

## Dry Land Forage Trials

### Grizzly Dryland Forage Nursery

The Grizzly nursery is in the foothills just north of Grizzly mountain on the Morrow Brothers ranch. The slope is to the north but not steep. The soil is heavier textured than most of Central Oregon, probably a loam. Precipitation is in the neighborhood of 12 - 15 inches annually. There has been no scheduled grazing on the plot. However, occasionally some cattle do get on it.

The planting was made March 26-27, 1950, with 27# of aero cyanamid surface broadcast prior to planting. Probably because of the nitrogen application, a very heavy stand of cheat grass, Bromus tectorum, infested the seeding. It was necessary to clip the cheat grass in the summer of 1950. The cheat came back again in 1951 and was again clipped. Early spring 1952, the cheat was removed by hand hoeing.

During 1952 there was a general improvement in stand and in production of the nursery with the exception of Sherman big blue grass and possible Meadow brome grass. Instead of improving, the big blue appeared to be declining in stand and vigor.

It will be noted that Table No. 63 shows no stand for any of the milk vetches. None were observed during 1950 or 1951; however, during the summer of 1952 there was a trace to an adequate stand in the plots. When the fall notes were taken December 5 all vestiges of plants or foliage had disappeared. The writer hasn't had enough experience with these plants to know whether this is normal behavior or inability of the milk vetches to cope with environment.

Several grasses listed as no stand during 1951 have appeared in the plots during 1952. In some cases, only one or two plants and in others a thin stand, but the rows were readily visible. Most notable were feather bunchgrass, Mandan wild rye, western wheatgrass, and to a lesser extent, crested wheatgrass.

At this time the crested wheatgrass selection F. I. 109012 appears far superior to the commercial crested wheat. A better initial stand was obtained and it appears to have more vigor and production.

These grasses which appear to have the most promise at the present time considering stand, vigor and forage production are tall wheatgrass, crested wheatgrass, commercial and P.I. 109012, pubescent wheatgrass, primary slender wheatgrass and Whitmar beardless wheatgrass. While sheep fescue has a good stand and is apparently vigorous, the production appears to be very low.

### 1953

The late spring rains were favorable for the dryland grasses. The general result was that there was no perceptible change in the stand.

Those varieties which were well adapted flourished while varieties which appeared to be declining in stand during 1952 were able to at least maintain their stand.

H. H. Rampton, Agronomist, Farm Crops Department, Oregon State College, was able to visit the nursery during October and rated the nursery as follows:

1. Tall wheatgrass
2. Crested wheatgrass P.I. 109012 and commercial.  
Both showed considerable fall recovery.
3. Pubescent wheatgrass, apparently considerable intermediate wheatgrass mixture.
4. Ree (intermediate) wheatgrass.
5. Frimar slender wheatgrass
6. Whitmar beardless wheatgrass
7. Sherman big bluegrass
8. Western wheatgrass
9. Smooth brome
10. Meadow brome
11. Sheep fescue
12. Canada wild rye (Mandan)
13. All Astragalus are almost gone. Gopher damage probably accounted for much of the stand reduction.

This rating is very nearly identical to the rating indicated in Table No. 63.

#### Steelhammer Dryland Forage Nursery

The nursery was seeded March 22, 1951, on the north slope of Powell Butte, in a sandy loam soil with a rather low moisture holding capacity. The annual precipitation will be in the neighborhood of 8-10 inches. When the stand records were taken on August 9, 1951, a reasonably good stand was noted for most all varieties. At that time the trial was infested with annual dry land weeds, principally Russian thistle. The weeds were removed shortly after the notes were taken, and during the fall the trial area was fenced by the farmer to keep out cattle.

Early summer 1952 the weeds were again removed and at that time considerable damage was noted due to rodents.

Rodent damage probably accounted for a large portion of the decline in stand. In the future they will be controlled.

In comparison with the 1951 stand data (Table No. 64), it can be noted that weeping lovegrass has gone out entirely and most other varieties have declined. The notable exceptions to this decline are the crested wheatgrasses, pubescent wheatgrass, tall wheatgrass, and Whitmar beardless wheatgrass.

At the time of taking the 1951 stand data, most of the milk vetches had at least some stand. Observations during the summer of 1952 showed a considerable decline in stand. The surviving plants exhibited considerable rodent damage and it is entirely possible that the rodents have damaged the milk vetches more than the grasses.

Table No. 63  
 Dryland Forage Grass Nursery  
 Morrow Brothers Ranch, Grizzly, Oregon

Common Name	Botanical Name	Pedigree	Varietal Vigor Rating(1)		
			1951	1952	1953(3)
Crested wheatgrass	Agropyron cristatum	Comm.	1	1	1
Weeping lovegrass	Eragrostis curruia		0	0	0
Intermediate wheatgrass	Agropyron intermedium	Ree	2	2	2
Western wheatgrass	Agropyron smithii		1	1	1
Primar slender wheatgrass	Agropyron trachycaulum		2	2	2
Whitmar beardless wheatgrass	Agropyron inerme		2	2	2
Sheep fescue	Festuca ovina		2(2)	2(2)	2(2)
Milk vetch	Astragalus glycyphylus	P.I. 123422	0	0	0
Smooth bromegrass	Bromus inermus	Manchar	1	1	1
Chickpea milk vetch	Astragalus cicer	P.I. 133148	0	0	0
Sherman big bluegrass	Poa ampla		3	2	2
Sicklepod milk vetch	Astragalus falcatus		0	0	0
Mandan wild rye	Elymus canadensis var. mandan	#419	0	1	1
Feather bunchgrass	Stipa viridula	#397	0	1	1
Meadow bromegrass	Bromus erectus	P.I. 89820-1	1	1	1
Pubescent wheatgrass	Agropyron trichophorum	P.I. 107328	3	3	3
Tall wheatgrass	Agropyron elongatum	P.I. 109452	3	3	3
Crested wheatgrass	Agropyron cristatum	P.I. 109012	2	3	3
Primar slender wheatgrass	Agropyron trachycaulum		2	2	2

(1) 0 = Poor - probably not adaptable

1 = Fair

2 = Good

3 = Excellent

(2) Excellent stand, very low production

(3) There was no preceptible change in stand or relative production during 1953.

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Table No. 64  
 Dryland Forage Nursery  
 Steelhammer Farm -- Powell Butte, Oregon

Common Name	Botanical Name	Pedigree	Varietal Vigor Rating(1)		
			1951	1952	1953
Crested wheatgrass	<i>Agropyron desertorum</i>	Comm.	1	2	0
Weeping lovegrass	<i>Eragrostis curvula</i>		2	0	0
Intermediate wheatgrass	<i>Agropyron intermedium</i>	Ree	2	1	0
Western wheatgrass	<i>Agropyron smithii</i>		2	1	1
Primar slender wheatgrass	<i>Agropyron trachycaulum</i>		3	2	2
Whitman beardless wheatgrass	<i>Agropyron inerme</i>		2	2	2
Sheep fescue	<i>Festuca ovina</i>		1	0	0
Milk vetch	<i>Astragalus glycophylus</i>	P.I. 123442	2	0	0
Manchar smooth bromegrass	<i>Bromus inermis</i>		2	1	0
Chickpea milk vetch	<i>Astragalus cicer</i>	P.I. 133148	1	0	0
Sherman big bluegrass	<i>Poa ampla</i>		1	0	0
Sickle pod milk vetch	<i>Astragalus falcatus</i>		2	0	0
Mandan wild rye	<i>Elymus canadensis - mandan</i>	#419	3	0	0
Feather bunch grass	<i>Stipa viridula</i>	#397	1	0	0
Meadow bromegrass	<i>Bromus erectus</i>	P.I. 89820-1	2	0	0
Stiffhair (Pubes.) wheatgrass	<i>Agropyron trichophorum</i>	P.I.107328	3	3	3
Tall wheatgrass	<i>Agropyron elongatum</i>	P.I. 109452	3	3	3
Crested wheatgrass	<i>Agropyron cristatum</i>	P.I. 109012	3	3	3

Seeded March 22, 1951

(1)

- 0 - Poor - probably not adaptable
- 1 - Fair
- 2 - Good
- 3 - Excellent

1953

Of the eighteen forage species planted in 1951 only five remain at a level which can be considered adequate. Crested wheatgrass P.I. 109012, tall wheatgrass P.I. 109452, pubescent (stiffhair) wheatgrass P.I. 107328, have maintained excellent stands and are productive species. Primar slender wheatgrass and Whitmar beardless wheatgrass are maintaining themselves but at a lower level of vigor.

Sisters Dryland Forage Nursery

The nursery was planted in an old enclosure built by the C.C.C. 3/4 miles south of Sisters on the Three Creeks Lake road. The soil is principally pumice and is probably a loamy sand. Annual precipitation is in the 8-10 inch range.

The species planted are listed in Table No. 65. Even though seeded under presumably ideal conditions, no grass grew.

Circle Ranch Dryland Forage Nursery

The nursery was seeded on the Circle Ranch approximately 7 miles NW of Prineville. The legal description of the trial area is SE $\frac{1}{4}$  of the SW $\frac{1}{4}$  of the SW $\frac{1}{4}$  T13S R15E and lies approximately 30' from the break of foothills of Grizzly Mountain. The soil has tentatively been described as a Lamonta fine sandy loam. The area lies in the 8-10 inch precipitation range.

The area had been broken out of sagebrush, and at the time of seeding the seedbed was in excellent condition with good soil moisture. The species planted are listed in Table No. 66. The nursery was seeded October 31 (RI) and November 2 (R II and III). By late December all species had emerged and were apparently thriving. There was some runoff during November and early December which caused furrowing on the slope and filling in the swales, but apparently this has not seriously affected the stand.

Summary of the Dryland Forage Nurseries

The Grizzly nursery on the Morrow Brothers Ranch changed very little from 1952. The more promising varieties are tall wheatgrass, Crested wheatgrass P.I. 109012, commercial crested wheatgrass, pubescent wheatgrass, Ree (intermediate) wheatgrass, Primar slender wheatgrass, and Whitmar beardless wheatgrass.

A number of grasses in the nursery on the Steelhammer Farm at Powell Butte have declined to the point where they cannot be considered adaptable. The grasses which have survived and may be considered of value to that area are Crested wheatgrass P.I. 109012, tall wheatgrass, pubescent wheatgrass, and to a lesser extent, Primar slender wheatgrass and Whitmar beardless wheatgrass.

Table No. 65  
 Dryland Forage Nursery  
 Sisters, Oregon

Common Name	Botanical Name	Pedigree
Pubescent wheatgrass	<i>Agropyron trichophorum</i>	Utah 109
Pubescent wheatgrass	" "	A1488
Pubescent wheatgrass	" "	P-41
Intermediate wheatgrass	<i>Agropyron intermedium</i>	Neb. 50
Intermediate wheatgrass	" "	M2-10820
Intermediate wheatgrass	" "	A 12496
Intermediate wheatgrass	" "	Ree
Hard fescue	<i>Festuca ovina</i> var. <i>duriuscula</i>	P 2517
Sheep fescue	<i>Festuca ovina</i>	P 274
Sherman big blue grass	<i>Poa ampla</i>	
Mandan rice grass	<i>Stiporyzopsis</i>	
Tall wheatgrass	<i>Agropyron elongatum</i>	P 2326
Whitman beardless wheatgrass	<i>Agropyron inerme</i>	
Crested wheatgrass	<i>Agropyron desertorum</i>	Comm.
Crested wheatgrass	<i>Agropyron cristatum</i>	A 1770
Crested wheatgrass	<i>Agropyron cristatum</i>	Fairway
Desert wheatgrass	<i>Agropyron desertorum</i>	42-1
Desert wheatgrass	" "	Neb. 10
Desert wheatgrass	" "	571
Siberian wheatgrass	<i>Agropyron sibericum</i>	P-27

Planted No. 6-7-8, 1952

Table No. 66  
 Dryland Forage Grass Nursery  
 Circle Ranch (R. D. Smith, Mgr.) - Prineville, Oregon

Common Name	Botanical Name	Pedigree
Pubescent wheatgrass	Agropyron trichophorum	Utah 109
Pubescent wheatgrass	" "	A 1488
pubescent wheatgrass	" "	P 41
Pubescent wheatgrass	" "	Comm.
Intermediate wheatgrass	Agropyron intermedium	Neb. 50
Intermediate wheatgrass	" "	M <sub>2</sub> 10820
Intermediate wheatgrass	" "	A 12496
Ree wheatgrass	" "	Ree
Intermediate wheatgrass	" "	Comm.
Hard fescue	Festuca ovina var. duriuscula	P 2517
Sheep fescue	Festuca ovina	P 274
Sheep fescue	Festuca ovina	Comm.
Sherman big blue	Poa ampla	
Mandan ricegrass	Stiporyzopsis	
Tall wheatgrass	Agropyron elongatum	P 2326
Tall wheatgrass	" "	Comm.
Whitman beardless wheatgrass	Agropyron inerme	
Crested wheatgrass	Agropyron desertorum	Comm.
Crested wheatgrass	" "	A 1770
Crested wheatgrass	" "	Fairway
Desert wheatgrass	Agropyron desertorum	42-1
Desert wheatgrass	" "	Neb. 10
Desert wheatgrass	" "	571
Siberian wheatgrass	Agropyron sibericum	P 27
Smooth bromegrass	Bromus inermis	Manchar

Seeded (October 31 (I), November 2 (II & III))