Chinese Inter-Center Strain Trial
Aberdeen Plant Materials Center
1997 Progress Report
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INTRODUCTION

The purpose of the Chinese Inter-Center Strain Trial is to compare plants native to northern China with plant materials currently being used or tested in the western United States. Inter-Center strain trials were established at Bridger, Montana, Pullman, Washington, and Aberdeen, Idaho Plant Materials Centers during the spring of 1994 to allow comparison of the plant materials over a broad and ecologically diverse area and to identify plant adaptation and performance. This report describes the progress of the Chinese Inter-Center Strain Trial at the Aberdeen Plant Materials Center during the fourth year of evaluation.

For a detailed description of the project site characteristics and methods see the Chinese Inter-Center Strain Trial - 1994 Progress Report.

1997 EVALUATIONS AND DISCUSSION

Precipitation during the 1997 crop year was 164 percent of normal. Winter and summer precipitation was much above normal. The inter-center strain trial was not irrigated during 1997. The following summarizes precipitation data during the 1997 crop year which was collected at the University of Idaho Aberdeen Research and Extension Center:

Month	Precipitation		Normal	
	(in.)	(mm.)	(in.)	(mm.)
October 1996	0.30	7.6	0.62	15.7
November	0.70	17.8	0.78	19.8
December	3.10	78.7	0.91	23.1
January 1997	1.40	35.6	0.77	19.6
February	1.00	25.4	0.54	13.7
March	0.53	13.5	0.63	16.0
April	1.05	26.7	0.75	19.1
May	0.62	15.8	1.22	31.0
June	1.83	46.5	1.11	28.2
July	1.44	36.6	0.26	6.6
August	0.91	23.1	0.47	11.9
September	1.34	34.0	0.55	14.0
Total	14.10	361.3	8.61	218.7

Weed control of the shrub and legume block was accomplished by hand hoeing as needed during the growing season. The grass plots are well established and only minimal weed control was needed.

On July 22, plant height, vigor and forage production data were collected from all plots with the exception of the shrub plots in which forage production data was not collected. On September 4, percent stand and regrowth data were collected. Table 1 summarizes

the data. Evaluation data was collected by the same procedure as used in previous years. Forage samples were allowed to dry until August 20, when they were weighed and data was converted to dry matter yield.

Height of the grasses ranged from 12.7 cm for 9057958 *Elymus nutans* to 115.3 cm for 'Bozoisky' Russian wildrye. Eight accessions had the best vigor ratings (2.0). Two accessions with the worst vigor ratings and still alive were 9057958 *Elymus nutans* and 9075982 *Puccinellia tenuifolia*.

Dry matter forage ranged from 0.375 MT/ha for 9057963 *Puccinellia chinempoensis* to 5.708 MT/ha for 'Hycrest' crested wheatgrass (MT/ha x 0.446 = ton (U.S.)/acre). Analysis of variance (ANOVA) and means separation using Duncan's Multiple Range Test were completed for the dry matter forage production data and is also shown on Table 1.

Percent stand and regrowth was evaluated on September 4. Percent stand ranged from 2.7 percent for 9057958 *Elymus nutans* to 94.3 percent for 9075983 *Leymus chinensis* and 'Rosana' western wheatgrass. Regrowth ranged from 2.3 cm for 9058215 *Roegneria pendulina* to 33.7 cm for 9069758 *Achnatherum splendens*.

Height of the legumes during the July 22 evaluation ranged from 44.7 cm for 'Lutana' cicer milkvetch to 84.7 cm for 9057946 *Astragalus adsurgens*. The best vigor rating (2.0) was for 'Spredor III' alfalfa.

Dry matter yield ranged from 1.622 MT/ha for 9057946 *Astragalus adsurgens* to 8.675 MT/ha for Spredor III. Analysis of variance (ANOVA) and means separation using Duncan's Multiple Range Test were completed for the dry matter forage production data and is also shown on Table 1. The shrubs were not sampled for dry matter yield.

Percent stand ranged from 41.7 percent for 9057946 *Astragalus adsurgens* to 87.8 percent for Spredor III. Spredor III also had the greatest regrowth of the legume accessions.

9057950 *Ceratoides arborescens* was the tallest, most vigorous and had the best stand of the shrub accessions.

The grass and legume plots were mowed to a stubble height of 5 cm in late September to remove current years' growth. Annual evaluations of the trial will end after the next growing season.

Table 1
Chinese Inter-Center Strain Trial, Field 21 Fish and Game Farm
Summary of 1997 Evaluation

Accession	Genus and Species	Plant Height (cm)	1/ Vigor	2/ Dry Matter Yield MT/ha		Percent Stand	Regrowth (cm)
	Evaluation Date	7/22/97	7/22/97	7/22/97		9/4/97	9/4/97
		Grasses					
Hycrest	Agropyron cristatum X desertorum	71.0	2.3	5.708	a	59.3	12.0
P-27	Agropyron fragile ssp. sibiricum	64.3	2.0	5.414	ab	57.7	15.3
9058207	Agropyron desertorum	66.0	2.7	5.027	abc	62.0	10.3
9075984	Elymus cylindricus X dahuricus	112.0	2.0	4.750	abc	60.3	16.7
9075985	Elymus purpuraristatus	102.0	2.3	4.644	abcd	61.0	15.7
9075983	Leymus chinensis	69.3	2.0	4.425	abcde	94.3	16.3
9075955	Elymus cylindricus	108.0	2.0	4.270	abcde	62.7	16.3
9058210	Elymus dahuricus	99.3	2.7	4.197	abcde	63.7	17.3
9058209	Agropyron sibiricum	66.3	2.3	4.180	abcde	73.3	10.7
9069758	Achnatherum splendens	69.0	2.0	4.025	abcde	52.7	33.7
Rosana	Pascopyrum smithii	60.7	2.0	3.994	abcde	94.3	15.0
Bozoisky	Psathyrostachys juncea	115.3	2.0	3.902	abcde	78.7	24.0
9058211	Elymus exelsus	114.3	2.3	3.756	abcdef	53.7	17.3
Bannock	Elymus lanceolatus ssp. lanceolatus	75.7	2.0	3.583	abcdef	92.0	18.3
9058214	Roegneria ciliaris	67.0	4.0	3.314	abcdef	32.7	2.7
9057959	Elymus tangutorum	76.3	2.3	3.297	abcdef	30.3	20.0
9058212	Elymus nutans	80.3	2.7	3.272	abcdef	34.7	5.0
Lodorm	Nassella viridula	66.0	2.3	3.161	abcdef	29.3	13.7
9057956	Elymus excelsus	98.7	2.3	3.047	bcdef	48.0	14.7
Schwendimar	Elymus lanceolatus ssp. lanceolatus	67.7	3.7	2.847	bcdefg	53.0	18.3
Pryor	Elymus trachycaulus ssp. trachycaulus	72.7	3.0	2.764	cdefg	45.0	14.3
9057957	Elymus excelsus	89.0	2.7	2.692	cdefg	61.0	18.3
Critana	Elymus lanceolatus ssp. lanceolatus	54.7	2.7	2.583	cdefg	66.7	12.0
9075989	Hordeum brevisubulatum	73.3	3.3	2.528	cdefg	82.0	16.3
9058213	Elymus tangutorum	71.3	4.3	2.053	defg	37.7	11.3
9057954	Elymus purpurascens	38.3	6.7	1.897	efg	29.3	16.7
9058206	Agropyron cristatum	63.0	4.7	1.861	efg	21.3	10.3
Goldar	Pseudoroegneria spicata ssp. spicata	66.7	3.7	1.833	efg	21.0	7.7
9075990	Agropyron sibiricum	58.0	3.7	1.264	fg	16.0	8.7
9075991	Agropyron mongolicum	46.0	6.7	1.181	fg	10.3	10.7
9057963	Puccinellia chinempoensis	25.7	7.0	0.375	g	0.0	0.0

Table 1 continued.
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	Evaluation Date	7/22/97	7/22/97	7/22/97	9/4/97	9/4/97
			Grasses continued.			
9057962	Agropyron mongolicum	0.0	9.0	0.000 *	0.0	0.0
9057958	Elymus nutans	12.7	8.7	0.000 *	2.7	8.7
9058217	Stipa grandis	21.7	7.7	0.000 *	0.0	0.0
9058208	Agropyron mongolicum	0.0	9.0	0.000 *	5.3	12.0
9058215	Roegneria pendulina	0.0	9.0	0.000 *	3.3	2.3
540441	Leymus arenarius	37.0	5.7	0.000 *	15.3	16.0
9005491	Puccinellia nuttalliana	24.7	7.7	0.000 *	0.0	0.0
9075982	Puccinellia tenuifolia	15.3	8.7	0.000 *	0.0	0.0
			Mean	2.611		
			CV	39.69 %		
			LSD	2.129		
			Legumes & Shrubs			
Spredor III	Medicago sativa	53.3	2.0	8.675 a	87.8	39.3
Lutana	Astragalus cicer	44.7	3.3	8.136 a	63.7	15.3
9057988	Astragalus adsurgens	58.0	5.0	2.080 b	41.7	8.7
9057946	Astragalus adsurgens	84.7	4.7	1.622 b	54.3	12.7
9075986	Melissitus ruthenicus 3/					
			Mean	5.128		
			CV	48.61 %		
			LSD	4.694		
9057950	Ceratoides arborescens	120.3	2.0	NA	80.0	NA
9063535	Krascheninnikovia lanata	53.0	2.3	NA	46.5	NA
9067481	Krascheninnikovia lanata 4/					

1/ Vigor rated 1-9, 1 Best 9 Worst.
2/ Means within a column followed by the same letter are not significantly different as determined by Duncan's Multiple Range Test, P=0.05. Accessions marked with an * were not included in the analysis of variance. MT/ha x 0.446 = ton (U.S.)/acre
3/ This accession was removed from test because of severe winterkill.
4/ This accession did not emerge after planting resulting in no data.