris</u> USDA, FS, For. Sci. Lab., Lincoln, NE Eskisehir, Turkey	I-0/6-10
ND-1719	Scotch pine <u>Pinus sylvestris</u> USDA, FS, For. Sci. Lab., Lincoln, NE Prague, Czechoslovakia	I-5/6-10
ND-1715	<u>Pinus nigra</u> USDA, FS, For. Sci. Lab., Lincoln, NE Burgos, Spain	I-7/6-10
ND-1721	Pitch pine <u>Pinus rigida</u> USDA, FS, For. Sci. Lab., Lincoln, NE York Co., Maine	I-9/1-5
ND-1724	<u>Picea abies</u> USDA, FS, For. Sci. Lab., Lincoln, NE	I-10/6-10

Project No: 38I316K

**Table 22. 1981 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	24.4°F	10.6°F	+13.8°F	0.10 in.	0.41 in.	-0.31 in.
February	21.9	15.5	+ 6.4	0.03	0.40	-0.37
March	33.9	24.3	+ 9.6	Tr.	0.66	-0.66
April	46.3	40.5	+ 5.8	0.66	1.51	-0.85
May	53.4	52.2	+ 1.2	1.30	2.51	-1.21
June	59.8	61.3	- 1.5	3.71	4.01	-0.30
July	71.2	68.4	+ 2.8	1.57	2.29	-0.72
August	69.5	67.5	+ 2.0	4.05	1.86	+2.19
September	56.9	55.8	+ 1.1	2.75	1.37	+1.38
October	40.7	45.2	- 4.5	0.23	0.72	-0.49
November	34.2	28.4	+ 5.8	0.85	0.51	+0.34
December	<u>17.6</u>	<u>15.6</u>	<u>+ 2.0</u>	<u>0.51</u>	<u>0.42</u>	<u>+0.09</u>
Annual	44.2	40.4	+ 3.7	15.76	16.67	-0.91

USDA, SCS, PMC, Bismarck, North Dakota

210 – Project No.: 38I316K

Project Title: Field Evaluation of Woody 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: 1981

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)

Table 23. 38I316K Field Evaluation of Woody Plant Materials – Dickinson, ND – 1981

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	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	0	0					
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	9	90			33	66	
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			49	88	
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			64	112	
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	5	100			50	77	

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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			37	26	
1/05/1-5	ND-1760 6035T	PIEN	Engelman spruce <u>Picea engelmannii</u> USDA, FS, Shelterbelt Lab., Bottineau, ND Coeur D'Alene, ID	78	05/16	CONT	1-1	5	0	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	0	0					
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	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	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	0					

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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	0	0					
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 Kellogg Forest, Mich.	79	05/2	CONT	1-0	5	0	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	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	0	0					
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	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	0	0					

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
2/01/1-10	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			127	100	
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			146	123	
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			123	129	
2/02/11-20	WY-843 'Bighorn' 4646T	RHTR	Skunk bush sumac <u>Rhus trilobata</u> USDA, SCS, PMC, Bismarck, ND Bighorn Co., WY	78	05/17	PLBR	2-0	10	10	100			287	116	
2/03/1-10	ND-26 11852T	*	Honeysuckle <u>Lonicera sp.</u> USDA, ARS Mandan, ND	79	05/2	PLBR	2-0	10	10	100			79	87	
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			99	88	
2/04/1-10	WY-843 'Bighorn' 4646T	RHTR	Skunk bush sumac <u>Rhus trilobata</u> USDA, SCS, PMC, Bismarck, ND Bighorn Co., WY	79	05/2	PLBR	2-0	10	10	100			78	64	

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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	7	70			28	44	
2/05/1-10	ND-11 5993T	LOMA6	Amur honeysuckle <u>Lonicera maackii</u> Res. Sta. Morden, MB, Canada	81	05/07	CON T	0-1	10	10	100			20	19	
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			92	112	
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			135	176	
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			144	163	
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			140	185	
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			171	199	

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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			166	204	
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			238	282	
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			206	225	
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			222	244	
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			246	249	
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			131	197	
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			208	216	

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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			179	213	
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			38	77	
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	1	20			24	30	
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			39	58	
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			128	132	
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	2	40			47	85	
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			99	170	
4/01/6-10	ND-1734 5891T	FRPE	Green ash <u>Fraxinus pennsylvanica</u> Lincoln-Oakes Nursery, Bismarck, ND	79	05/17	PLBR	2-0	5	5	100			74	146	

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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			133	213	
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			121	192	
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			70	123	
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			12	25	
4/04/1-5	ND-1879 11850T	GLSI	Chinese honeylocust <u>Gleditsia sinensis</u> Woodward, OK USDA, ARS, Mandan, ND	80	05/80	PLBR- CONT.	2-1	5	2	40			4	25	
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			45	58	
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			229	209	
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			209	199	

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			308	281	
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			259	239	
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			283	272	
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			45	68	
4/09/1-10	MDN-12003 T05725	CEOC	Hackberry <u>Celtis occidentalis</u> USDA, ARS, Mandan, ND	80	05/08	PLBR	2-0	10	9	90			2	14	
4/10/1-10	PM-SD-75 5713T	CEOC	Hackberry <u>Celtis occidentalis</u> Potter Co., SD	81	05/07	PLBR	2-0	10	10	100			2	37	