

The Commercial

WINNIPEG, MARCH 13, 1893.

LADOGA WHEAT.

A bulletin has been issued from the Dominion experimental farm at Ottawa upon Ladoga wheat. A great deal of discussion has occurred upon the value of this wheat, and much has been said and written both for and against the growing of this variety of wheat. Ladoga wheat, it is well known, was introduced with the object of testing its early ripening qualities. It was stated that it would prove valuable in our northern regions, where the shortness of the season makes it risky to grow the slower maturing varieties. The introduction of the wheat in Manitoba has met with considerable opposition from millers and grain men, who claim that it is an inferior grain in point of quality, and that the growing of the grain here in any considerable quantity would result in much injury to the industry. Whatever opinions may be held as to the advisability of growing this variety of wheat, it cannot but be admitted that Prof. Saunders, director of the Dominion system of experimental farms, who has been instrumental in the introduction and testing of this wheat, has had but one object in view, namely, the advancement of the agricultural interests of the country as a whole. Additional information has been secured regarding Ladoga wheat from experiments made the past season, and this is given by Prof. Saunders in the bulletin now issued. The first milling test of Ladoga wheat on a large scale was made at Toronto, and the result is given in the bulletin as follows:—

Many efforts were made during the past two years to secure a sufficient quantity of Ladoga to make a thorough test at one of the larger mills as to the quality of the flour which could be made from it, as the early tests made in a small way were held to be insufficient and unreliable. Finally McLaughlin & Moore, of the Royal Dominion Mills, of Toronto, agreed to make a thorough test if a car load of this wheat could be procured for the purpose. On learning that it could be got in the Prince Albert district where some of the farmers had grown Ladoga very successfully for several years. A. Mackay, superintendent of the experimental farm, at Indian Head, was requested to visit the locality early in the year and purchase the necessary quantity of pure Ladoga. This reached Toronto early in April and on the 28th of that month the grinding was begun. I was present during the greater part of the day and saw the working of the wheat and was satisfied that the test was fairly conducted.

Several of the leading bakers in Toronto were supplied with the flour and several tests were made with it, and our chemist, F. T. Shutt, went to Toronto, to be present at some of these tests. The following report has been submitted by Mr. Shutt:—

WM. SAUNDERS, Esq.,

SIR,—I beg to report as follows regarding the Ladoga baking test conducted in Toronto last May: The wheat was ground by McLaughlin & Moore, Royal Dominion Mills, Toronto. In an interview Mr. McLaughlin expressed himself respecting the milling of Ladoga and the quality of the flour in the following terms: "Compared with red fife it grinds 'tough,' reducing the capacity of the mill—thus the output per hour was:—

Ladoga 16.3 barrels
Red Fife 18.1 "

These results, however, would not have been so adverse to Ladoga if the mill were run with it, say for a week. The present trial was for nine hours only. The cleaning process or separation of bran is more difficult in the case of Ladoga, though in this respect as well as in the grinding it ranks ahead of 'goose' wheat. It would yield about the same quantity of flour per bushel as No. 1 hard, in which also the percentages of 'bakers' strong' and low grade are similar to those from No. hard. I contain about the same percentage of gluten as No. 1 hard. The flour is yellow compared with that from No. 1 hard. Doubtless the flour would give better results after being allowed to age."

Through the courtesy of J. D. Nasmith baking trials were made at his bakery, Adelaide Street, Toronto. The first three experiments were conducted by Mr. Nasmith on 4th, 5th and 10th May. He found that the third trial yielded much whiter bread than the first, owing to a modification in the method and time of working the sponge and bough. Mr. Nasmith obtained bread from Ladoga, at the third trial, which but for a slight yellow tinge he considered equal to that from "Queen" (patent) brand. He further is of opinion that it is a strong flour, and that the yellow colour may be dissipated to a great extent by allowing fermentation to proceed longer than usual. The sponge of Ladoga works quicker than that of red fife. In a comparative test Mr. Nasmith obtained from 100 lbs. of "Queen" flour, 147 lbs. of bread; from 100 lbs. of "Ladoga" flour, 152 lbs. of bread.

The following trials were made under my own supervision. The weights of flour, yeast, salt and water used, as well as of the sponge, dough and bread were carefully recorded. The baker used a sufficient quantity of water, according to his own judgment, to bring the sponge and dough in each case to the right consistency; the weight of the water used being noted. The sponge in each case was set for eleven hours, the initial temperature being 76° F. The temperature of the bake house ranged from 70° to 72° F. throughout the night.

The "Queen" brand—This rose well in the sponge and improved in the pans, and the bread was very satisfactory in all respects. From 100 lbs of flour 140 lbs 8 oz of bread were baked.

The Ladoga flour—At the end of, the setting period (11 hours) the sponge was much "slack" or "than that of "Queen." It had evidently been allowed to ferment too long and had become "spant." It would not "improve or rise in the pans, and the resulting bread was yellow and "flat" compared with that from the Queen flour. From 100 lbs of the flour 145 lbs 13 oz of bread were obtained.

I would briefly sum up as follows: 1. That it is evident that the right conditions for obtaining the best results in baking Ladoga are not as yet well understood. Good, well risen white bread has been baked from Ladoga flour which on another occasion has yielded flat, heavy, yellowish bread. The public at present demand a white bread, and it is chiefly on this account, I think, that the bakers are averse to Ladoga flour—the bread from it usually having a yellowish colour.

2. The physical character of the gluten is different from that of the red fife. It is somewhat inferior in color and elasticity, and is more sticky. Age would most probably improve its quality. In percentage of gluten, however, it is fully equal to red fife—see Bulletin 4, Experimental Farm series.

3. The Ladoga is drier, and consequently takes up more water, and yields a larger weight of bread than the red fife flour. This I surmised from my analyses of the red fife and Ladoga flours given in the bulletin above mentioned.

FRANK T. SHUTT,

Chemist Dominion Experimental Farms.

Ottawa, January 2nd, 1893.

On the 9th of May, Mr. McLaughlin wrote

as follows: "Mr. Coleman has tried the flour, so has Mr. Nasmith, but neither have yet made tests satisfactory to themselves. So far as we have seen of the bread it looks as if the color was going to prove very yellow and the strength better than we anticipated, but nothing positive can be said until these bakers have made satisfactory tests." On the 10th he says:—"In our yesterday's letter we said that so far as we had yet seen of the Ladoga bread it was going to prove very yellow. To-day we have samples from both bakers which are surprisingly different from the samples on which we based the 'very yellow' opinion." Mr. Nasmith, I think, intends sending you some loaves of bread which, if they reach you in good order, will do something to confirm your faith in Ladoga. We shall not venture any further opinion until the bakers have made their final tests." On the same day J. D. Nasmith writes as follows:—"I sent you to-day by express three loaves, two from the Ladoga flour, the other one is from McLaughlin's 'queen.' The first comparative trial a week ago was surprising, establishing strength enough, but such a very yellow color as I never saw before in bread. To-day's sample, if it reaches you in time, I know will gratify you, as it did me. I did not at all anticipate such results from first trial." When this bread arrived I was absent from home, and did not return for several weeks, when the bread was spoilt. Those who saw it and tested it while fresh pronounced it excellent.

Nothing further was heard on this subject until 14th June, when Mr. McLaughlin wrote again as follows:—"We have now had sufficient experience of the Ladoga flour to satisfy us that it is never going to be a favorite with bakers. Nasmith has not been able to repeat the loaf he sent you, and Coleman condemns it in unstinted terms. A third man, B. Woodman of Parkdale, to whom we sent some, had quite as bad an experience as Coleman. These are the only three to whom we have sent the flour. Certainly the bread—all but that one sample of Nasmith's—was unfit for Toronto trade."

Mr. McLaughlin's final report was written on the 25th August, and read as follows:—

TORONTO, 25th August, 1892.

Prof. WM. SAUNDERS,

Director Dominion Experimental Farms,
Ottawa.

DEAR SIR,—On the 28th April last we ground 600 bushels Ladoga wheat, shipped to us from Prince Albert, Northwest Territory. The wheat was in good condition, fairly plump, free from smut or frost and very uniform. In grinding it worked quite different from ordinary Manitoba hard wheat, being harder to reduce, and requiring more power. In this respect it resembled goose wheat more than any other variety. We sent some of the "patent" and some of the "strong bakers" flour to different bakers in Toronto, telling them what it was, and requesting them to be as careful in their baking tests as we had been in milling it. In every test the flours were pronounced inferior to the flours from ordinary No 1 and No. 2 hard Manitoba wheat. In all cases the deficiency in strength, the very yellow color, and the coarse texture of the bread were the evils complained of. No baker who tested it could be persuaded to buy the flours afterwards, even at a considerable reduction in price from the price of flours similarly made from No. 2 hard Manitoba. Later tests, after the flours had been six weeks old, resulted no better.

Baked as household flour, the Ladoga patent and strong bakers worked fairly and made bread that was up to the quality of much that is used in some places, but not good enough for people who are particular as to appearance as well as taste. Our different experiences with this flour lead us to this conclusion. Good unfrosted Ladoga wheat, such as the lot we ground, will make better flour than No. 2 regular Manitoba wheat, but not as good as No. 1