2008 Oilseed performance in central Montana trials.

By Dave Wichman

2008 Central Montana crop growing conditions were generally less than ideal, particularly for spring crops. Droughty conditions of late 2007 persisted through early May and commenced again in mid-June following above average precipitation in May. Early spring weather consisted of frequent dry windy days with almost daily freezing and thawing of the surface soil through March and early April. The frequent freezing and thawing coupled with low relative humidity broke down the surface soil structure leaving it quite powdery. These soil conditions were poor to very poor for proper placement of shallow seeded crops and to get good soil-to-seed binding to insure the seed imbibed sufficient water for germination. In such conditions, a hoe drill, with a 2 to 3 inch opener, may have an advantage over a double disk drill because the hoe opener pushes the dry soil aside leaving a more moist bed on which to place the small seed. Unusually cold weather in late April coupled with wind driven snow and some soil was stressful for emerged and emerging seedlings. 2008 oilseed date of seeding trial was established in tilled fallow with a double disk opener.

All five crops, camelina, canola yellow mustard, flax and safflower, had their highest 2008 yield from the April 17th seed date (Table 1). The germination and emergence of seedlings from the April 17th seed date occurred after area temperatures dropped below zero and wind driven snirt (snow & dirt) grated on emerged plant tissue. Earlier emerging seedlings experienced more weather related stress and some mortality. While these broadleaf crops generally have excellent capacity to compensate for thin stands with increased branching and flowers per plant, the marginal mid spring growing conditions limited the ability of the surviving plants to generate compensatory growth. Safflower was the high seed producing crop at all five seeding dates and camelina was second high producer for the first three seeding dates.

In general, Moccasin yields of cool season oilseeds, camelina, canola and yellow mustard are reduced when seeding is delayed till mid April (Table 2 & Fig. 1). Safflower seedlings are quite tolerant of spring frost, but usually not elicit a positive yield response to seeding earlier than mid-April, particularly at elevations higher than 3500 feet. Flax has not shown any advantage to seeding earlier than late April, even though it is later maturing than camelina, canola and mustards. While over the three years reported here, safflower has had the high yield for the early May seed date, growers are cautioned against seeding safflower too late or even at elevations higher than 3500ft. Safflower is a long season warm season crop. While the most recent 20 or so late summers have been relatively warm and frost free, cool summer temperatures or an August frost could be devastating to safflower. The need to get cool season oilseed crops seeded in early spring may not be as critical in areas with similar growing season temperatures and deeper soils (greater plant available water) or more July precipitation.

Production guidelines for oilseed crops can be obtained through the Montana Extension service. Extension web address: http://extn.msu.montana.edu/publications.asp

Table 1 2008 Oilseed date of seeding evaluation under tilled fallow.
Exp 66dt08 Central Agricultural Research Center. Moccasin, Montana.

Variety	Species	Seed Date	Seed Yield	Plant Height	Test Weight	Oil Content
			lbs/a	cm	lb/bu	%
Suneson	camelina	23-Mar-08	607	71.0	51.4	38.7
Suneson	camelina	7-Apr-08	1042	69.5	51.8	38.4
Suneson	camelina	17-Apr-08	**1186**	64.5	51.9	40.3
Suneson	camelina	2-May-08	371	63.5	51.7	35.2
Suneson	camelina	16-May-08	267	58.5	51.2	35.1
Pennant	yel. mustard	23-Mar-08	242	41.8	55.5	30.7
Pennant	yel. mustard	7-Apr-08	760	54.3	55.4	30.1
Pennant	yel. mustard	17-Apr-08	**1074**	54.2	55.5	29.2
Pennant	yel. mustard	2-May-08	359	53.5	56.1	28.4
Pennant	yel. mustard	16-May-08	190	47.8	55.0	28.1
RR357	canola	23-Mar-08	290	66.8	48.2	46.3
RR357	canola	7-Apr-08	**723**	61.0	49.2	45.5
RR357	canola	7-Apr-08	569	71.5	49.6	45.1
RR357	canola	2-May-08	377	66.2	50.1	43.5
RR357	canola	16-May-08	176	66.5	48.5	44.6
Omega	flax	23-Mar-08	97	50.5		39.3
Omega	flax	7-Apr-08	201	53.0		40.2
Omega	flax	17-Apr-08	**227**	58.8		39.4
Omega	flax	2-May-08	218	47.2		39.8
Omega	flax	16-May-08	175	45.5		39.7
Nutrasaf	safflower	23-Mar-08	1216	59.0	37.2	47.1
Nutrasaf	safflower	7-Apr-08	**1280**	60.5	37.0	46.2
Nutrasaf	safflower	7-Apr-08	1136	60.2	36.2	45.73
Nutrasaf	safflower	2-May-08	901	64.8	35.3	44.02
Nutrasaf	safflower	16-May-08	731	55.5	33.5	40.2
	mean		576.6	58.61		
	CV1		14.56	8.678		
	LSD (0.05)		137.3	8.316		

Table 2 Oilseed species yield response to seeding date.
Central Agricultural Research Center. Moccasin, Montana.

Species	Year	early April	mid April	late- April early- May
		lbs/a	lbs/a	lbs/a
Camelina	2006	1189	1146	716
	2007	821	902	665
	2008	1042	1186	371
	mean	1017	1078	584
Canola	2006	552	380	437
	2007	778	527	69
	2008	723	569	377
	mean	684	492	294
Yellow Mustard	2006	999	527	494
	2007	715	504	298
	2008	760	1074	359
	mean	825	702	384
Flax	2006	509	510	540
	2007	575	583	524
	2008	201	227	218
	mean	428	440	427
Safflower	2006	633	581	575
	2007	426	492	631
	2008	1280	1136	901
	mean	780	736	702
Overall	mean	736.3	656.6	447.7

Fig 1. 2006 to 2008 seeding date affect on oilseed crop seed yields at the Central Ag Research Center.

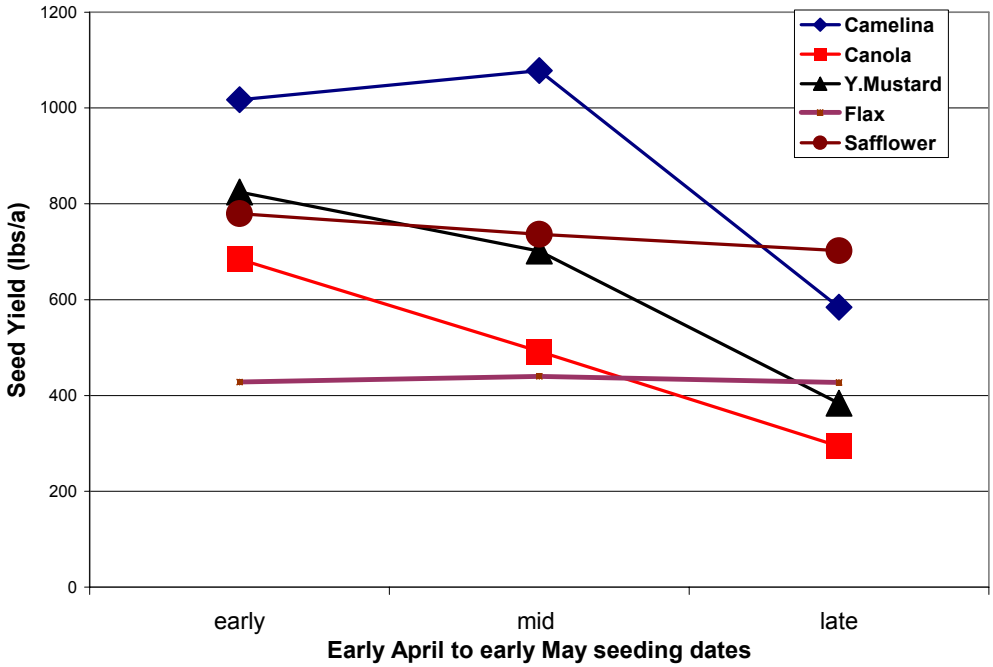

Table 3 High yields of seven oilseed species in central Montana.
Central Agricultural Research Center. Moccasin, Montana

	No-till Continuous Crop						Fallow	
Species	2004	2005	2006	2007	2008	average	2007	2008 1/
	lbs/a						lbs/a	
Camelina	1028	868	1262	902	825 f/	977	2381	1186
Canola	533	668	555	777	734	653		723
Y.mustard		512	999	715	784 f/	753		1074
B.juncea		534	613			573		531
Crambe	488	408	459			452		
Flax	579	745	574	583	348 f/	566		227
Safflower	605	1049	693	631	505	697		1280

f /data point is from a production field sample

The variety used may not have the highest yield potential for that species.

1/ March- April 2008 sifting soil & severe cold reduced fallow oilseed stands.
June 10th hail beat the 2008 fallow oilseeds to the ground.