

PROJECT TITLE: Evaluation of food and specialty oil safflower varieties under dryland conditions at Geraldine.

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OBJECTIVES:
To evaluate the performance of safflower varieties and test lines under recrop environments in the Geraldine area. The Geraldine area traditionally produces some of the highest safflower yields and quality in Montana.

RESULTS:
Yields were reduced by a poor stand, resulting from standing water in the trial area. Actual yields, as well as yields adjusted for stand percent are presented in Table 1. Adjusted yields ranged from 1124 to 789 lbs/a of seed. Test weights averaged 40.87 lbs/bu while oil content averaged 43.03%. S-541 had the high seed yield of 1124 lbs/a and oil content of 46.3%. Morlin and S-317 were other high seed yielders. Centennial, MT3697, and Montola 2000 also had high oil contents.

SUMMARY:
Seed yield multi-year summaries are presented in Table 2. Trials were planted under fallow and recrop conditions in 1990-1992, with both yields figured into the longterm average. Varieties with high longterm average yields include Saffire, S-317, and S-541.

Table 1 1994 Safflower Variety Trial on Recrop at Geraldine Exp. 7707 Central Agricultural Research Center, Moccasin, MT.

Variety	Stand		Plant Ht.	--Seed Yield--		Test Weight	----- Oil -----	
	Percent	%		Adj*	Content		Yield	
			"	lbs/a	lbs/bu		%	lbs/a
S-541	91	28	28	1015	1124	41.8	46.3	470
S-317	87	28	28	928	1082	39.9	45.5	423
CENTENNIAL	93	27	27	922	1014	41.2	46.0	425
91B 1282	83	24	24	880	1043	42.4	43.9	386
90B 6011	87	27	27	829	965	39.4	44.1	365
MORLIN	73	23	23	807	1088	40.0	41.6	335
MONT2000	91	23	23	803	879	40.5	45.3	366
FINCH	78	26	26	797	1045	44.0	40.2	321
STIRLING	77	24	24	784	1014	42.1	37.4	293
GIRARD	77	29	29	739	1002	40.5	42.9	317
S-208	73	28	28	723	1001	41.5	43.3	313
88B 3006	75	26	26	717	969	39.8	43.8	314
MONT2001	88	24	24	685	797	41.3	42.0	288
90B2763M	70	23	23	631	884	38.4	44.7	282
MT 3697	65	25	25	608	912	41.6	46.2	281
OKER	65	24	24	515	789	39.6	42.7	220
91B6668M	48	24	24	509	1060	39.9	43.5	222
SAFFIRE	52	25	25	487	923	41.6	35.1	172
OVERALL MEAN	76.31	25.44	25.44	743.3	977.3	40.87	43.03	321.8
F-RATIO TRTS	df=34	3.57		4.79	.95	16.35	40.20	6.29
CV (S/MEAN) %	=	15.53		16.06	17.50	1.38	1.90	16.39
LSD(0.05 by t)=		19.67		198.1	283.7	.94	1.35	87.52

*Yields in this column have been adjusted for the stand percent.

Planted: 4-21-94 on recrop winter wheat ground.

Harvested: 9-16-94

Fertilizer: 50# 28-28-0 with seed.

Producer: Roger Van Voast, Geraldine.

Table 2 Geraldine Safflower Multi-Year Summary
Central Agricultural Research Center, Moccasin, MT.

Variety	1986*	1987	1989	1990 Fallow	1990	1991 Fallow	1991#	1992 Fallow	1992	1994*	Ave.	S-541 Same Yrs
-----lbs/a-----												
S-541	1331	1477	694	1189	888	1384	442	1451	946	1124	1093	----
Finch	1378	1237	1131	1165	754	1291	296	1317	816	1045	1043	1093
Girard	1158	1316	391	1583	1058	1464	510	1167	787	1002	1044	1093
S-208	1180	1450	1062	1139	863	1438	426	1021	768	1001	1035	1093
Oker	1264	1060	977	1196	879	1328	348	1090	679	789	961	1093
S-317	1317	1389		1334	843	1544	452	1374	916	1082	1139	1137
Saffire		1358	1584	1314	875	1347	505	1465	851	923	1136	1066
Centennial				1354	783	1313	449	1707	982	1014	1086	1060
Mont 2000				1582	1033	1332	387	1173	864	879	1036	1060
88B 3006						1129	214	1640	1039	969	998	1069
MT 3697						901	223	1218	941	912	839	1069
Morlin								1074	945	1088	1036	1174
Stirling								1743	1158	1014	1305	1174
90B 6011								1603	1378	965	1315	1174
Mean	1207	1269	845	1276	873	1310	398	1370	955	977		

*Means adjusted for stand percent.

#Weather related disease infection is suspected to have resulted in low yields.

Trials were planted on recrop ground, except where noted.

1988 trial was abandoned due to poor stand as a result of crusting after seeding.

1993 trial did not produce mature seed due to cool summer temperatures, along with hail damage.

Trials were located on Paul Dostal farm, 16 miles east of Geraldine, from 1986-1990.

Trials were located on Roger Van Voast farm, 2 miles east of Geraldine, since 1991.