

Mountain Home Air Force Base Woody Inter-Center Strain Trial
1995 Progress Report
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INTRODUCTION

The purpose of the Mountain Home Woody Inter-Center Strain Trial is to identify and evaluate trees and shrubs for use in windbreaks and shelterbelts in the Snake River Plains (MLRA 11) of the Northwestern Wheat and Range region of the Intermountain United States. The site also provides a testing area for woody plant materials being evaluated by the Aberdeen Plant Materials Center for future release potential. This report describes progress made during 1995.

The site is located at the Mountain Home Air Force Base and the project was implemented through a Memorandum of Understanding between the Natural Resources Conservation Service and the United States Air Force. For a detailed description of the project and site characteristics see the Mountain Home Air Force Base Woody Inter-Center Strain Trial - 1993 Progress Report.

On May 10-11, 1995, two hundred ninety four trees and shrubs representing fifteen accessions were planted and 1724 feet of weed barrier were installed. No additional planting is planned for the site. There are a total of 111 accessions representing 63 species planted at the test site.

The test site is becoming very valuable as a display of trees and shrubs that are adapted to the region. On March 29, the Base Wing Commander toured the site and on July 25, approximately 150 people toured the site as part of the activities held in conjunction with the Fourth Annual North American Agroforestry Conference. The Mountain Home NRCS field office is also bringing cooperators to tour the site.

1995 EVALUATIONS AND DISCUSSION

Two evaluations were conducted in 1995. The first evaluation was May 9 and the second evaluation September 20.

The winter of 1994-95 was near normal. Weather conditions during the spring and early summer of 1995 were cool with above normal precipitation. Weather conditions returned to normal during July. The irrigation system functioned well with the exception of rows 22, 23 and 24 in which tree roots had grown into the drip emitters and plugged. The irrigation system was replaced on these rows.

The 1991 planting had 81.9% survival during the spring evaluation. Winter mortality was only 0.9%. At the end of the growing season, survival for the 1991 planting had dropped slightly to 81.4%. Overall vigor for the 1991 planting did not change during 1995.

The 1992 planting had 66.4% survival during the spring evaluation. Winter mortality was 2.9%. However, at the end of the growing season, survival for the 1992 planting increased slightly to 67.8%. There was a slight decline in vigor for the 1992 planting from 3.5 during the spring evaluation to 3.9 during the fall evaluation.

The 1993 planting has not fared well since it was planted. Winter mortality was 4.7% and survival was 14.3% during the first evaluation in 1995. Due to re-sprouting, survival increased to 20.8% by the end of the growing season. Vigor declined from 5.7 during the spring to 6.8 during the fall evaluation.

The 1995 planting was evaluated for the first time this fall. Survival was 74.3%. It appears that mortality may be attributed to excessive irrigation. The 1995 planting had weed barrier installed and with the elimination of weed competition and moisture conserving abilities the weed barrier provides, these plants do not need as much irrigation applied as the earlier plantings which do not have weed barrier.

The following summarizes overall performance for each planting from the fall of 1993 to the present:

<u>Evaluation Date</u>	<u>%Survival</u>	<u>Vigor*</u>	<u>Average Plant Height</u>	<u>Average Leader Length</u>
1991 Planting				
Sept. 13, 1993	84.4	3.1	61.4 inches	15.3 inches
May 23, 1994	83.6	3.0	66.7	4.5
Sept. 14, 1994	82.8	3.0	80.6	14.6
May 9, 1995	81.9	2.7	84.3	NA
Sept. 20, 1995	81.4	2.9	102.8	14.4
1992 Planting				
Sept. 13, 1993	70.3	4.3	42.6	10.8
May 23, 1994	67.1	4.4	48.1	4.4
Sept. 14, 1994	69.3	4.5	54.2	11.5
May 9, 1995	66.4	3.5	74.1	NA
Sept. 20, 1995	67.8	3.9	79.8	11.9
1993 Planting				
Sept. 13, 1993	44.0	5.8	17.1	9.4
May 23, 1994	25.0	7.9	18.8	2.3
Sept. 14, 1994	19.0	7.9	5.5	0.9
May 9, 1995	14.3	5.7	24.4	NA
Sept. 20, 1995	20.8	6.8	11.1	3.4
1995 Planting				
Sept. 20, 1995	74.3	3.0	24.3	10.4

* vigor rating 1 - 9, 1 best; 9 dead

Leader length data was not collected during the spring evaluation because most of the plants had just initiated stem elongation.

Table 1 summarizes the evaluation data collected from all plots during the spring evaluation and Table 2 summarizes the evaluation data collected from all plots during the fall evaluation. Figure 1 is a plot map of the test site developed for use during the Agroforestry tour held in July.

Table 3 illustrates the performance based upon the most recent evaluation of fully replicated accessions planted in 1991, 1992 and 1995. No fully replicated accessions planted in 1993 have survived. The accessions are ranked from best to worst survival because this trait is the most important characteristic, especially for young, newly established plant material. The accessions listed above the average for the group represent the best accessions in terms of survival.

The best low growing shrub from the 1991 planting continues to be Blue arctic willow (9005050) followed by Redosier dogwood (9044827). Many of the Redosier dogwood accessions appeared to have good vigor during this fall's evaluation as compared to previous years. This may be attributed to the cool, moist weather during the spring and early summer.

Mackenzie willow (20100) and Chokecherry (9004629) continued to be the best performing medium height shrubs and small tree accessions from the 1991 planting as did 'Cardan' green ash from the tall tree accessions. Survival of Laurel willow (9005049) dropped from 100% during the fall 1994 evaluation to 95% during the fall 1995 evaluation. All of the Laurel willow plots are in rows 22, 23, and 24 in which the drip system plugged. The tallest accession is Cottonwood X *P. nigra* (14273) averaging 18.5 feet.

The best performing fully replicated accession from the 1992 planting is "Mitosis" Blueleaf honeysuckle. There is quite a range of survival for the 1995 low growing shrubs ranging from 30% for 9067480 Fourwing saltbush to 75% for 'Wytana' Fourwing saltbush. These shrubs are typically found in areas with 8 - 15 inches annual precipitation. I recommend that Row 1 be fully irrigated once in the spring and then irrigation be shut off to that row for the rest of the growing season.

The best fully replicated accessions from the medium height group planted in 1995 include the "U of I" and "Common" Rocky Mountain juniper and 'Bankers' Dwarf willow. 'Siouxland' Cottonwood and 9005380 Green ash had the best survival of the 1995 tall trees group.

Beginning in 1996, all plots will be evaluated once in the fall with the exception of the 1995 planting which will continue to be evaluated twice each year for several more years.

Table 1.
Mountain Home AFB Woody Inter-Center Strain Trial
Summary of May 9, 1995 Evaluation Data

Common Name	Scientific Name	Accession No.	<u>1/</u> Source	Year Planted	Variety No.	Percent Survival	Plant Height (inches)		<u>2/</u> Vigor	<u>3/</u> Uniformity
							Minimum	Maximum		
Amur Maple	<i>Acer ginnala</i>	Flame	Elsberry (b)	1991	3	75	68.0	82.0	3	3
Silver Maple	<i>Acer saccharinum</i>		Lawyers (b)	1991	71	50	58.0	58.0	5	8
Serviceberry	<i>Amelanchier alnifolia</i>	9021438	Meeker (b)	1992	68	63	29.0	29.0	5	6
Caragana	<i>Caragana arborescens</i>		Lawyers (b)	1991	16	50	36.0	70.0	2	6
Hackberry	<i>Celtis occidentalis</i>	Oahe	Bismark (b)	1991	30	25	42.0	42.0	4	7
Silky Dogwood	<i>Cornus alba stolonifera</i>	Indigo	Rose Lake (b)	1991	69	100	33.0	33.0	3	3
Redosier Dogwood	<i>Cornus sericea sericea</i>	23733	Pullman (c)	1991	50*	70	44.6	44.6	2	3
Redosier Dogwood	<i>Cornus sericea sericea</i>	23739	Pullman (c)	1991	51*	85	48.0	48.0	2	3
Redosier Dogwood	<i>Cornus sericea sericea</i>	23740	Pullman (c)	1991	52*	70	45.4	45.4	3	4
Redosier Dogwood	<i>Cornus sericea sericea</i>	31682	Aberdeen (c)	1991	53*	55	33.5	33.5	4	5
Redosier Dogwood	<i>Cornus sericea sericea</i>	443229	Aberdeen (c)	1991	54	81	36.5	36.5	3	4
Redosier Dogwood	<i>Cornus sericea sericea</i>	9007893	Aberdeen (c)	1991	55*	70	41.2	41.2	3	4
Redosier Dogwood	<i>Cornus sericea sericea</i>	9008382	Aberdeen (c)	1991	56	60	39.2	39.2	3	4
Redosier Dogwood	<i>Cornus sericea sericea</i>	9044827	Aberdeen (c)	1991	57*	92	44.8	44.8	3	3
Redosier Dogwood	<i>Cornus sericea sericea</i>	9067405	Lawyers (b)	1992	58	0			9	9
Redosier Dogwood	<i>Cornus sericea sericea</i>	Flaviramca	Lawyers (b)	1991	60*	75	32.4	32.4	3	4
Redosier Dogwood	<i>Cornus sericea sericea</i>	Mason	Corvallis (c)	1992	61*	0			9	9
Redosier Dogwood	<i>Cornus sericea sericea</i>	Ruby	Big Flats (c)	1991	62*	90	28.4	31.4	3	4
Redosier Dogwood	<i>Cornus sericea sericea</i>	Common	Lawyers (b)	1993	95*	0			9	9
Tatarian Dogwood	<i>Cornus sp.</i>	9007889	Aberdeen (b)	1991	75*	60	44.0	44.0	3	4
Cotoneaster	<i>Cotoneaster acutifolia</i>	Peking	Lawyers (b)	1993	84	25	29.0	29.0	4	7
Cotoneaster	<i>Cotoneaster integerrima</i>	Centennial	Bismark (b)	1992	19	25	42.0	42.0	4	8
Arnold Hawthorn	<i>Crataegus arnoldiana</i>	9005731	Bridger (b)	1992	4	100	29.0	43.0	3	6
Arnold Hawthorn	<i>Crataegus arnoldiana</i>	9015898	Bridger (b)	1991	5	75	50.0	63.0	3	4
Russian Olive	<i>Eleagnus angustifolia</i>	King-Red	Los Lunas (b)	1991	66	100	40.0	88.0	3	4
New Mexico Forestiera	<i>Forestiera neomexicana</i>	Jemez	Los Lunas (b)	1991	41	100	39.0	71.0	4	5
Green Ash	<i>Fraxinus pennsylvanica</i>	Cardan	Bismark (b)	1991	29*	100	63.4	87.2	3	4
Honeylocust	<i>Gleditsia tricanthos</i>	9058032	Lawyers (b)	1992	31	75	27.0	42.0	5	5
Honeylocust	<i>Gleditsia tricanthos</i>	Inermis	Bridger (b)	1992	32	100	68.0	82.0	4	4
Blueleaf Honeysuckle	<i>Lonicera korolkowi</i>	9005399	Aberdeen (p)	1991	10*	63	46.0	55.2	3	4
Blueleaf Honeysuckle	<i>Lonicera korolkowi</i>	9005399	Aberdeen (p)	1992	11	75	27.0	53.0	2	7
Blueleaf Honeysuckle	<i>Lonicera korolkowi</i>	Zabelli	Porter-Lane (p)	1991	14	100	22.0	34.0	5	2
Blueleaf Honeysuckle	<i>Lonicera korolkowi</i>	9007941	Aberdeen (p)	1991	12*	95	47.8	62.4	2	3
Blueleaf Honeysuckle	<i>Lonicera korolkowi</i>	"Mitosis"	Bridger (b)	1992	13*	100	38.6	63.6	2	4
Amur Honeysuckle	<i>Lonicera maackii</i>	477998	Aberdeen (p)	1992	1	100	32.0	46.0	6	6

Table 1 continued.
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 Summary of May 9, 1995 Evaluation Data

Common Name	Scientific Name	Accession No.	<u>1/</u> Source	Year Planted	Variety No.	Percent Survival	Plant Height (inches)		<u>2/</u> Vigor	<u>3/</u> Uniformity
							Minimum	Maximum		
Amur Honeysuckle	<i>Lonicera maackii</i>	Cling-red	Elsberry (b)	1991	2	100	60.0	93.0	2	2
Amur Honeysuckle	<i>Lonicera maackii</i>	Rem-red	Cape May (b)	1993	86	50	16.0	35.0	4	7
Honeysuckle	<i>Lonicera sp.</i>	Freedom	Lawyers (b)	1991	33	100	101.0	101.0	1	1
Manchurian Crabapple	<i>Malus baccata</i>	Midwest	Bismark (b)	1991	39	100	76.0	76.0	2	3
Crabapple	<i>Malus sargentii</i>	Roselow	Rose Lake (b)	1991	25	100	34.0	42.0	2	4
White Spruce	<i>Picea glauca</i>	Conica	Porter-Lane (p)	1991	80	75	23.0	33.0	3	4
Colorado Blue Spruce	<i>Picea pungens</i>		Lawyers (p)	1993	96	75	18.0	18.0	5	5
Austrian Pine	<i>Pinus nigra</i>		Lawyers (b)	1991	7	100	48.0	57.0	2	2
Ponderosa Pine	<i>Pinus ponderosa</i>		Lawyers (p)	1992	48	0			9	9
Scotch Pine	<i>Pinus sylvestris</i>		Lawyers (b)	1991	67	75	50.0	65.0	2	3
Eastern Cottonwood	<i>P. deltooides x balsamifera</i>	Northwest	Aberdeen (c)	1991	26*	80	122.8	139.0	3	3
Lanceleaf Cottonwood	<i>Populus acuminata</i>	9057983	Bridger (b)	1991	34*	85	66.2	96.2	2	3
Lanceleaf Cottonwood	<i>Populus acuminata</i>	9057983	Bridger (b)	1992	35	63	70.0	96.0	3	5
	<i>Populus americana</i>	14039	ARS (c)	1991	49	75	96.8	129.3	3	4
	<i>Populus assiniboine</i>	14520	ARS (c)	1991	43*	100	167.8	208.0	3	4
Cottonwood	<i>Populus deltooides</i>	Daniels	Bridger (b)	1992	21	100	102.5	152.0	3	4
Cottonwood	<i>Populus deltooides</i>	Fremont	Bridger (b)	1992	22	100	109.0	201.0	3	5
Cottonwood	<i>Populus hybrid</i>	14311	ARS (c)	1991	20*	95	149.6	195.8	4	5
Cottonwood X <i>P. nigra</i>	<i>Populus hybrid</i>	14271	ARS (c)	1991	23*	65	118.4	155.6	3	4
Cottonwood X <i>P. nigra</i>	<i>Populus hybrid</i>	14273	ARS (c)	1991	24*	80	165.0	198.4	3	4
Robust Poplar	<i>Populus robusta</i>	9016289	Bridger (b)	1991	63*	90	155.4	172.8	2	2
Robusta Cottonwood	<i>Populus robusta</i>	9031690	Bridger (b)	1992	64	100	140.5	200.0	2	3
Plains Cottonwood	<i>Populus sargentii</i>	9039340	Bridger (b)	1991	44*	100	136.0	179.6	2	2
Plains Cottonwood	<i>Populus sargentii</i>	9057965	Bridger (b)	1991	45*	75	136.2	203.6	3	5
Plains Cottonwood	<i>Populus sargentii</i>	9057965	Bridger (b)	1992	46	100	150.0	169.0	3	4
Eastern Cottonwood	<i>Populus sp.</i>	Norway	Aberdeen (c)	1991	27*	85	128.6	169.2	3	5
White Poplar	<i>Populus sp.</i>	9023965	Bismark (b)	1991	79	75	62.0	161.0	2	4
Mongolian Cherry	<i>Prunus fruticosa</i>	Scarlet	Bismark (b)	1991	40	75	32.0	43.0	2	3
Bird Cherry	<i>Prunus padus</i>	Mayday	Bismark (b)	1991	8	100	57.0	67.0	3	2
Plum	<i>Prunus sp.</i>	CR-3	Bridger (b)	1992	47	100	23.0	73.0	3	5
Wild Plum	<i>Prunus sp.</i>	9062460	Los Lunas (b)	1991	82	100	60.0	80.0	2	3
Russian Almond	<i>Prunus tenella</i>	9006079	Bismark (b)	1991	65	50	28.0	28.0	3	4
Russian almond	<i>Prunus tenella</i>	9006079	Bridger (b)	1993	87	75	7.0	36.0	4	7
Nanking Cherry	<i>Prunus tomentosa</i>		Lawyers (b)	1991	42	100	36.0	58.0	2	3
Common Chokecherry	<i>Prunus virginiana</i>	9004629	Los Lunas (b)	1991	17*	100	49.2	85.4	2	4

Table 1 continued.
 Mountain Home AFB Woody Inter-Center Strain Trial
 Summary of May 9, 1995 Evaluation Data

Common Name	Scientific Name	Accession No.	<u>1/</u> Source	Year Planted	Variety No.	Percent Survival	Plant Height (inches)		<u>2/</u> Vigor	<u>3/</u> Uniformity
							Minimum	Maximum		
Common Chokecherry	<i>Prunus virginiana</i>	Shuberts	Bismark (b)	1991	18*	90	55.0	73.0	2	4
Skunkbush Sumac	<i>Rhus trilobata</i>	9006459	Los Lunas (b)	1991	72*	80	34.4	44.0	2	3
Skunkbush Sumac	<i>Rhus trilobata</i>	Bighorn	Los Lunas (b)	1991	73*	65	56.4	61.2	2	3
Skunkbush Sumac	<i>Rhus trilobata</i>	Wasatch	Lawyers (b)	1992	74	75	28.0	57.0	2	3
Woods Rose	<i>Rosa woodsii</i>		Lawyers (b)	1991	83	100	36.0	68.0	2	3
Mackenzie Willow	<i>S.rigida var. mackenziana</i>	20100	Pullman (c)	1991	38*	100	100.0	100.0	2	2
White Willow	<i>Salix alba</i>	9044859	Aberdeen (c)	1991	81*	90	81.2	138.6	3	4
Brittle Willow	<i>Salix fragilis</i>	370126	Aberdeen (c)	1991	15	50	49.0	60.0	3	5
Lemmon Willow	<i>Salix lemonii</i>	20121	Pullman (c)	1991	37*	90	90.2	90.2	2	2
Austree Willow	<i>Salix matsudana x alba</i>	9041211	Lockeford (c)	1991	6*	70	159.0	194.2	3	6
Laurel Willow	<i>Salix pentandra</i>	9005049	Aberdeen (c)	1991	36*	100	63.0	71.0	2	3
Blue Arctic Willow	<i>Salix purpurea</i>	9005050	Porter-Lane (p)	1991	9*	95	54.8	54.8	1	1
Golden Willow	<i>Salix vitellini</i>	9047349	Bismark (b)	1991	28*	95	98.6	117.8	2	3
Silver Buffaloberry	<i>Shepherdia argentea</i>	Sakakawea	Bismark (b)	1991	70*	50	49.0	69.3	4	5
Villosa Lilac	<i>Syringa villosa</i>	9006228	Bismark (b)	1991	76	100	24.0	36.0	5	6
Villosa Lilac	<i>Syringa villosa</i>	ND-83	Bridger (b)	1991	77	100	22.0	41.0	4	7
Villosa Lilac	<i>Syringa villosa</i>	ND-83	Bridger (b)	1992	78	75	26.0	26.0	4	5
Lilac	<i>Syringa vulgaris</i>	Common	Lawyers (b)	1993	85	75	21.0	35.0	5	6

1/ Letter in () indicates type of stock planted; b=bareroot, c=cutting, p=potted.

2/ Vigor is a subjective rating based on a scale of 1-9 with 1 best and 9 dead.

3/ Uniformity is a subjective rating based upon consistent height, branching pattern, and stem density with 1 best and 9 worst.

* Accession replicated 5 or more times.

Table 2.
Mountain Home AFB Woody Inter-Center Strain Trial
Summary of September 20, 1995 Evaluation Data

Common Name	Scientific Name	Accession No.	<u>1/</u> Source	Year Planted	Variety No.	Percent Survival	Plant Height (inches)		<u>2/</u> Vigor	<u>3/</u> Uniformity
							Minimum	Maximum		
Amur Maple	<i>Acer ginnala</i>	Flame	Elsberry (b)	1991	3	75	78.3	93.3	4	4
Silver Maple	<i>Acer saccharinum</i>		Lawyers (b)	1991	71	50	65.4	80.3	3	5
Serviceberry	<i>Amelanchier alnifolia</i>	9021438	Meeker (b)	1992	68	63	36.2	40.6	4	6
Fourwing saltbush	<i>Atriplex canescens</i>	9067480	Aberdeen (p)	1995	97*	30	10.8	13.5	4	7
Fourwing saltbush	<i>Atriplex canescens</i>	Wytana	Aberdeen (p)	1995	98*	75	3.9	5.4	4	6
Caragana	<i>Caragana arborescens</i>		Lawyers (b)	1991	16	50	43.3	68.1	4	5
Hackberry	<i>Celtis occidentalis</i>	Oahe	Bismark (b)	1991	30	25	50.4	50.4	3	6
Silky Dogwood	<i>Cornus alba stolonifera</i>	Indigo	Rose Lake (b)	1991	69	100	35.8	57.5	3	4
Redosier Dogwood	<i>Cornus sericea sericea</i>	23733	Pullman (c)	1991	50*	75	61.7	61.7	2	3
Redosier Dogwood	<i>Cornus sericea sericea</i>	23739	Pullman (c)	1991	51*	80	64.6	65.0	3	3
Redosier Dogwood	<i>Cornus sericea sericea</i>	23740	Pullman (c)	1991	52*	75	44.8	52.6	3	4
Redosier Dogwood	<i>Cornus sericea sericea</i>	31682	Aberdeen (c)	1991	53*	50	36.1	36.1	5	5
Redosier Dogwood	<i>Cornus sericea sericea</i>	443229	Aberdeen (c)	1991	54	75	69.9	69.9	2	3
Redosier Dogwood	<i>Cornus sericea sericea</i>	9007893	Aberdeen (c)	1991	55*	65	62.7	62.7	2	3
Redosier Dogwood	<i>Cornus sericea sericea</i>	9008382	Aberdeen (c)	1991	56	65	50.6	59.8	3	4
Redosier Dogwood	<i>Cornus sericea sericea</i>	9044827	Aberdeen (c)	1991	57*	92	63.5	68.4	3	3
Redosier Dogwood	<i>Cornus sericea sericea</i>	9067405	Lawyers (b)	1992	58	6	9.9	9.9	8	8
Redosier Dogwood	<i>Cornus sericea sericea</i>	Flaviramca	Lawyers (b)	1991	60*	75	43.5	43.5	2	3
Redosier Dogwood	<i>Cornus sericea sericea</i>	Mason	Corvallis (c)	1992	61*	30	20.2	36.9	6	7
Redosier Dogwood	<i>Cornus sericea sericea</i>	Ruby	Big Flats (c)	1991	62*	90	37.4	42.4	3	4
Redosier Dogwood	<i>Cornus sericea sericea</i>	Common	Lawyers (b)	1993	95*	0	0	0	9	9
Tatarian Dogwood	<i>Cornus sp.</i>	9007889	Aberdeen (b)	1991	75*	60	48.6	56.7	4	4
Cotoneaster	<i>Cotoneaster acutifolia</i>	Peking	Lawyers (b)	1993	84	25	15.8	15.8	3	5
Cotoneaster	<i>Cotoneaster integerrima</i>	Centennial	Bismark (b)	1992	19	25	61.8	61.8	5	6
Arnold Hawthorn	<i>Crataegus arnoldiana</i>	9005731	Bridger (b)	1992	4	100	39.4	55.1	3	4
Arnold Hawthorn	<i>Crataegus arnoldiana</i>	9015898	Bridger (b)	1991	5	75	69.3	69.3	2	3
Russian Olive	<i>Eleagnus angustifolia</i>	King-Red	Los Lunas (b)	1991	66	100	62.2	122.1	2	3
New Mexico Forestiera	<i>Forestiera neomexicana</i>	Jemez	Los Lunas (b)	1991	41	100	48.0	76.4	3	3
Green Ash	<i>Fraxinus pennsylvanica</i>	Cardan	Bismark (b)	1991	29*	100	87.2	91.7	2	2
Green Ash	<i>Fraxinus pennsylvanica</i>	9005380	Aberdeen (p)	1995	99*	90	12.3	21.7	2	4
Green Ash	<i>Fraxinus pennsylvanica</i>	9005381	Aberdeen (p)	1995	100*	80	16.0	18.7	2	4
Honeylocust	<i>Gleditsia tricanthos</i>	9058032	Lawyers (b)	1992	31	75	35.2	58.8	4	6
Honeylocust	<i>Gleditsia tricanthos</i>	Inermis	Bridger (b)	1992	32	100	57.9	98.0	3	6
Rocky Mountain Juniper	<i>Juniperus scopulorum</i>	U of I	Univ. of Idaho (p)	1995	101*	100	13.5	21.1	3	3
Rocky Mountain Juniper	<i>Juniperus scopulorum</i>	Common	Commercial (p)	1995	102*	100	9.1	15.9	3	4

Table 2 continued.
 Mountain Home AFB Woody Inter-Center Strain Trial
 Summary of September 20, 1995 Evaluation Data

Common Name	Scientific Name	Accession No.	<u>1/</u> Source	Year Planted	Variety No.	Percent Survival	Plant Height (inches)		<u>2/</u> Vigor	<u>3/</u> Uniformity
							Minimum	Maximum		
Blueleaf Honeysuckle	<i>Lonicera korolkowi</i>	9005399	Aberdeen (p)	1991	10*	58	67.6	67.6	3	4
Blueleaf Honeysuckle	<i>Lonicera korolkowi</i>	9005399	Aberdeen (p)	1992	11	75	28.3	77.2	5	6
Blueleaf Honeysuckle	<i>Lonicera korolkowi</i>	9007941	Aberdeen (p)	1991	12*	65	70.4	77.2	3	3
Blueleaf Honeysuckle	<i>Lonicera korolkowi</i>	"Mitosis"	Bridger (b)	1992	13*	100	54.3	85.2	3	3
Blueleaf Honeysuckle	<i>Lonicera korolkowi</i>	Zabelli	Porter-Lane (p)	1991	14	100	24.0	33.1	8	5
Amur Honeysuckle	<i>Lonicera maackii</i>	477998	Aberdeen (p)	1992	1	100	39.0	59.1	2	3
Amur Honeysuckle	<i>Lonicera maackii</i>	Cling-red	Elsberry (b)	1991	2	100	76.0	91.3	2	3
Amur Honeysuckle	<i>Lonicera maackii</i>	Rem-red	Cape May (b)	1993	86	25	47.2	47.2	3	5
Honeysuckle	<i>Lonicera sp.</i>	Freedom	Lawyers (b)	1991	33	100	103.5	103.5	2	2
Manchurian Crabapple	<i>Malus baccata</i>	Midwest	Bismark (b)	1991	39	100	107.9	107.9	3	3
Crabapple	<i>Malus sargentii</i>	Roselow	Rose Lake (b)	1991	25	100	10.2	38.2	5	6
Eastern Cottonwood	<i>P. deltoides x balsamifera</i>	Northwest	Aberdeen (c)	1991	26*	85	142.8	185.2	3	3
White Spruce	<i>Picea glauca</i>	Conica	Porter-Lane (p)	1991	80	75	19.7	35.4	4	4
Colorado Blue Spruce	<i>Picea pungens</i>		Lawyers (p)	1993	96	50	3.5	25.2	7	6
Austrian Pine	<i>Pinus nigra</i>		Lawyers (b)	1991	7	100	18.5	57.5	1	1
Ponderosa Pine	<i>Pinus ponderosa</i>		Lawyers (p)	1992	48	25	6.7	6.7	4	7
Scotch Pine	<i>Pinus sylvestris</i>		Lawyers (b)	1991	67	75	39.4	90.9	3	4
Lanceleaf Cottonwood	<i>Populus acuminata</i>	9057983	Bridger (b)	1991	34*	95	80.2	131.3	2	3
Lanceleaf Cottonwood	<i>Populus acuminata</i>	9057983	Bridger (b)	1992	35	63	75.8	153.4	3	4
	<i>Populus americana</i>	14039	ARS (c)	1991	49	81	119.9	207.3	3	4
	<i>Populus assiniboine</i>	14520	ARS (c)	1991	43*	100	206.4	229.7	3	4
Cottonwood	<i>Populus deltoides</i>	Daniels	Bridger (b)	1992	21	88	163.4	194.9	3	5
Cottonwood	<i>Populus deltoides</i>	Fremont	Bridger (b)	1992	22	100	129.9	246.8	2	4
Eastern Cottonwood	<i>Populus deltoides</i>	Siouxland	Aberdeen (p)	1995	108*	95	27.6	47.0	3	4
Cottonwood	<i>Populus hybrid</i>	14311	ARS (c)	1991	20*	95	162.1	218.3	3	4
Cottonwood X <i>P. nigra</i>	<i>Populus hybrid</i>	14271	ARS (c)	1991	23*	65	160.2	195.0	4	4
Cottonwood X <i>P. nigra</i>	<i>Populus hybrid</i>	14273	ARS (c)	1991	24*	80	212.4	231.0	3	4
Robust Poplar	<i>Populus robusta</i>	9016289	Bridger (b)	1991	63*	85	202.3	232.6	2	3
Robusta Cottonwood	<i>Populus robusta</i>	9031690	Bridger (b)	1992	64	100	276.6	276.6	2	3
Plains Cottonwood	<i>Populus sargentii</i>	9039340	Bridger (b)	1991	44*	100	140.4	203.9	3	4
Plains Cottonwood	<i>Populus sargentii</i>	9057965	Bridger (b)	1991	45*	75	169.8	235.5	3	4
Plains Cottonwood	<i>Populus sargentii</i>	9057965	Bridger (b)	1992	46	100	245.3	245.3	2	3
Eastern Cottonwood	<i>Populus sp.</i>	Norway	Aberdeen (c)	1991	27*	80	170.2	208.2	3	4
White Poplar	<i>Populus sp.</i>	9023965	Bismark (b)	1991	79	75	119.7	203.5	3	4
Hybrid Poplar	<i>Populus sp.</i>	Ida-hybrid	Univ. of Idaho (p)	1995	109*	85	33.8	66.4	3	4

Table 2 continued.
 Mountain Home AFB Woody Inter-Center Strain Trial
 Summary of September 20, 1995 Evaluation Data

Common Name	Scientific Name	Accession No.	<u>1/</u> Source	Year Planted	Variety No.	Percent Survival	Plant Height (inches)		<u>2/</u> Vigor	<u>3/</u> Uniformity
							Minimum	Maximum		
Hybrid Poplar	<i>Populus sp.</i>	Canam	Lincoln-Oakes (b)	1995	110	50	24.8	67.3	3	6
Carolina Poplar	<i>Populus x euramericana</i>	Imperial	Aberdeen (p)	1995	107*	85	35.4	48.7	3	4
Mongolian Cherry	<i>Prunus fruticosa</i>	Scarlet	Bismark (b)	1991	40	100	30.3	45.3	2	3
Bird Cherry	<i>Prunus padus</i>	Mayday	Bismark (b)	1991	8	100	75.6	75.6	4	3
Plum	<i>Prunus sp.</i>	CR-3	Bridger (b)	1992	47	100	39.4	85.0	3	5
Wild Plum	<i>Prunus sp.</i>	9062460	Los Lunas (b)	1991	82	100	88.6	88.6	3	4
Russian Almond	<i>Prunus tenella</i>	9006079	Bismark (b)	1991	65	75	18.9	35.8	2	4
Russian almond	<i>Prunus tenella</i>	9006079	Bridger (b)	1993	87	75	13.0	36.2	3	5
Nanking Cherry	<i>Prunus tomentosa</i>		Lawyers (b)	1991	42	100	39.4	39.4	2	3
Common Chokecherry	<i>Prunus virginiana</i>	9004629	Los Lunas (b)	1991	17*	95	50.2	101.0	3	4
Common Chokecherry	<i>Prunus virginiana</i>	Shuberts	Bismark (b)	1991	18*	90	66.8	91.1	2	4
Common Chokecherry	<i>Prunus virginiana</i>	9031694	Aberdeen (p)	1995	103*	50	34.2	37.9	3	5
Common Chokecherry	<i>Prunus virginiana</i>	9007959	Aberdeen (p)	1995	104	50	15.5	34.7	2	5
Skunkbush Sumac	<i>Rhus trilobata</i>	9006459	Los Lunas (b)	1991	72*	75	50.2	56.1	2	3
Skunkbush Sumac	<i>Rhus trilobata</i>	Bighorn	Los Lunas (b)	1991	73*	85	49.1	61.7	2	3
Skunkbush Sumac	<i>Rhus trilobata</i>	Wasatch	Lawyers (b)	1992	74	75	23.6	77.6	3	5
Woods Rose	<i>Rosa woodsii</i>		Lawyers (b)	1991	83	100	48.8	60.6	2	3
Mackenzie Willow	<i>S.rigida var. mackenziana</i>	20100	Pullman (c)	1991	38*	100	139.0	139.0	3	3
White Willow	<i>Salix alba</i>	9044859	Aberdeen (c)	1991	81*	90	108.2	149.8	3	3
Brittle Willow	<i>Salix fragilis</i>	370126	Aberdeen (c)	1991	15	50	70.1	98.4	3	4
Lemmon Willow	<i>Salix lemonii</i>	20121	Pullman (c)	1991	37*	90	123.2	123.2	2	3
Austree Willow	<i>Salix matsudana x alba</i>	9041211	Lockeford (c)	1991	6*	65	204.3	221.6	4	5
Laurel Willow	<i>Salix pentandra</i>	9005049	Aberdeen (c)	1991	36*	95	67.1	81.0	2	3
Blue Arctic Willow	<i>Salix purpurea</i>	9005050	Porter-Lane (p)	1991	9*	100	77.1	77.1	2	3
Golden Willow	<i>Salix vitellini</i>	9047349	Bismark (b)	1991	28*	95	116.7	120.7	3	3
Dwarf Willow	<i>Salix x cotteti</i>	Bankers	Aberdeen (p)	1995	111	100	24.2	34.3	2	3
Silver Buffaloberry	<i>Shepherdia argentea</i>	Sakakawea	Bismark (b)	1991	70*	50	20.2	104.9	5	5
Silver Buffaloberry	<i>Shepherdia argentea</i>	9008025	Aberdeen (p)	1995	105*	40	15.0	19.6	4	6
Silver Buffaloberry	<i>Shepherdia argentea</i>	9005547	Aberdeen (p)	1995	106*	55	12.5	22.8	4	5
Villosa Lilac	<i>Syringa villosa</i>	9006228	Bismark (b)	1991	76	75	27.2	37.4	6	6
Villosa Lilac	<i>Syringa villosa</i>	ND-83	Bridger (b)	1991	77	100	20.9	47.2	6	6
Villosa Lilac	<i>Syringa villosa</i>	ND-83	Bridger (b)	1992	78	75	33.5	54.3	4	5
Lilac	<i>Syringa vulgaris</i>	Common	Lawyers (b)	1993	85	75	31.5	31.5	3	4

1/ Letter in () indicates type of stock planted; b=bareroot, c=cutting, p=potted. 2/ Vigor is a subjective rating based on a scale of 1-9 with 1 best and 9 dead. 3/ Uniformity is a subjective rating based upon consistent height, branching pattern, and stem density with 1 best and 9 worst. * Accession replicated 5 or more times.

Table 3.
Performance of Replicated Accessions at Mountain Home AFB Woody Inter-Center Strain Trial. Based upon September 20, 1995 evaluations. Average of 5 replications and ranked from best to worst survival within each growth form group.

<u>Common Name</u>	<u>Accession</u>	<u>% Survival</u>	<u>1/ Vigor</u>	<u>Leader Length (inches)</u>	<u>Total Height (inches)</u>	<u>1/ Uniformity</u>
Low Growing Shrubs 1991 Planting						
Blue arctic willow	9005050	95	2.4	9.5	74.1	3.4
Redosier dogwood	9044827	92	2.5	19.5	65.9	3.0
Redosier dogwood	Ruby	90	2.8	12.8	39.9	4.0
Skunkbush sumac	Bighorn	85	2.0	12.6	55.4	3.2
Redosier dogwood	23739	80	2.8	18.1	64.8	3.4
Redosier dogwood	Flaviramca	75	2.2	18.5	43.5	3.4
Skunkbush sumac	9006459	75	2.0	13.5	53.2	3.2
Redosier dogwood	23740	75	2.8	15.1	48.7	3.8
Redosier dogwood	23733	75	2.4	16.5	61.7	3.2
	Average	74	2.7	15.9	57.5	3.6
Blueleaf honeysuckle	9007941	65	2.6	21.9	73.8	3.4
Redosier dogwood	9007893	65	2.2	16.5	62.7	3.2
Redosier dogwood	9008382	65	2.8	20.0	55.2	3.6
Tatarian dogwood	9007889	60	3.8	12.8	52.6	2.7
Blueleaf honeysuckle	9005399	58	2.7	10.2	67.6	4.3
Redosier dogwood	31682	50	4.8	10.2	36.1	5.4
Medium Height Shrubs and Small Trees 1991 planting						
Mackenzie willow	20100	100	3.0	27.0	138.9	3.2
Chokecherry	9004629	95	2.8	18.7	75.6	4.0
Chokecherry	Shuberts	90	2.4	14.1	78.9	3.6
Lemmon willow	20121	90	2.0	31.2	123.2	2.8
	Average	85	3.0	19.7	90.9	3.8
Silver buffaloberry	Sakakawea	50	4.6	7.6	37.8	5.4
Tall Trees 1991 Planting						
Green ash	Cardan	100	2.2	13.9	89.5	2.4
<i>Populus assiniboine</i>	14520	100	3.0	9.4	218.0	4.0
*Plains cottonwood	9039340	100	3.4	9.1	172.2	3.6
*Laurel willow	9005049	95	2.4	9.5	74.1	3.4
Cottonwood	14311	95	3.0	9.2	190.2	4.0
*Golden willow	9047349	95	2.6	21.5	118.7	3.0
Lanceleaf cottonwood	9057983	95	2.4	8.4	105.8	3.0
White willow	9044859	90	2.8	12.4	129.0	3.2
	Average	87	2.9	12.0	165.5	3.6
*Robust poplar	9016289	85	2.4	12.2	217.4	2.6
Eastern cottonwood	Northwest	85	3.2	11.8	164.0	3.4
Eastern cottonwood	Norway	80	3.0	11.3	189.2	3.8
*Cottonwood X <i>P. nigra</i>	14273	80	3.0	9.8	221.7	4.4
Plains cottonwood	9057965	75	2.8	14.4	202.7	3.8
Austree willow	9041211	65	3.8	19.8	212.9	4.8
Cottonwood X <i>P. nigra</i>	14271	65	3.6	7.9	177.6	4.2

Table 3 continued.

Common Name	Accession	% Survival	<u>1/</u> Vigor	Leader Length (inches)	Total Height (inches)	<u>1/</u> Uniformity
Low Growing Shrubs 1992 Planting						
Blueleaf Honeysuckle	Mitosis	100	2.8	19.4	69.8	3.2
	Average	65	4.5	12.3	45.8	4.9
Redosier dogwood	Mason	30	6.2	5.1	21.9	6.6
Low Growing Shrubs 1995 Planting						
Fourwing saltbush	Wytana	75	4.0	9.2	4.7	6.4
	Average	53	4.2	10.4	6.9	8.4
Fourwing saltbush	9067480	30	4.4	11.4	12.2	7.4
Medium Height Shrubs and Small Trees 1995 Planting						
Rocky Mtn. juniper	U of I	100	2.6	5.4	17.3	3.4
Rocky Mtn. juniper	Common	100	2.6	5.7	12.5	3.8
Dwarf willow	Bankers	100	2.4	14.6	29.2	3.4
	Average	74	3.1	10.4	21.7	4.4
Silver buffaloberry	9005547	55	4.4	12.6	17.6	5.2
Chokecherry	9031694	50	2.6	12.6	36.0	4.8
Silver buffaloberry	9008025	40	3.8	11.6	17.3	5.8
Tall Trees 1995 Planting						
Cottonwood	Siouxland	95	2.6	13.1	37.3	3.6
Green ash	9005380	90	2.2	10.0	17.0	4.0
	Average	87	2.6	10.5	32.8	3.8
Carolina poplar	Imperial	85	2.8	12.3	42.0	3.6
Hybrid poplar	Ida-hybrid	85	3.0	10.5	50.1	4.0
Green ash	9005381	80	2.4	6.5	17.4	3.6

1/ Rated 1-9 with 1 best, 9 worst

- Tall tree accessions exhibiting good traits for windbreak suitability

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