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CONTRIBUTION CONCERNING THE INFLUENCE OF MALT IN THE CONDITIONS OF BAKING PROCESS

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Abstract

The research made in lab condition shows the positive influence of the additions of malt in proportion of 12% on conditions of finalize, through of the roast dough form by the white flour in the panification process. Through the process enzymatic supplementary obtained by addition of malt he succeeded a decrease a durations of roast of 15% with the sustentation constantly temperature of 220°C.

Keywords: *Malt, panification, dough, enzymatic.*

Introduction

The work represents the attempts of modernize the classic technological conditions by supplementary enzymatic effect creates in addition of malt, trying to answer to the preoccupations concerning of an assurance industrial durable activities through the technological and ecologic capitalization.

The beer industry strongly developed in the past decades thanks to the large consummation from the population. Is known the utilization of malt, in the process manufacture beer and the implications pollution at technological process (Cojocaru, 1980; Segal, 1973). The malt in the form of malt flour (known as farinaceous dust) is a part of by product group with technical value.

The chemical composition made of protean substance, content lipids, fiber in the shape of cellulose, content the mineral and non nitrous substance drove to the orientation process of capitalization in the bakery industry, because of the technological process (Berzescu, 1981; Marinescu, 1985).

The flour of malt present intensely enzymatic activity in which extraction and boiling process are not included.

Experimental

For the realization of programs is utilized a program conceived in the compound system centered the rotator with 2 free variables in the baking process: temperature and duration, of a dough form at the: wheat flour tip 680, NaCl 1.25%, yeast 5%, water 50% reported to the total amount of material.

For the process appreciation and quality of the terminal products is used the method, which are compliant, the Standardize Norms of the valid process.

In the table 1 is presented the suggested program with the free variables for the process realization.

Table 1. Free variable used for the realization of the process

Independent variables	X_i	Codification values			
		-1	0	1	$\Delta \times$
		Real values			
Temperature, °C	X_1	200	220	240	2
Duration, minutes	X_2	36	38	40	2

Results and Discussions

For appreciation of the process are suggested a research program which utilized the correlation between the free parameters Xi render in the table 1 and the values dependency Yi, which shows the quality of terminal products with addition of malt, which are the general equations of regression:

$$Y = b_o + bi \cdot xi + b_{ij} \cdot x_i x_j + b_{ii} \cdot x_{ii}.$$

For the interpretation is chose the graphic method rendered in the figures 1, 2, and 3.

The acidity of dough's represented in figure 1, fallowing the positive sense in the obtaining qualitative terminal products which are influence to the temperature and duration by an addition of malt 12% distinguish the reduced process, when temperature and duration is placed to minimum limit of process.

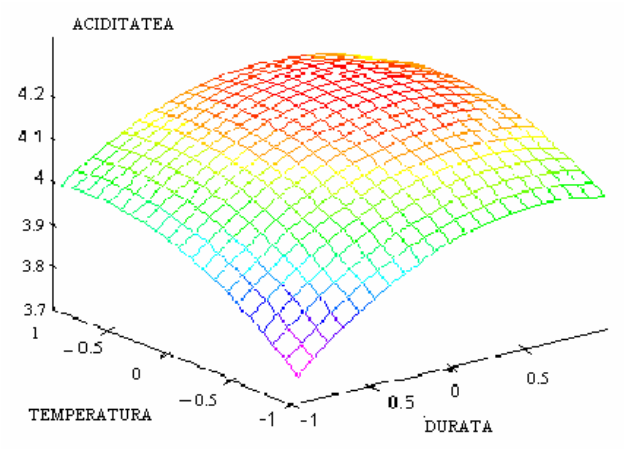

Fig. 1. The influence of temperature and duration to acidity by bread with flour malt addition 12%

In figure 2 is presented the elasticity of terminal products, of cores in the conditions in which the duration and temperature of roast are varied. Finally a product with elasticity about admissible limit is obtained. Through the addition of malt it took in limit of 24% and can be minimized the influence ploughs constantly durations of roast.

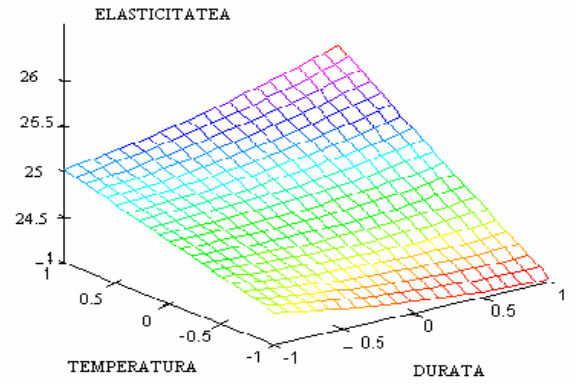

Fig. 2. The influence of temperature and duration to elasticity by bread with flour malt addition 12%

The qualitative aspect were defined to of charterage mark, note of bonification can render the qualitative appearance of produced: the report core / crust, color, porosity core etc. Figure 3 shows this point of

view estimating positive the influence duration of roast and negative temperature of roast.

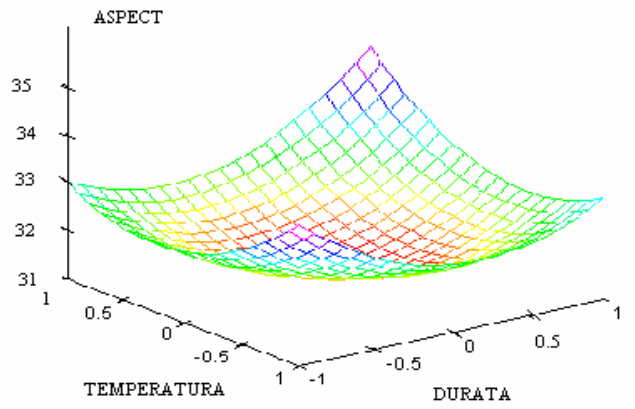

Fig. 3. The influence of temperature and duration to aspect by bread with flour malt addition 12%

Conclusions

The researches program in first permitted the positive appreciation of the addition of malt with enzymatic activity about classic technological process of panification, permitting a possible generalization and expand to the of a level production pilot. An addition of 12 % malt, like by-product from beer industry, with the sustentation of constantly temperature of 220 ^{0}C and a duration of 38 minute can be consider as useful in the reconsideration classic technologies of panification. The work is taken down on general tendency to the realization of durable developments, feasibly by the capitalization of by-product and residues from food industry.

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