

WHEN TO SOW FLAX

By

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Flax, like other small grain crops, grows and thrives best under moderate temperatures. Early sowing, when possible, is therefore usually preferable to mid-late or late sowing. Early sowing permits the plants to branch more fully, blossom, set seed and the seed to develop and approach maturity before the higher temperatures or late summer drouths usually occur. Only when flax is to be sown in fields badly infested with early starting, fast growing weeds would it be preferable to defer sowing until most of these weed seeds could sprout, and the weeds thus destroyed before sowing. When that is necessary, however, one might well raise the question if sowing flax under such conditions would be profitable. Obviously if the flax price is good a small yield could still result in a profitable crop. With less favorable prices a larger yield would be necessary to make the crop pay out.

Early sowing of flax has the further advantage of better "escaping" what sometimes may be a heavy infestation of destructive diseases, such as rust or pasmo. In some years grasshoppers may become very numerous and destructive. Flax sown early has, under such conditions, a much better chance to "escape" a serious loss than has a late sown field.

Results in Eastern North Dakota

Early sowing, April 20 to May 10, has proven most desirable in the area represented by the Experiment Station at Fargo. Fox-tail (pigeon grass) is the most common weed in the flax fields in this area. This weed does not start until the soil is fairly warm—about the middle of May, nor does it grow rapidly until well into June or early July. Therefore, flax that is sown early, in a satisfactory seed bed, can start early, and if a good stand has been obtained, will generally "hold its own" until the crop is made.

In the trials reported from Fargo in the accompanying table, flax sown between April 20 and up to May 10 have yielded about the same. This period, then, can be classed as about the optimum date for sowing flax in this area. Flax sown after May 10 or about May 20, and later, resulted in progressively declining yields. In only one year out of the ten covered by this test was late May and June seeding better than the early seedings. In that year (1926) the early (April 20 and May 1) sown flax suffered from an early spring drouth, strong drying winds and late freezing temperatures. Later sown flax that year had the advantage of more timely spring rains and a relatively favorable growing season for late crops. This resulted in about equal and very satisfactory yields for flax

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sown May 10, which escaped most of the unfavorable conditions, and that sown at later intervals up to June 10.

Flax plants when fully emerged and the temperature drop is gradual, so that the plants experience a "hardening" process, can stand several degrees of frost, as has been observed in these trials and on many farms in recent years. In 1946 unusually low temperatures were experienced after flax had emerged, and in some instances made considerable growth. Temperatures down to 17° were recorded at Fargo on May 11. This very low temperature resulted in severe injury to all grains. Many fields of wheat, oats and barley in this area were frozen back to the ground. Flax fields suffered severe injury as might be expected. Some fields experienced a stand loss that required reseeding—others however, escaped with a surprisingly small loss of plants. It was the most severe May temperature experienced in this area for a long time, and for crops fully a week more advanced than usual.

Comparing average yields (bu. per acre) obtained in date-of-seeding trials with flax at 3 stations in North Dakota.

Date sown ¹	Fargo	Mandan	Dickinson	
	1919-1926 (9 yrs.) ²	1917-1931 (14 yrs.) ³	1923-1927 (4 yrs.) ⁴	1928-1943 (11 yrs.) ⁵
April 20	15.3	4.0	3.5	6.7
May 1	15.8	4.6	4.7	6.9
May 10	16.0	---	---	5.3
May 20	14.0	4.8	5.1	4.8
June 1	10.7	4.1	5.4	3.4
June 10	6.3	3.0	2.3	1.5

¹Date approximate only. At Dickinson previous to 1928 and Mandan previous to 1926, sowings were at 2 weeks intervals, April 20 would be about 4/15; May 20, 5/15 and June 10 about 6/15.

²In 1927 earliest seeding possible was 4/28, yield 20.2; May 7, 21.6; May 20, too wet; May 30, 14.3 and June 10, 11.2 bushels per acre.

³Complete failure in 1921. Trials for 3 seeding dates 1914-1916. May 1, 19.1 bu.; May 15, 18.7 bu.; and June 1, 16.2 bu. per acre.

⁴Average of 5 trials with different soil preparation. Crop failed in 1925.

⁵Trials not satisfactory and abandoned in 1933, 1935, 1936, 1937 and 1938.

Seeding before April 20 has rarely been possible on the heavy soil at Fargo. Only 3 years out of the 10 covered by this trial was such earlier April seeding possible. A cold soil and freezing temperatures caused some thinning of the early stands in two of these three years. Stands from flax sown about April 20 and May 1 were also exposed to freezing temperatures in some of the years. In any of these years, however, when a stand loss was experienced, the loss was largely made up by more branching among the remaining plants and larger seed set.

When early starting weeds such as wild oats are abundantly present, seeding flax may not be advisable unless these early weeds are first destroyed. The question then becomes, should flax be sown on such land, and if sown late after the wild oats have been destroyed, will the yield obtained be a profitable one? The answer to that question will depend on how serious the weed situation is and the kind of season which will be experienced. If the growing

season should be relatively cool, and there was a favorable distribution and supply of rainfall throughout the summer, the flax yields might still be quite satisfactory despite the late seeding. A very favorable flax price might also compensate for a possible lower yield, thus justifying the late seeding.

Another early starting weed which flax frequently must contend with, particularly in the eastern section of the State, is wild mustard. Fortunately, mustard plants can now be destroyed quite easily with selective herbicides properly and timely applied. Where mustard may be the principal weed hazard, sowing the flax in good season, and spraying later to destroy the mustard and other broad leaf plants which may be present, would seem to be a desirable practice and preferable to delayed seeding and extra cultivation. (See Ext. Circ. A-125).

Results in Western North Dakota

Flax yields are usually smaller in the western part of the State, and the results from trials in this area cover some years when summer drouths and Russian thistle cut seriously into crop production. With very small yields, differences resulting from differences in time of seeding were of little significance. In years when there is a shortage of summer moisture, Russian thistle, having a lower water requirement than flax, and starting early can become a serious weed. Flax seeding, whether early or late, therefore, is often more hazardous in that area than it is in the eastern counties. A promising "full stand" of flax, early in the season, may later be checked by summer drouth, permitting the thistle to develop to the extent that the flax is nearly "smothered". If the flax is sown late the crop faces the increasing hazards of summer drouth and high temperatures during the blossoming and ripening season. Thus differences in time of seeding flax in that area, unless the thistle is under control, generally is not large. A few plants of Russian thistle, growing to enormous size, may be as "smothering" as a larger number of smaller plants.

In recent years the summer rainfall in western North Dakota has been more favorable, the Russian thistle has been less a problem and flax stands and yields have generally been good. This has tended to increase the spread between early and later seeding, as can be noted in the earlier and later years at the Dickinson station.