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Edible coating based on modified corn starch/tomato powder: Effect on the quality of dough bread

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1 **Edible coating based on modified corn starch/tomato powder: effect on the quality of dough**  
2 **bread**

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11 **Abstract**

12 The ascorbic acid modified starch coating solutions were developed based on the Central  
13 Compound Rotational Design (CCRD) and the variables were ascorbic acid and tomato powder.  
14 The dough was immersed in the coating solution to be analyzed for maximum expansion factor,  
15 bread crumb and crust color, specific volume, crumb image and Scanning Electron Microscopy  
16 (SEM). The results show that the corn starch with ascorbic also contributed to the expansion of the  
17 bread. The crust browning index decreased when the levels of ascorbic acid increase up to 1.6%,  
18 correlated with 4.0% of tomato powder; the best specific volume results for the breads samples  
19 were run 7 (4.25 cm<sup>3</sup>/g) and run 2 (3.84 cm<sup>3</sup>/g). In the data obtained, the inclusion of up to 7.5% of  
20 tomato powder in the solutions presented a browning index of crumb superior compared with others  
21 samples promoting a good quality bread. The use of ascorbic acid in the modification of the starch  
22 contributed to the increase of the specific volume of bread. The results were analyzed by second-  
23 order multivariate regression analysis and ANOVA with Tukey test at a significance level of 5%  
24 (p≤0.05).

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