July 2017

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TIME OF SOWING GRASS SEED.

JAMES WILSON, C. F. CURTIS, D. A. KENT.

For the purpose of ascertaining the best time to sow the seeds of cultivated grasses this station sowed the seeds of six different grasses at eight different times beginning March 23 and ending May 12, 1891. The varieties sown were red clover, white clover, timothy, orchard grass, tall meadow oat grass and awnless brome (*bromus inermus*). The plats are one rod square. The soil is rolling prairie with black surface and clay subsoil, fall plowed. The amount sown were, red clover and timothy at the rate of 20 pounds per acre, white clover 10 pounds per acre, tall meadow oat grass 50 pounds, orchard grass 30 pounds, and brome 60 pounds per acre. On March 24 two inches of snow fell after the first seeding that was sown on the surface without covering of any kind. At this seeding the frost was out of the ground 4 inches, the temperature of the atmosphere at 3 p. m. was 37° F.; one inch below the surface it was 38°. The soil was quite wet and unfit for any kind of cultivation. All seedings after the first were raked in thoroughly.

The temperature of the atmosphere March 30 was 40° and of the soil 37°.

At April 6th the atmosphere was 65°, soil 48°.
At April 13th the atmosphere 65°, soil 57°.
April 20th, atmosphere 66°, soil 67°.
April 27th, atmosphere 76°, soil 78°.
May 4th, atmosphere 49°, soil 47°.
May 11th, atmosphere 77°, soil 75°.

RED CLOVER.

We find that the sowings of red clover from March 23 to April 13th made good stands. After April 13 the stands became gradually thinner, until the crop was only one-fourth of a stand, and the weeds more and more in possession. The first three sowings were cut for hay. The sowing of March...
23 made three tons and 1200 pounds to the acre, the second, March 30, made two tons and 1600 pounds; the third, April 6, two tons 800 pounds to the acre. The sowings of April 20th and 27th were sufficiently good for a hay crop the following year. The May sowings were too thin for any purpose.

Notes taken October 22d, showed that the early sown plats had withstood the drouth best, and headed out the second time. At this date the third sowing showed unevenness in stand. The last sowings done in May, were thin, small, weakly, had bare spots and a failure generally. The later April sowings also showed unevenness, while the early sowings were most uniform and vigorous.

WHITE CLOVER.

When we examined the different plats in July, before cutting, the first sowing of white clover was eight inches high, all in bloom, a thick, close stand in excellent condition for pasture. The March 30th sowing was not as far advanced. The third plat, sown April 6th, was not much different from the second sowing, had a few heads in bloom, was a good stand. The fourth sowing, April 13th, was similar to the third. The fifth sowing, on April 20th, was a very poor stand, and weedy. The later sowings were still poorer stands, decreasing to total failures. We did not cut the white clover for hay. On October 22d the first two sowings were in good condition, but the third sowing was uneven and dead in patches, succeeding sowings were failures, the May sowing being about all dead.

TIMOTHY.

The March 23d sowing, in July was headed out, a very thick stand, and rusted. The March 30th sowing was not so good a stand, also rusted. The April 6th sowing was a fair stand, a lighter crop than the two previous plats, also badly rusted. The April 13th was headed out, not so much rusted as the previous plats, a uniform stand. The April 20th was as mature as any of the foregoing, a lighter stand and scarcely any rust; some weeds growing on vacant places. The April 27th sowing was nearly a complete failure, and the two May
sowings were total failures. A question arises regarding the cause of the rust in the early sown plats. The sowing on April 20th was only a partial stand, and almost free from rust. It seemed as if the sowing of 20 pounds of seed to the acre may have been too much, the plants growing so thick were smaller and weaker, and perhaps more liable to rust. The March 23 sowing gave us one ton and 1200 pounds an acre. The April 13th sowing, a thinner stand, gave two tons and 320 pounds an acre. The question of heavy seeding and rust remains open. On October 22d, the March 23 sowing was a good stand, even, and looked perfectly hardy, green, and three inches high. The March 30th sowing was not so good as the first. The April 6th sowing was uneven and light. The April 13th was only one-fourth of a stand, and small. This gave more hay than the first sowing, but had succumbed to the drouth. All later sowings were from four-fifths to nine-tenths dead, the very earliest sowing being the only very good stand.

TALL MEADOW OAT GRASS.

The March 23d sowing in July before mowing was a thick stand, ready for cutting, in seed, good hay or pasture crop.

The March 30th sowing was lighter. The April 6 sowing was similar to the preceding, about two feet high. The April 13th sowing was as good as any previous sowing. The stand was right for hay. The April 20th sowing seemed to be as good as any preceding sowing. The plat sown April 27th made an average growth in height, but was thin and weedy. Stand poor. The later sowings made about half a crop. The plats sown from March 23d to April 20th made an average yield of two tons and one hundred pounds. Those sown later were so weedy that the amount of hay could not be estimated.

The October conditions showed the March 23d sowing six inches high, vigorous growth, green, rank, thick and even. The March 30th similar. The April 6 showed a little unevenness. The April 13th quite uneven, growing in bunches. April 20th a poor stand, dead in spots. April 27th four-fifths dead, and the May sowings entire failures.
ORCHARD GRASS.

The notes taken before mowing show the March 23d sowings a perfect stand, no tufts or bunches, 16 inches high, the tops brown somewhat. March 30th similar, tops a little greener. April 6th, stand good, one foot high, even and uniform. April 13th, not quite as far advanced, rusted a little. All the foregoing were too thick for hay, but the bunch feature was not present. April 20th the stand was thinner, less rust, crop nearly as heavy as any. April 27th, almost a total failure. The May sowings also failures. The first sowings averaged two tons and 800 pounds on October 22d. Two first sowings thick and vigorous, tops browned. The next two in fair condition, but thinner. April 20th the plat is thin, bunchy and uneven. The April 27th, more bare spots, more bunchy. May 4th, half dead, very bunchy. May 11, larger bare spots; what was growing was in bunches and vigorous.

BROME GRASS.

The plat of awnless brome grass (bromus inermus) sown March 23d, at time of cutting, presented a dark green appearance, was free from rust and a thick even heavy crop. The second sowing was practically the same. The third sowing was healthy, even, and vigorous, but less advanced. The April 13th seeding was healthy, but small, and the stand was uneven. The plat sown April 20th seemed as vigorous as any previous sowing. The plat sown April 27th was thin and somewhat weedy, six inches high. The May 4th sowing was a fair stand, but short; none headed out. May 11th was uneven, and in patches, a fair stand for hay.

The March 23 sowing gave two tons 800 pounds an acre. The March 30 gave three tons 240 pounds an acre. This seeding was too thick for hay, and was perhaps not so well dried as the others. The other sowings were not cut.

At October 22 the March 23d sowing was four inches high, thick, green and vigorous. The March 30th was about the same. The April 6th, that gave the most hay, had suffered from the drouth and was uneven. The April 13th and 20th were uneven, bunchy and small growth. The April 27 was similar.
to the two preceding. The May sowings were nearly all dead.

This is comparatively a new grass coming into notice. It has been much recommended for the warmer latitudes farther south. It has broad luscious leaves in spring and fall. There are several varieties on the Station grounds, but the one here described is the most promising. Short awned brome (Brachypodium pinnatum) is also quite promising. We have not grown these yet in large acreages, nor put these to the supreme test of the cow. The latter, at time of cutting was a foot high, vigorous, healthy, and gave a good yield. It has broad bright green leaves late and early. We only sowed it once March 30th. It made three tons 1680 pounds of hay to the acre. Its late fall condition is very good. It keeps green into the winter.

We find from the foregoing data that the earliest seeding did best, good results coming from it in every case. No variety failed when sown early. The late sowings of all the varieties were failures or partial failures. Late sown red clover maintained a stand better than any other late sowing. The May sowings of all varieties were failures. Late sown varieties that looked well at time of cutting did not endure the subsequent drouth.

Bunches developed in thin stands. The first sown grasses were best in October.