

Dryland Forage Nurseries

This experiment was set up to find which of the range grasses and in a few cases legumes will do the best under the environmental conditions of Central Oregon. Since the experiment is of a preliminary nature yield data is not being taken. The agronomic data being taken in these trials are survival as indicated by stand, by year and the general appearance of the grasses during the growing season.

The trials were of randomized block design. The number of varieties varying somewhat in each trial. The plots were 6 x 20 feet with the grasses or legumes being planted in rows one foot apart. The seeds were planted with handseeders at approximately $\frac{1}{2}$ inch depth.

Sisters Nursery

The nursery was planted in an old nursery enclosure built by the C.C.C. on an area which had previously been a grass nursery. Apparently none of the planted grasses survived. The soil is extremely sandy.

The grasses were planted March 25, 1950. An application of 27# Arec-Cyanamid was broadcast prior to planting. There was an adequate supply of moisture at planting time and the grasses sprouted and were apparently doing well. The weather turned warm and dryer than usual and as a result only two grasses survived. Sherman big blue in 2 replications and Sheep fescue in one replication. Probably the Arec-Cyanamid did more damage than good under the described conditions.

It is planned to replant this nursery during the fall of 1952.

Grizzly Nursery

This nursery is located near the base of Grizzly mountain on the Morrow Brothers ranch. It was planted March 26-27, 1951 with 27# of Arec-Cyanamid applied just previous to planting. The soil is a sandy loam and considerably

heavier than the Sisters nursery. Probably because of the greater moisture holding capacity of the soil a much better stand of grasses was obtained. The Aro-Cyanamid while probably helping the grasses in the nursery greatly increased the stand and vigor of the Bromus tectorum and was undesirable from that standpoint. This increase and vigor was still easily observed during 1951.

From observations made during the 1951 growing season, Tall wheatgrass and Stiff-hair or Pubescent wheatgrass had greater growth and stayed green longer than the other grasses. August 8, 1951, Tall wheatgrass was still green while the other grasses were pretty well dried up.

Good stands (See Table No. 56) were obtained of the following grasses: Ree wheat grass, Primar slender wheatgrass, Whitman beardless wheatgrass, Sheep fescue, Sherman big blue, Stiffhair wheatgrass and tall wheatgrass. From general appearance of growth and vigor, it was thought that Ree wheatgrass, Whitman beardless wheatgrass, Stiffhair wheatgrass, Tall wheatgrass and Primar slender wheatgrass were, after one full year of growth, probably the best grasses in the nursery.

The milk vetches either did not germinate or failed to survive. Not a single plant was observed in either the Sisters or Grizzly nursery.

Powell Butte Nursery

The nursery was established March 22, 1951, on the north slope of Powell Butte. The soil is generally very sandy, however, the area in which the nursery was established has a little heavier soil and probably more nearly like most of the range land in the vicinity. As shown in Table No. 57, a good stand was received on the majority of the grasses. A stand of milk vetches was obtained, however, cattle broke into the nursery area and seemed to be quite partial to the milk vetches. Whether they were established well enough to survive remains to be seen. Sherman big blue and Sheep fescue

Table No. 57

Dryland Forage Grass Nursery
Steelhammer Farm - Powell Butte
Seeded March 22, 1951

Common Name	Botanical Name	Pedigree	:Stand* by Replication		
			:August 9, 1951		
			1	2	3
Crested wheatgrass	<i>Agropyron cristatum</i>	Comm.	1	1	1
Weeping lovegrass	<i>Eragrostis curvula</i>		1	2	3
Ree wheatgrass	<i>Agropyron intermedium</i>		1	2	2
Western wheatgrass	<i>Agropyron smithii</i>		2	3	2
Primar slender wheatgrass	<i>Agropyron trachycaulum</i>		3	3	3
Whitmar beardless "	<i>Agropyron inerme</i>		2	1	2
Sheep fescue	<i>Vestuca ovina</i>		1	1	1
Milk vetch	<i>Astragalus glycyphylus</i>	P.I. 123442	2	2	1
Manchar smooth bromegrass	<i>Bromus inermis</i>		2	3	2
Chickpea milk vetch	<i>Astragalus cicer</i>	P.I. 133148	1	1	1
Sherman big bluegrass	<i>Poa ampla</i>		1	1	1
Sicklepod milk vetch	<i>Astragalus falcatus</i>		3	2	2
Mandan wild rye	<i>Elymus canadensis</i> - var. mandan	#419	3	3	2
Feather bunchgrass	<i>Stipa viridula</i>	#397	1	1	1
Meadow brome (Pubescent)	<i>Bromus erectus</i>	P.I. 898,20-1	2	2	1
Stiffhair wheatgrass	<i>Agropyron trichophorum</i>	P.I. 107,328	3	3	2
Tall wheatgrass	<i>Agropyron elongatum</i>	P.I. 109,452	3	3	3
Crested wheatgrass	<i>Agropyron cristatum</i>	P.I. 109,012	3	2	3

- * 1 - Thin stand
2 - Adequate or average stand
3 - Better than average

sprouted and came up in a thick stand, however, by the middle of the summer they had died out. It was difficult to determine the cause of their death, the tops were laying loose on top of the ground. It appeared as though rodents or chewing insects had severed the plants at the crown.

Tall fescue and Primar slender wheatgrass appeared to be the most easily established and productive grasses, however, Manchar smooth brome and Mandan wild rye, although not as well established, had a leafy growth and may have been more productive had they been of equal stand.

Summary

The dryland grass nurseries have not been established long enough to draw any definite conclusions, however, at this time one and two years after establishment the following varieties appear to be superior: Tall wheatgrass, Primar slender wheatgrass, Whitman beardless wheatgrass and Ree (Intermediate) wheatgrass. In view of current recommendations, the previous statement is not startling.

Future Plans

It is planned to continue the present established nurseries and to replant the Sisters nursery. It would be wise to establish nurseries further out in the range country on varying conditions of soil and moisture but man power and funds necessarily limit very much expansion.

A possibility of range improvement which should not be overlooked, is the possibility of increasing the forage by nitrogen fertilization. With our knowledge of the response to nitrogen in both the irrigated and dry land agriculture, it is felt that, particularly in good stands of desirable grasses, the possibility of increasing the production by nitrogen applications should be investigated.