

TITLE: Preliminary Investigations

PROJECT NUMBER: 5028

PERSONNEL: Leader - Vern R. Stewart
Cooperator - R. F. Eslick

FUNDS: State

LOCATION: Station

PROBABLE DURATION: Indefinite

EXPERIMENTAL DATA:

INTRODUCTION

The purpose of this project is to investigate and study crops that may have economic value in Northwestern Montana. Because of restricted acreage of some of the more commonly grown crops, this research became one of great importance to the economy of Northwestern Montana.

Materials studied this past season were (1) Dwarf Essex rape, (2) mustards, and (3) a new oil crop nursery.

MATERIALS AND METHODS

Materials for the crops studied under this project are supplied by the cooperators at the Main Station in Bozeman. Seeding was done with the nursery type seeder which has been described in previous annual reports. In most of these crops, weeds have been controlled by mechanical means.

Dwarf Essex Rape

Approximately one-half acre block of Dwarf Essex rape was seeded in field number F-3. Seeding was done with a vegetable planter with rows being spaced twenty-four inches. Seeding date was August 15. Most of the material seeded on the 15th of August had emerged by the 21st of August. Stands were very good throughout the plot. Because of fan weed between the rows, the block was cultivated September 30, 1960. No further work was done on this plot until harvest.

Most of the rape plants grew quite tall (6 to 8 feet). Lodging was quite severe in the entire block.

Harvesting of the plot was done with an Allis Chalmers all crop harvester. The machine was used because of the ground driven reel feature. A power reel causes considerable loss because the seed is knocked off the plant before it reaches the combine.

A total of 1160 pounds of seed was harvested from 28,480 square feet for a yield of 1774 pounds per acre.

It is felt by the author that solid seeding would give more satisfactory results than the twenty-four inch spacing for seeding. It was observed during the 1961 growing season that there was less lodging in the close seeding technique.

Mustard Nursery

Mustard nurseries were seeded this past season on dryland and irrigated lands. They were seeded in four row plots ten feet long and four replications.

The dryland nursery was plowed under after a severe dust storm destroyed a greater portion of the material. The irrigated nursery was irrigated once during the growing season. A hail storm at noon on September 1, 1961 destroyed all the plots not harvested on August 21, 1961. Because of the hail storm and the loss of the later material, no variance analysis was made. Commercial was the highest yielding line in the study. Table XLXVIII shows data obtained from this nursery.

Interstate New Crop Nursery

This nursery is grown throughout the Experiment Station system in Montana. This material is being screened for oil composition and use. Ten different entries were included in this year's study. Two inches of water were applied once during the growing season.

Only three entries were harvested. The other entries were destroyed by hail on September 1 except Amaranthus retroflexus. Camelina sativa was outstanding in yield and is quite early in maturity. Table XLIX shows the names of entries, yield data, and stand measurements that were obtained.

Table XLVIII. Agronomic data from Intrastate mustard nursery grown at Creston, Montana in 1961. Four row plot, four replications.

Seeding Date: May 18, 1961 Size of Plot: 16 sq. ft.

Variety	Source	Har- vest Date	Plot Yield in Grams				Total Grams	Yield in Lbs./Acre
			I	II	III	IV		
Increase B	60-9219	8-21	145	165	210	160	680	1020
Commercial	60-8099	8-21	185	265		175	625	1250
48-6687	60-8513	8-21	190	155	200	200	745	1118
48-6729	60-8520	8-21	175	175	167	200	717	1076
49-6477-1	60-8350					110	110	660
58-8062-2	60-8786	8-21		130		185	315	945
59-7861-3	60-9256*			100			100	600
58-8063-16T	60-9233	8-21	175	125	135		435	870
	60-9220							
Commercial		8-21	124		176		300	900

Note: Remaining plots and lines destroyed by hail 9-1-61.

Table XLIX . Agronomic data from Interstate New Crop Nursery grown at Creston, Montana in 1961.
 Four row plots, four replications, field number Y-8.
 Date Seeded: May 18, 1961 Size of Plot: 16 sq. ft.

Variety	C. I. No.	Stand Percent	Harvest Date	Plot Yield in Grams				Total Yield in	
				I	II	III	IV	Grams	Lbs/Acre
Crambe Abyssinica	Nu24427	100	—						
Crambe orientalis	Tu41153	0	—						
Rapistrum rugosum	Tu41363	.75	—						
Isatis aucheri	Tu41180	0	—						
Camelina sativa	60-9145	95	8-21	330	285	330	225	1170	1756
Amaranthus retroflexus	60-9123	100	9-27	155	145	145	150	595	892
Brassica juncea	49-5934-2	100	—			225		225	1350
Eruca sativa	60-9350	58.75	—						
Raphanus sativa Crimson Giant	60-9114	100	—						
Alyssum dasycarpum	Tu41231	0	—						

Note: Hail on September 1, 1961 destroyed all other plots.