**APPLICATION OF MESQUITE (*PROSOPIS SPP.*) AS FUNCTIONAL COMPONENT IN SPONGE CAKE**

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***Abstract***

*The objective of the study was to analyze the effect of sugar replacement with different levels of mesquite flour on the leavening performance of batter, the nutritional and technological quality of the sponge cake. Materials for the production of sponge cakes were wheat flour, sugar, eggs, mesquite flour from the market. The cakes without and with mesquite were analyzed for obtaining nutritional composition (protein, fat, carbohydrates, dietary fiber, energy value). Sample analysis also included measurement of color properties in the CIE L\*a\*b\* color system using a colorimeter. Two samples were prepared to contain different proportions of mesquite flour (25% and 50%) in combination with sugar. The nutritional and color properties of cakes were also evaluated. The cake with 50% mesquite flour had significantly (p<0.05) improved the nutritional quality compared to the control cake. For protein content, it was observed that the cakes with 25% and 50% mesquite flour protein contents (10.25-13.21%) were higher than the control sample (8.89%). In terms of moisture content, the highest moisture percentage was recorded in the control cake (24.55%), followed by cake with 25% mesquite flour (23.47) and cake with 50% mesquite flour (22.63%). The dietary fiber content is higher in cake with 50% mesquite flour and lowers in sample control cake. Fat content and energy decreased in the sponge cakes enrichment with mesquite flour. The crumb color on the control sample was significantly different from those of the cake with mesquite flour. Observed decreased lightness value of cakes as the substitution level of sugar with mesquite flour into formulation was elevated. Control cake had a significant difference in b\* and C\* values compared to other cakes. The color differences could be due to uneven exposure of sponge cakes surface area to high baking temperature and colored compounds formed from chemical reactions such as caramelization and Maillard reaction. According to these results, in cakes with 25% and 50% mesquite flour the total color difference was appreciable by the human eye. From this study, it may be concluded that cake prepared with 50% mesquite flour incorporation had very good quality properties and it also improved the nutritional profile over control cake. It is a healthy cake which has therapeutic property.*

***Keywords****: sponge cake, mesquite, quality, nutrition, sensory analysis.*