

MILLING AND BAKING VALUES OF GRADED WHEAT.

Further tests designed to show the relative milling and baking values of the different grades of wheat have been conducted by Mr. F. J. Birchard and Mr. A. W. Alcock of the Dominion Grain Research Laboratory, and from these results it is possible to form a very close estimate of the relative values of the higher grades and also special No. 4 and special No. 5, and to make a fair approximation of the value of the others. In the case of the higher and special grades, the differences in the baking values are small and relatively unimportant, they scarcely need to be considered, so that the values of the wheat should be very nearly proportionally to the yields of flour obtained. The comparative yields of flour and offal recalculated to a basis of 13.5% moisture content was found to be as follows:

No. Grade.	P.C. Clean- ing loss.	P.C. Bran and Shorts.	P.C. Flour.	P.C. Milling loss.
1	2.1	22.4	72.6	2.9
2	2.4	24.1	71.7	1.8
3	3.2	25.1	68.8	2.9
4	3.2	25.3	70.1	1.4
4*	3.0	29.4	65.6	2.0
5	3.0	28.1	67.2	1.7
5*	2.4	31.0	64.3	2.3

(*)—Special.

Distributing the milling loss in the proportion of the products obtained, and including also the test weights, this table becomes—neglecting fractions:

No. Grade.	Test weights.	Offal.	Flour.
1	6	25	75
2	62	27	73
3	59.5	29	71
4	59	29	71
4 Special	54	33	67
5	58	31.5	68.5
5 Special	52	34	66

The slight differences obtained in the second series of tests as compared with those previously reported are partially accounted for by the fact that the tests were made on average samples as received by the Inspection Department, and these samples naturally vary slightly from month to month. It must also be remembered that in all scientific work a certain amount of allowance must be made for the unavoidable error due to the nature of the experiments.

It would thus appear that no great error would be made in estimating the value of the grades, Nos. 1, 2, 3, Special No. 4 and Special No. 5 on the basis of the yields recorded above. In the case of commercial No. 4 and commercial No. 5, the somewhat inferior baking qualities of the flour produced from the wheats must be considered. Commercial No. 4 gave a loaf only very slightly inferior to the others as regards, loaf volume, colour, texture, shape and general appearance. A greater difference was noticed in the value of commercial No. 5, however, particularly

as regards, volume, colour and general appearance of the loaf, so that in estimating the value of this grade, a somewhat greater allowance must be made for its inferior baking qualities as compared with the higher grades. It would be very easy, however, to magnify the importance of these differences, since it has been amply demonstrated that it is possible to produce bread of fair quality from any of the above grades without difficulty.

Particular attention should also be drawn to the very high baking quality of the special grades, while the yields are smaller than with the contract grades, the baking qualities are superior in every particular but one,—that of colour. As regards texture, shape and general appearance of the loaf, the grades Special No. 4 and Special No. 5 easily excel all the others; the colour, however, of the bread was uniformly of a slightly darker shade, and this was the only point of inferiority which could be observed.

In fairness to the miller it should be pointed out that in milling the lower grades, particularly the specials where the yields are much lower, the flouring capacity of the mill is proportionately reduced while his expenses are not diminished, so that the actual milling value would be somewhat less for these grades than would appear from the table above.

INSURANCE IN KINGSLAND, N. J., LOSS.

The Canadian Car and Foundry Company underwriters state they carried about \$2,000,000 fire insurance on the entire risk and contents on all important buildings which were equipped with automatic sprinklers. The policies covered the fire, and not the explosion hazard. They have the 90 per cent. co-insurance clause and also the sprinkler clause. In view of the under insurance the co-insurance clause may make a decided difference to the underwriters.

All buildings were one-story, metal on wooden studs, without sheathing, gravel roofs on joists; non-combustible floors. The raw stock consisted of machined shells and parts, together with black powder, smokeless powder and trinitrotoluol. The shell is loaded with black powder in section No. 2, which is the most hazardous section in the group. Each employee had approximately 2 ounces of powder, and there were about 200 such containers in the building. One day's supply of powder was kept in a magazine inside the building, possibly four kegs at a time; the main supply in detached magazine. When shrapnel was loaded it was taken to the packing house and packed in cases together with the brass shells and necessary number of bags of smokeless powder. These are not assembled at the plant, but shipped together in same case, 8 in each case.

The high explosive shells were loaded in buildings Nos. 10, 11 and 12, and the trinitrotoluol is melted and poured into the shells, after which these were taken to the high explosive packing and ship-

ping building and assembled in cases in the same manner as the shrapnel. Both the shrapnel and the high explosive loading buildings have but a small percentage of the entire value, probably not over 2 per cent. in either case, the entire contents value being \$2,000,000. The packing case storage building, No. 22, together with the packing and shipping sheds, Nos. 1 and 19, and other main buildings in this group were under standard sprinkler protection. The entire property was surrounded by a board fence surmounted by a barbed wire charged with 400 volts of electricity. There were numerous guards armed with rifles stationed in sentry boxes about the property.

Company managers have been somewhat afraid of munitions risks for some time past, and it is quite likely that this disaster will result in making it almost impossible to cover any sizable munitions risk with fire insurance. It is also very probable that many outstanding policies on such hazards will be cancelled. A drastic tightening of an already difficult insurance market for munitions lines will undoubtedly take place.

Company managers were much interested in the company's loss, and much the more so as efforts were made to suppress the list of insurance. One company interested, however, furnishes the following, which embraces nearly all of the insurance.

Globe & Rutgers of N. Y.	\$503,500
North River, United States, Richmond, Williamsburgh City, etc.	425,000
Liverpool and London and Globe	180,000
Home of New York	150,000
North British and Mercantile	120,000
Scottish Union and National	120,000
Aetna of Hartford	80,000
Continental	20,000
Fidelity-Phenix	20,000
Northern Assurance Co., London	40,000
National of Hartford	50,000
Insurance Company of North America	77,500
Rhode Island	20,000
Western Assurance Co., Toronto	45,000
New York Underwriters Agency	50,000
Merchants Fire of New York	85,000
National Union of Pittsburgh	25,000

It is understood that the Russian Government had over \$5,000,000 worth of munitions stored at the plant, and that these were either uninsured or else covered abroad. It is also thought that Lloyds, London, underwriters have a large amount at risk. The insurance placed in this country amounts to about \$2,300,000, and the total loss is certainly far above \$10,000,000.

Apparently there will be very little, if any, salvage, so the ninety per cent. co-insurance clause on the policies will be of as little benefit to the fire insurance companies as the automatic sprinklers were. It is clear that the loss above the insurance must be at least five million dollars, and may be much more.

TO INVESTORS

THOSE WHO, FROM TIME TO TIME, HAVE
FUNDS REQUIRING INVESTMENT
MAY PURCHASE AT PAR

DOMINION OF CANADA DEBENTURE STOCK

IN SUMS OF \$500, OR ANY MULTIPLE THEREOF

Principal repayable 1st October, 1919.

Interest payable half-yearly, 1st April and 1st October by cheque (free of exchange at any chartered Bank in Canada) at the rate of five per cent per annum from the date of purchase.

Holders of this stock will have the privilege of surrendering at par and accrued interest, as the equivalent of cash, in payment of any allotment made under any future war loan issue in Canada other than an issue of Treasury Bills or other like short date security.

Proceeds of this stock are for war purposes only.

A commission of one-quarter of one per cent will be allowed to recognized bond and stock brokers on allotments made in respect of applications for this stock which bear their stamp.

For application forms apply to the Deputy Minister of Finance, Ottawa.

DEPARTMENT OF FINANCE, OTTAWA
OCTOBER 7th, 1916.