TESTING OF NEW-ZEALAND-GROWN WHEATS.

RESULTS FOR YEAR 1925.

(Continued.)

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III. BAKING TESTS.

EXPERIMENTAL baking tests are designed to determine the actual suitability of different flours for breadmaking. In particular such tests differentiate between those flours which, though low in protein content, yet make good loaves, and those flours which, possessing a good protein content, for one reason or another fail to produce good bread. The work carried out by the Chemistry Section in 1925 has been fairly complete, and affords an insight into the behaviour of the flours obtained from the New-Zealand-grown wheats when undergoing the practical test of baking; it also shows such correlation as exists between chemical analyses and baking tests. Some additional analytical figures, to be given in another article, will elaborate this point

To carry out baking tests accurately and efficiently, the conditions of baking must be as nearly the same in every series of loaves as it is possible to maintain them. Even baking tests, however, are not infallible, and it is not always easy to obtain absolutely concordant results. All tests, however, are done in duplicate. If, as sometimes happens, these duplicates do not approximately agree, it is then necessary to repeat tests a third and perhaps a fourth time. From an average of such a series a fairly correct idea of the breadmaking qualities of a flour may be obtained.

The method of experimental baking is standardized as far as possible. Not only must the sugar, salt, and yeast be always of the same good quality and used in exactly the same amounts, but the mixing, doughing, proving, and baking processes must be carried out under the same conditions in every case. The only differences in treatment are the amount of water added in mixing the dough, and the length of time the dough is allowed to ferment. The amount of water added is based on the percentage absorption of water.

SIZE OF LOAF.

The size, or volume, of a loaf is a measure of the quality or strength of the flour from which it is baked. A dough will expand two to three times its original volume before it reaches its maximum expansion, the time for this depending on the quality of the flour and the activity of the yeast. In the present experimental tests the dough was allowed to reach a point just short of its maximum expansion before it was placed in the oven. It is true that in commercial baking a loaf is not allowed to ferment as long as this, but a flour which gives the best loaf under the maximum expansion of laboratory baking tests will also make a loaf of good volume and texture when baked in the ordinary commercial way.