

CONTRIBUTION REGARDING THE ESTABLISHMENT OF WHEAT, OAT AND BARLEY FLOUR MIXTURE TO OBTAIN DIETETIC BAKERY PRODUCTS

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Abstract: The capitalization of cereals type oat flour and barley flour, become a problem with many implication in obtaining the dietetic bakery products.

The research present the influence of oat flour and barley flour about the bakery quality. An oat flour addition until 6%, in mixture with barley flour 3÷6% and wheat flour type 800, can resolve the desideratum: the dietetic bakery products with improvement content of minerals and vitamins addition.

Keywords: oat flour, barley flour, farinograf, dietetic products.

1. INTRODUCTION

The main subject of this research is the quality evaluation of wheat, oat and barley flour mixture to obtain dietetic bakery products.

It was used a mixture of wheat flour type 800, oat and barley flour (in accordance with table 1) to achieve the goal proposed.

Parameters of flour mixture were established with farinograf.

The important parameters analyzed to evaluate the flour quality are:

- capacity of hydration, %;
- dough stability, minutes;
- moist gluten quantity, %.

2. MATERIALS AND METHODS

It was used six tests based on the variation of oat and barley flour to achieve the experiment (table 1).

Tests of research program. Table 1.

Test	Oat and barley flour mixture, %	Barley flour, %	Oat flour, %
Standard	0	0	0
1	6	3	3
2	12	6	6
3	18	9	9
4	24	12	12

To establish the moist gluten content of flour was used the formula:

$$G = 100 \cdot m/50 = 2m,$$

m – gluten quantity, grams;

50 – quantity of flour test, grams.

3. RESULTS AND DISCUSIONS

The experimental results are presented in table 2, based on the figures 1, 2, 3, 4 and 5.

Experimental results Table 2.

Test	Moist gluten, %	Capacity of hydration, %	Increase, minutes	Stability, minutes
Standard	31	60,7	1,5	11
1	28,9	58	1,7	10
2	27,7	57,2	2	8
3	25	56,6	2,5	4
4	23,5	53	3,5	2,5

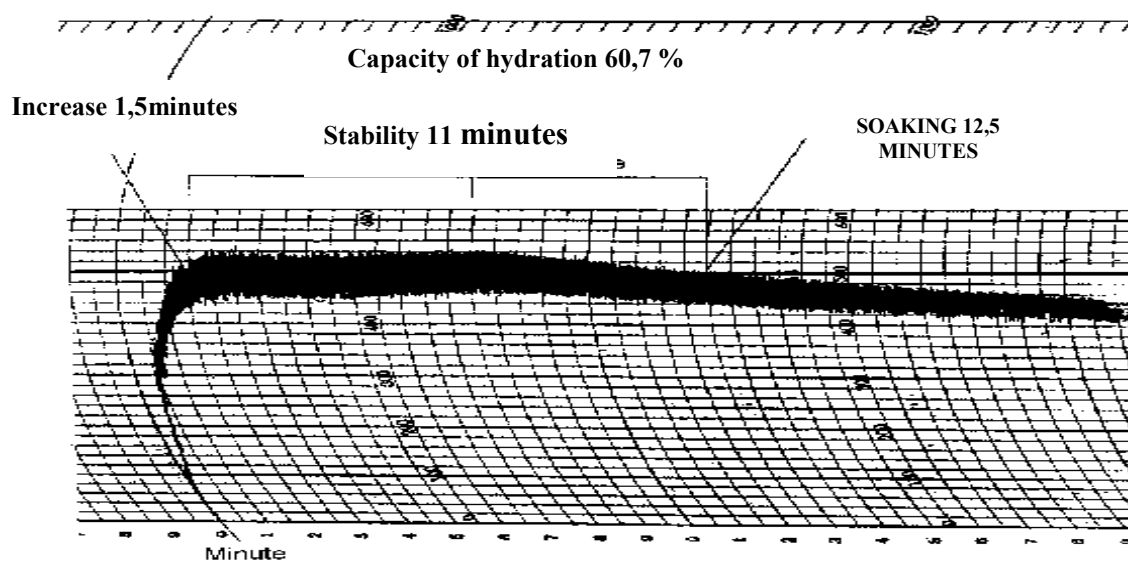


Fig. 1. Barley and oat flour mixture 0 %

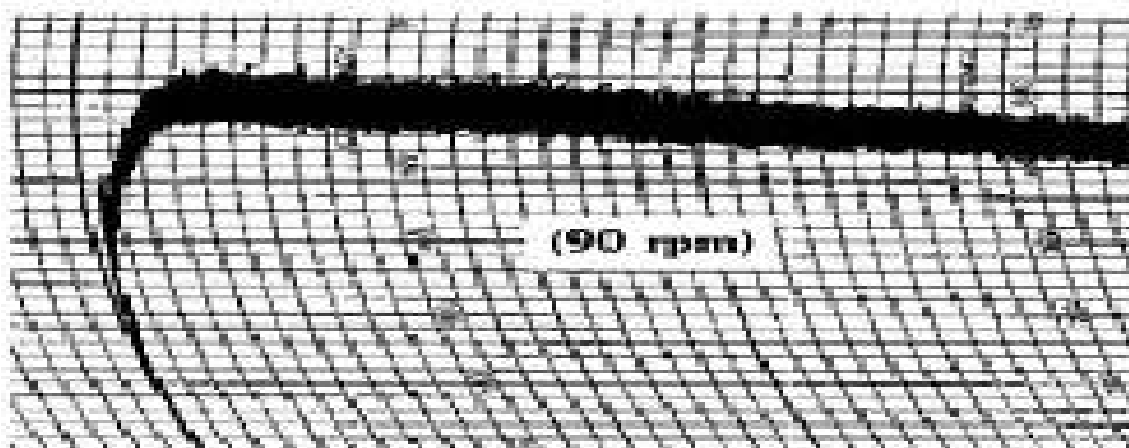


Fig. 2. Barley and oat flour mixture 6 %

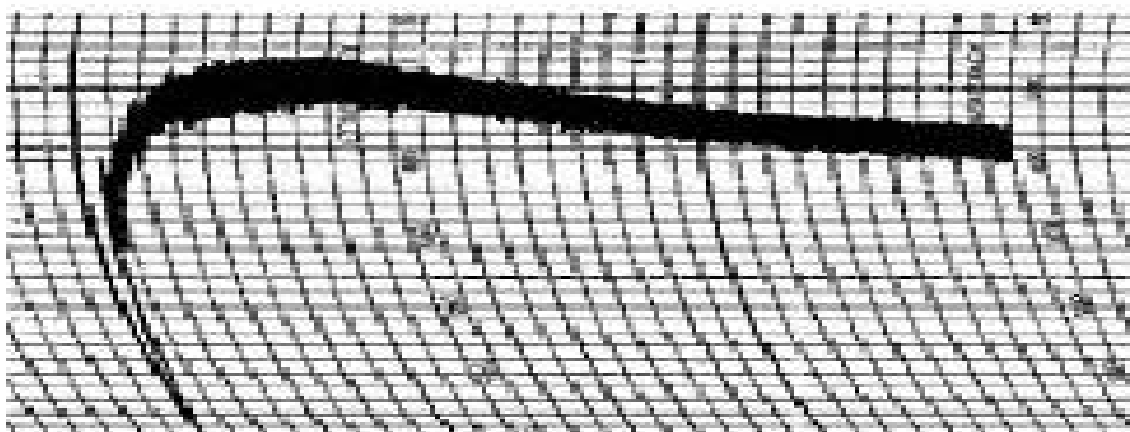


Fig. 3. Barley and oat flour mixture 12 %

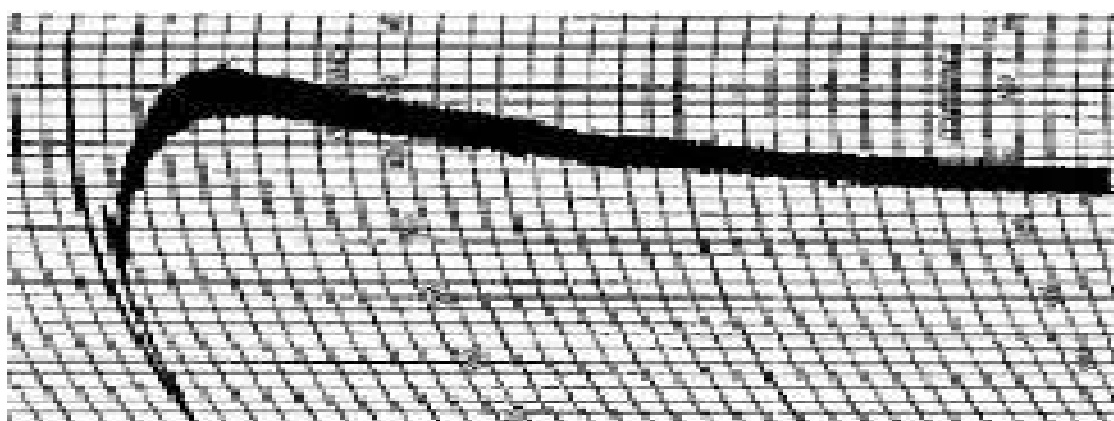


Fig. 4. Barley and oat flour mixture 18 %

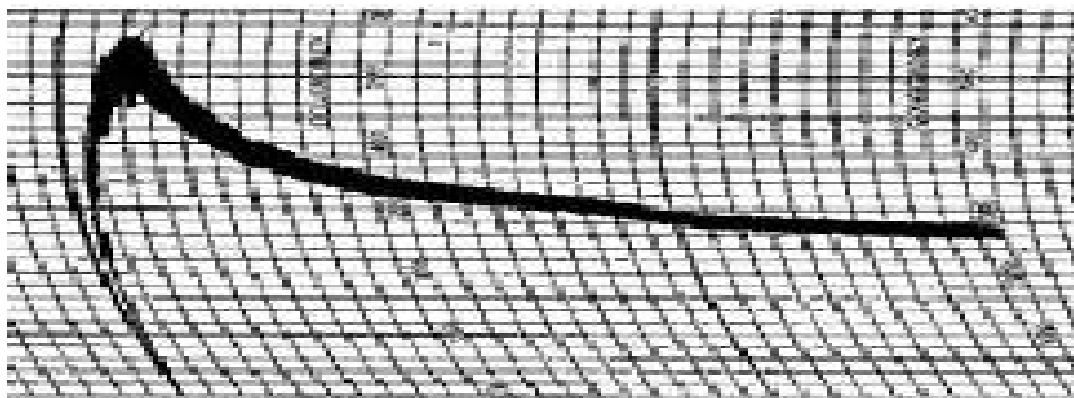


Fig. 5. Barley and oat flour mixture 24 %

In accordance with the experimental results the best value of hydration capacity (58%) of flour mixture is test with 6% barley and oat flour (figure 2). The content of moist gluten is 28,9%. These marks confirm the good quality of flour mixture.

The flour mixture with 12% adding of oat and barley flour (figure 3) has good quality, with suitable bakery features, in accordance with farinogram: hydration capacity 57,2%, establishment 8 minutes. These results confirm the possibility to realise some recipes for dietetic products based on the utilisation of a flour mixture with three compounds: wheat flour type 800 (88%), barley flour (6%) and oat flour (6%).

The test number 4 (figure 5), with 24% adding of oat and barley flour, isn't suitable. In this case the flour quality is unsatisfactory because of the dough stability (2,5 minutes).

Advanced measure of soaking indicate a quickly degradation of gluten structure.

4. CONCLUSIONS

The results of research allow the following conclusion: the 3-6 % adding of barley flour and oat flour reported to entire wheat flour quantity contribute to obtain dough with improved features which lead to make dietetic bakery products, with big fibres content and increased nutritive value in minerals and vitamins.

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