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Influence of Blending Semolina with Ascorbic Acid on Physico-Chemical and Sensory Quality of Bread

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Abstract:
A laboratory experiment was carried out in partnership with the Yemeni Company for Flour Mills and Silos / Aden, and based on Al-Sanabel brand flour as a basis to study the effect of adding different proportions of coarse semolina flour (0, 20, 30, 40%), and three levels of ascorbic acid (0, 40 and 70 ppm), where coarse semolina was used as a source that is expected to contain a higher quantity and quality of protein. The interaction data of ascorbic acid and the addition of semolina confirmed the absence of a significant effect on the percentage of moisture and fat, as well as the percentage of starch and ash. The duo significantly reduced the fiber content in the resulting flour. High level of adding coarse semolina (B4C1) with two levels of ascorbic acid (C3, C2) resulted in a non-significant increase in the protein content in the resulting flour compared to the non-added combination (B3C1). The highest percentage of protein was 11.389% when treated (B4C3). The results showed that the interaction between the proportions of coarse semolina and the added ascorbic acid had a significant effect on the proportion of carbohydrates, but this is because of the coarse semolina. The increase was significant only when the proportion of coarse semolina was increased, so the highest levels of carbohydrates (75.108%) were obtained at the highest level of semolina (B4C1). The interaction between coarse semolina and ascorbic acid showed significant effect in reducing the percentage of fiber in the resulting flour, resulting in 10.7 to 25.9% for the two higher combinations of semolina (B4C1 and B4C3), respectively. Our results showed an increase in the sizes of bread pieces with a higher percentage of addition for both factors. The highest loss (10.9%) was obtained when using the highest level of acid and in the absence of addition of coarse semolina, and vice versa showed lower loss rate of 7.6%. The findings in this study show the potentiality of the combined use of coarse semolina and ascorbic acid in bread production.