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

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PROJECT PERSONNEL: J.W. Bergman, Safflower Breeder, Sidney
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OBJECTIVES:
To evaluate the performance of safflower varieties and test lines under fallow and recrop environments under Geraldine growing conditions. The Geraldine area traditionally produces some of the highest safflower yields and quality in Montana.

RESULTS:
The dry weather, Sept 91 - June 92, severely reduced the yield potential of the recrop safflower. The reduced level of total growing season heat units, due to cool July-August weather, reduced the oil content and test weight of the safflower on fallow. Safflower on fallow typically matures later than on recrop because of increased level of nitrogen.

SUMMARY:
Several of the test lines yielded well relative to the established varieties S-541 and S-208. The S-208 yield, relative to the other entries, was lower than expected.

FUTURE PLANS:
A 1993 safflower variety trial is planned for the Chouteau county area. It will be established on recrop.

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Table 1 1992 Safflower Variety Trial on fallow at Geraldine.
Exp#7707 Central Agricultural Research Center, Moccasin, Montana

Variety	Plant Height	Seed Yield	Test Weight	------Oil------ Content	Yield
	"	lbs/a	lbs/bu	%	lbs/a
86B 1465	24	1796	33.97	31.0	556
STIRLING	25	1743	35.77	30.2	526
CENTENNIAL	25	1707	33.13	34.6	592
88B 3006	26	1640	33.53	37.7	619
90B 6011	29	1603	32.77	36.2	580
SAFFIRE	24	1465	38.27	27.0	395
85B 3910	22	1460	33.10	34.3	500
S - 541	26	1451	33.87	36.5	531
S - 317	26	1374	32.73	34.8	478
FINCH	26	1317	38.37	31.9	420
88B 3594	28	1230	32.50	35.5	437
MT 3697	24	1218	32.03	33.6	409
MONTOLA 2000	22	1173	31.63	36.7	432
GIRARD	28	1167	34.90	32.9	384
89B 1000	24	1137	31.67	29.3	334
OKER	24	1090	32.63	32.2	350
MORLIN	25	1074	31.80	34.8	376
S - 208	28	1021	31.17	31.6	324
EXPERIMENTAL MEANS		1370.41	33.55	33.39	457.98
F TEST FOR VAR. df=34		7.30	12.90	24.92	9.01
C.V. 1: (S/MEAN)*100		11.64	3.01	2.98	11.71
C.V. 2: (S OF MEAN/MEAN)*100		6.72	1.74	1.72	6.76
LSD (0.05)		264.67	1.67	1.65	89.00

Planted: 4-16-1992 Fertilizer: 50 lbs 18-46-0 with seed
Frosted: 8-(22-25)1992 Harvested: 9-11-1992
Winter wheat crop was tore-up to facilitate seeding on fallow. Soil moisture probe went to the handle, 48".

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Table 2 1992 Safflower Variety Trial on Recrop at Geraldine.
Exp#7717 Central Agricultural Research Center, Moccasin, Montana

Variety	Plant Height	Seed Yield	Test Weight	Bloom 7-16-92	-----Oil----- Content	Yield
	"	lbs/a	lbs/bu	%	%	lbs/a
90B 6011	27	1378	37.57	5.33	39.0	541
STIRLING	25	1158	40.70	33.33	32.5	380
88B 3594	27	1083	39.17	5.00	38.4	417
89B 1000	22	1064	36.93	3.67	31.5	336
88B 3006	25	1039	36.50	4.03	39.1	408
85B 3910	24	1037	36.67	33.33	38.0	396
CENTENNIAL	26	982	38.43	12.70	38.4	379
S - 541	27	946	37.33	8.33	39.2	372
MORLIN	22	945	36.23	2.33	36.7	347
MT 3697	23	941	38.43	6.70	39.3	370
86B 1465	25	939	39.13	6.70	33.9	321
S - 317	26	916	37.87	5.00	37.6	347
MONTOLA 2000	22	864	37.63	25.00	39.0	338
SAFFIRE	21	851	40.40	76.67	28.0	240
FINCH	24	816	39.27	34.33	33.7	279
GIRARD	22	787	37.83	8.67	35.3	279
S - 208	28	768	37.13	10.00	35.0	270
OKER	25	679	33.67	6.70	33.7	230
EXPERIMENTAL MEANS		955.31	37.83	15.99	36.03	347.14
F TEST FOR VAR. df=34		3.66	2.46	6.51	79.77	5.11
C.V. 1: (S/MEAN)*100		15.29	4.79	79.46	1.75	16.33
C.V. 2: (S OF MN/MN)*100		8.83	2.76	45.88	1.01	9.43
LSD (0.05)		242.36	3.01	21.08	1.05	94.06

Planted: 4-16-1992 Fertilizer: 50 lbs 18-46-0 with seed
Frosted: 8-(22-25)1992 Harvested: 9-11-1992
Rep 1 the soil moisture probe went to the handle. In reps two and three there was 12-14" of moist soil.

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