

Coffee Point Off-Center Advanced Test Site
1996 Progress Report
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INTRODUCTION

The purpose of the Coffee Point Off-Center Advanced Test Site is to evaluate the potential of grasses for revegetation and forage for livestock and wildlife in areas of 8-10 inch annual precipitation in southeast Idaho. The site is in MLRA 11B, Snake River Plains of the Northwestern Wheat and Range region of the Intermountain United States.

The site is located in the Coffee Point Exclosure, approximately 25 miles northwest of Aberdeen on land administered by the USDI - Bureau of Land Management. The exclosure has been used by the Aberdeen Plant Materials Center for testing purposes since 1982. The off-center advanced test site is composed of two components, the inter-center strain trial and a display nursery and was seeded in November, 1994. For a detailed description of the project and site characteristics see the Coffee Point Off-Center Advanced Test Site - 1995 Progress Report.

1996 EVALUATIONS AND DISCUSSION

The site was first evaluated on May 20 and data was collected on plant height, percent stand, plant density and vigor. On July 8, plant height, forage production and vigor data were collected. A summary of this data is presented in Table 1.

During the last week of August, the Coxs Well wildfire burned approximately 225,000 acres northwest of Aberdeen. The test site was burned on August 30 and it appeared that the fire moved quite rapidly through the test plots.

Precipitation data is collected with a direct reading rain gauge which is located at the southeast corner of the exclosure. Although no long term site specific precipitation data exists for the Coffee Point exclosure, it is in a 8 -12 inch precipitation zone. During the 1995 crop year, 7.99 inches were received. The following summarizes precipitation received during the 1996 crop year:

<u>Sampling period</u>	<u>Precipitation</u>
10/2/95 - 5/20/96	3.95 inches
5/20 - 7/8	0.80
7/8 - 9/3	0.00
9/3 - 10/10/96	<u>0.60*</u>
Total	5.35 inches

* Estimated. Fire destroyed the rain gauge. The Aberdeen Research and Extension Center received 1.20 inches during this period.

All evaluation data collected during 1996 was collected in an identical manner as in 1995 with the exception of forage production data which was not collected in 1995.

Forage production data collected from plots with 10 inch row spacing was accomplished by centering a 60 cm X 200 cm frame on the middle 2 rows of each plot, clipping the test material above the plant crown and placing it into individual paper bags. 120 cm X 200

cm frames were used on plots with 20 inch row spacing. The samples were brought back to the PMC and air-dried until October 17, 1996 when the samples were weighed and the data was converted to pounds per acre dry weight.

Plant height data collected on May 20 ranged from 4.3 cm for 'Volga' mammoth wildrye to 22.8 cm for 'Hycrest' crested wheatgrass and 'P-27' Siberian wheatgrass. On July 8, plant height ranged from 5.8 cm for Volga to 37.0 cm for Hycrest (Table 1).

Percent stand data ranged from 1.3 percent for Volga to 82.8 percent for Hycrest crested wheatgrass. Percent stand data was analyzed utilizing analysis of variance (ANOVA) and Duncan's Multiple Range Test. Means shown on Table 1 which are followed by the same letter are not significantly different.

Plant density ranged from 0.3 plants per foot² for Volga to 5.0 plants per foot² for 'Bannock' thickspike wheatgrass. Hycrest had the best vigor rating (1.5) and Volga had the worst vigor rating (8.3) during the May evaluation. In July, Hycrest, Bannock, and 'Bozoisky' Russian wildrye had the best vigor ratings (2.0) and Volga and 9040137 Columbia needlegrass had the worst vigor ratings (8.5).

Hycrest, 'Vavilov' and PI-275459 Siberian wheatgrass, and 'Nordan' crested wheatgrass produced the most forage. Forage production data was analyzed utilizing analysis of variance (ANOVA) and Duncan's Multiple Range Test. Table 1 is arranged in order by forage production from greatest to least.

Data was also collected from the non-replicated display plots and is also shown on Table 1. 'Parkway' crested wheatgrass had the highest forage production and 'Canbar' canby bluegrass had the lowest forage production. The non-replicated forb and shrub plots were not sampled for forage production but Pamirian winterfat had the most number of plants per sample rows followed by 9067481 winterfat.

On October 10, a new rain gauge was installed to replace the one destroyed by fire. General observations of the test plots were that all plots had begun to green up after the fire. The accessions which were seeded in 20 inch row spacings (Russian wildrye and basin wildrye) had twice as much regrowth.

The Plant Materials Center plans to continue evaluating the site annually for the next three years to determine long term performance of the plant materials. The fire in the test site has created an excellent opportunity to evaluate the ability of the different grasses to recover from fire.

Table 1.
Coffee Point Inter-Center Strain Trial
Summary of 1996 Evaluation data

Accession No.	Common Name	Scientific Name	Replicated Grass Plots							4/ Forage Production pounds/acre
			Plant Height (cm)		1/ Percent Stand	2/ Plant Density	3/ Vigor			
			5/20	7/8	5/20	5/20	5/20	7/8		
Hycrest	Crested Wheatgrass	<i>A. cristatum</i> x <i>desertorum</i>	22.8	37.0	82.8 a	4.3	1.5	2.0	957	a
Vavilov	Siberian Wheatgrass	<i>Agropyron fragile sibiricum</i>	21.5	29.3	79.5 ab	4.8	1.8	2.5	836	ab
PI-275459	Siberian Wheatgrass	<i>Agropyron sibiricum</i>	19.3	31.8	71.3 abcd	3.8	2.5	2.3	808	abc
Nordan	Crested Wheatgrass	<i>Agropyron desertorum</i>	20.0	36.3	72.8 abc	4.5	2.8	2.5	781	abcd
P-27	Siberian Wheatgrass	<i>Agropyron fragile sibiricum</i>	22.8	35.8	67.8 abcd	3.8	2.5	2.5	669	bcde
Ephraim	Crested Wheatgrass	<i>Agropyron cristatum</i>	18.5	31.8	77.3 ab	4.8	2.8	3.8	650	cde
Bannock	Thickspike Wheatgrass	<i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i>	20.0	33.3	61.0 cde	5.0	2.0	2.0	613	def
Douglas	Crested Wheatgrass	<i>Agropyron cristatum</i>	17.0	28.0	74.0 abc	4.3	2.5	3.5	557	ef
Sodar	Streambank wheatgrass	<i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i>	15.3	27.5	71.3 abcd	4.8	2.5	2.3	511	efg
Critana	Thickspike Wheatgrass	<i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i>	17.0	23.0	66.8 bcd	3.8	4.8	2.3	446	fg
SL-hybrid		<i>Elymus</i> x <i>Pseudoroegneria</i>	17.5	29.3	56.8 de	3.3	3.8	3.0	344	ghi
Syn A	Russian Wildrye	<i>Psathyrostachys juncea</i>	19.5	24.5	79.5 ab	2.8	2.8	2.5	321	hij
Schwendimar	Thickspike Wheatgrass	<i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i>	18.3	28.3	35.8 g	3.5	4.0	3.8	307	hij
Mankota	Russian Wildrye	<i>Psathyrostachys juncea</i>	22.5	23.8	71.0 abcd	3.3	2.8	2.3	265	hijk
Bozoisky	Russian Wildrye	<i>Psathyrostachys juncea</i>	18.8	23.8	64.5 bcde	2.8	2.5	2.0	242	ijk
Trailhead	Basin Wildrye	<i>Leymus cinereus</i>	23.3	27.5	65.8 bcd	3.3	2.8	2.8	223	ijkl
9019219	Bottlebrush Squirreltail	<i>Elymus elymoides</i>	13.8	21.3	34.8 g	2.0	3.5	4.8	205	ijkl
9019218	Bottlebrush Squirreltail	<i>Elymus elymoides</i>	13.0	16.3	40.5 fg	3.5	4.3	4.3	204	ijkl
Tetracan	Russian Wildrye	<i>Psathyrostachys juncea</i>	20.0	25.5	64.5 bcde	2.3	3.5	3.3	158	ijklm
Magnar	Basin Wildrye	<i>Leymus cinereus</i>	17.5	31.3	50.5 ef	2.3	3.3	3.5	158	ijklm
9040187	Bottlebrush Squirreltail	<i>Elymus elymoides</i>	16.8	18.3	18.3 h	1.5	4.5	4.8	130	ijklm
9040189	Bottlebrush Squirreltail	<i>Elymus elymoides</i>	14.5	11.0	32.8 g	2.3	5.0	6.8	102	klm
Secar	Snake River Wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>	18.8	19.8	14.5 hi	1.3	4.8	5.8	83	klm
9024804	Columbia Needlegrass	<i>Stipa nelsonii</i> v. <i>dorei</i>	13.3	11.3	7.3 hi	1.5	6.3	6.3	37	lm
9040137	Columbia Needlegrass	<i>Stipa nelsonii</i> v. <i>dorei</i>	5.0	6.0	4.0 hi	0.8	8.0	8.5	9	m
Volga	Mammoth Wildrye	<i>Leymus racemosus</i>	4.3	5.8	1.3 i	0.3	8.3	8.5	9	m

1/ Percent stand is equal to basal cover. 5/20/96 percent stand data was analyzed utilizing Duncan's Multiple Range Test; P=0.05, CV=17.8; means followed by the same letters are not significantly different.

2/ Plant Density is the number of plants per foot²

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

4/ Harvest samples were air-dried and weighed. Means followed by the same letter are not significantly different as determined by Duncan's Multiple Range Test, P=0.05, CV=31.3

Table 1 continued.
Coffee Point Inter-Center Strain Trial
Summary of 1996 Evaluation data (Cont.)

Non-replicated Grass Display Plots

Accession No.	Common Name	Scientific Name	1/			Plant Density (per ft ²) 5/20	2/		Forage Production pounds/acre
			Plant Height (cm) 5/20	7/8	Percent Stand 5/7		Vigor 5/20	7/8	
Kirk	Crested wheatgrass	Agropyron cristatum	22	40	63	5	2	3	780
Parkway	Crested wheatgrass	Agropyron cristatum	20	38	75	5	2	5	855
Fairway	Crested wheatgrass	Agropyron cristatum	17	34	60	3	4	3	780
Pryor	Slender wheatgrass	Elymus trachycaulis	15	40	20	2	4	4	260
San Luis	Slender wheatgrass	Elymus trachycaulis	0	0	0	0	9	9	0
Newhy	RS Hybrid	Elytrigia x Pseudoroegneria	17	38	45	3	5	2	557
Canbar	Canby bluegrass	Poa secunda	17	20	20	1	5	8	74
Whitmar	Beardless wheatgrass	Pseudoroegneria spicata inermis	22	33	33	2	4	5	260

Non-replicated Forb and Shrub Display Plots

Accession No.	Common Name	Scientific Name	Plant Height(cm) 5/20	Number of Plants/Sample Rows 5/20	Vigor 5/20
9021471	Fringed sage	Artemisia frigida	0	0	9
Lutana	Cicer milkvetch	Astragalus cicer	0	0	9
Rincon	Fourwing Saltbush	Atriplex canescens	4	6	5
Wytana	Fourwing Saltbush	Atriplex canescens	4	6	6
9067480	Fourwing Saltbush	Atriplex canescens	5	5	7
Timp	Utah Sweetvetch	Hedysarum boreale	1	10	3
Immigrant	Forage Kochia	Kochia prostrat	7	17	4
Pamirian	Winterfat	Krascheninnikovia ceratoides	11	75	2
9067481	Winterfat	Krascheninnikovia lanata	10	56	3
9063535	Winterfat	Krascheninnikovia lanata	6	52	5
Hatch	Winterfat	Krascheninnikovia lanata	9	23	4
Richfield sel.	Firecracker penstemon	Penstemon eatonii	0	0	9
Clearwater sel.	Alpine penstemon	Penstemon venustus	0	0	9

1/ Percent stand is also equal to basal cover.

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

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