Chinese Inter-Center Strain Trial
Aberdeen Plant Materials Center
1998 Progress Report
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INTRODUCTION

The purpose of the Chinese Inter-Center Strain Trial is to compare plants native to Inner Mongolia 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 fifth and final year of evaluation.

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

1998 EVALUATIONS AND DISCUSSION

Precipitation during the 1998 crop year was 145 percent of normal. Precipitation during the months of January, February, July and September was much above normal. The inter-center strain trial was not irrigated during 1998. The following summarizes precipitation data during the 1998 crop year which was collected at the University of Idaho Aberdeen Research and Extension Center:

Month	Precipitation		Normal	
	(in.)	(mm.)	(in.)	(mm.)
October 1997	1.19	30.2	0.62	15.7
November	0.31	7.9	0.78	19.8
December	0.51	12.9	0.91	23.1
January 1998	2.00	50.8	0.77	19.6
February	1.52	38.6	0.54	13.7
March	0.63	16.0	0.63	16.0
April	0.16	4.1	0.75	19.1
May	0.96	24.4	1.22	31.0
June	1.76	44.7	1.11	28.2
July	1.04	26.4	0.26	6.6
August	0.03	0.8	0.47	11.9
September	2.41	61.2	0.55	14.0
Total	12.52	318.0	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 were 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 24, 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 10.3 cm for 540441 Leymus arenarius to 92.0 cm for 9075984 Elymus dahuricus. 'Rosana' western wheatgrass had the best vigor rating (1.3). There were seven accessions rated 9.0 (worst).

Dry matter forage ranged from 0.166 MT/ha for 9058214 Elymus ciliaris to 5.012 MT/ha for 'P-27' Siberian 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 24. Percent stand ranged from 0.3 percent for 9057958 Elymus nutans to 95.0 percent for 9075983 Leymus chinensis. Regrowth ranged from 2.7 cm for 9058214 Elymus ciliaris to 36.0 cm for 9069758 Achnatherum splendens.

Height of the legumes during the July 22 evaluation ranged from 16.0 cm for 9075988 Astragalus adsurgens to 46.7 cm for 'Spredor III' alfalfa. Spredor III and 'Lutana' cicer milkvetch had the best vigor ratings (3.3).

Dry matter yield ranged from 0.615 MT/ha for 9057946 Astragalus adsurgens to 4.605 MT/ha for Lutana cicer milkvetch. Analysis of variance (ANOVA) was completed for the dry matter forage production data and failed to show any significant differences for the legume accessions. The shrubs were not sampled for dry matter yield.

Percent stand ranged from 55.0 percent for 9075988 Astragalus adsurgens to 61.5 percent for 9057946 Astragalus adsurgens. Accession number 9057946 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.

On October 1, Ouyang Haihong, Tong Yanan, Shen Xihuan and Yu Jing Zhong from the Peoples Republic of China and Dan Ogle, Plant Materials Specialist reviewed the trial as part of a western regional plant materials tour for the Chinese scientists.

1998 is the last year of evaluations. A summary of evaluation data and final report will be completed.

Table 1
Chinese Inter-Center Strain Trial, Field 21 Fish and Game Farm
Summary of 1998 Evaluation

Accession	Genus and Species	2/ 1/ Dry Matter Yield MT/ha	Percent Stand	Plant Height (cm) Regrowth (cm)		Vigor
Evaluation Date		7/22/98	7/22/98	7/22/98	9/24/98	9/24/98
Grasses						
P-27	Agropyron fragile ssp. sibiricum	71.7	2.7	5.012 a	56.0	16.0
9075983	Leymus chinensis	49.7	1.7	4.012 ab	95.0	15.7
9058209	Agropyron sibiricum	66.3	2.3	3.596 abc	70.0	12.0
9069758	Achnatherum splendens	71.7	2.3	3.596 abc	49.3	36.0
Bannock	Elymus lanceolatus ssp. lanceolatus	69.7	1.7	2.943 bcd	93.3	12.0
Critana	Elymus lanceolatus ssp. lanceolatus	49.3	3.3	2.638 bcde	68.3	9.3
Bozoisky	Psathyrostachys juncea	81.0	2.0	2.524 bcde	78.7	17.0
Rosana	Pascopyrum smithii	42.3	1.3	2.499 bcdef	94.3	14.0
9058207	Agropyron desertorum	58.0	3.3	2.430 bcdef	58.7	13.7
9057957	Elymus excelsus	64.7	3.0	2.221 bcdefg	59.3	12.7
Hycrest	Agropyron cristatum X desertorum	63.3	4.0	2.207 bcdefg	58.3	15.7
Schwendimar	Elymus lanceolatus ssp. lanceolatus	54.3	4.3	2.180 bcdefg	60.0	17.0
9057959	Elymus tangutorum	40.7	5.0	1.833 cdefgh	28.3	13.7
9058210	Elymus dahuricus	83.7	3.0	1.791 cdefgh	59.3	17.3
9058211	Elymus exelsus	90.3	3.3	1.736 cdefgh	51.0	15.7
9058206	Agropyron cristatum	40.0	5.7	1.708 defgh	20.3	9.7
9075989	Hordeum brevisubulatum	48.3	3.3	1.430 defgh	79.3	11.7
9057955	Elymus dahuricus	76.7	3.7	1.319 defgh	61.7	15.0
9058213	Elymus tangutorum	47.3	5.0	1.236 defgh	36.7	16.0
9075984	Elymus dahuricus	92.0	3.7	1.208 defgh	55.0	12.3
Goldar	Pseudoroegneria spicata ssp. spicata	42.0	5.3	1.138 defgh	18.3	6.0
Pryor	Elymus trachycaulus ssp. trachycaulus	61.0	3.3	1.111 defgh	43.3	12.3
9057956	Elymus excelsus	66.3	4.0	0.889 efgh	45.0	14.3
9075985	Elymus purpuraristatus	58.3	5.3	0.847 efgh	56.7	9.7
9075991	Agropyron mongolicum	23.3	7.3	0.611 fgh	6.7	4.0
9057954	Roegneria purpurascens	56.3	5.7	0.444 gh	23.3	6.7
9075990	Agropyron fragile ssp. sibiricum	47.0	4.7	0.430 gh	13.3	4.3
9058212	Elymus nutans	19.3	7.0	0.208 h	30.0	8.3
9058214	Elymus ciliaris	13.3	7.7	0.166 h	30.0	2.7
Lodorm	Nassella viridula	30.0	5.7	0.000*	16.7	6.0
9057963	Puccinellia chinampoensis	0.0	9.0	0.000*	0.0	0.0

Table 1 continued.
Chinese Inter-Center Strain Trial, Field 21 Fish and Game Farm
Summary of 1998 Evaluation

Accession	Genus and Species	2/ 1/ Dry Matter Yield MT/ha	Percent Stand	Plant Height (cm) Regrowth (cm)		Vigor	
Evaluation Date		7/22/98	7/22/98	7/22/98	9/24/98	9/24/98	
Grasses continued.							
9057962	Agropyron mongolicum	0.0	9.0	0.000*	0.0	0.0	
9057958	Elymus nutans	0.0	9.0	0.000*	0.3	0.0	
9058217	Stipa grandis	0.0	9.0	0.000*	0.0	0.0	
9058208	Agropyron mongolicum	20.0	7.7	0.000*	1.0	0.0	
9058215	Elymus pendulina	0.0	9.0	0.000*	3.3	0.0	
540441	Leymus arenarius	10.3	7.3	0.000*	5.0	0.0	
9005491	Puccinellia nuttalliana	0.0	9.0	0.000*	0.0	0.0	
9075982	Puccinellia tenuifolia	0.0	9.0	0.000*	0.0	0.0	
Mean	1.384						
CV	51.24 %						
LSD	1.559						
Legumes & Shrubs							
Lutana	Astragalus cicer	36.0	3.3	4.605	60.3	9.0	
9075988	Astragalus adsurgens	16.0	5.7	1.099	55.0	8.0	
Spredor III	Medicago sativa	46.7	3.3	0.998	56.7	5.7	
9057946	Astragalus adsurgens	27.3	4.7	0.615	61.5	21.0	
9075986	Medicago ruthenicus 3/						
	Mean	1.463					
	CV	110.00 %					
					9057950		
Ceratoides arborescens		174.0	1.3	NA	80.0	NA	
9063535	Krascheninnikovia lanata			66.0	3.7	NA	54.0 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 siginificantly different as determined by Duncan's Multiple Range Test, P = 0.05. Accessions marked with an * were not included in the analysis of variance. Analysis of variance of the legume accessions failed to show any significant differences.
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.