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Development and Quality Evaluation of Bakery Products for Acrylamide Contents.

Acrylamide is formed in starchy foods through a chemical reaction takes place between asparagine amino acid and reducing sugars such as glucose and fructose, present naturally in foods. This compound is formed at high temperature baking and cooking in the presence of low moisture conditions. The core objective of this study was to determine the concentration of acrylamide produced in bakery products such as biscuits, muffins, pizza and cakes, etc. in two temperature conditions i.e. at 1800C and 2000C, for 20 minutes each, during baking. In order to claim the validity of the products, the contents validity carried out by analyzing the prepared samples for acrylamide content with the HPLC method including the bromine derivatization of both prepared samples. A comparative sensory evaluation of these food samples was also carried out to find out the acceptability differences. The results of bar diagrams revealed that the maximum acrylamide contents (5120 μ g/kg) were recorded in standard sample, wheras in the food samples baked at 1800C for 20 minutes, the acrylamide contents were reduced to 65.21, 81.19, 84.24 and 151.52 μ g/kg in pizza, cake, muffin and biscuits, respectively. In case of high temperature baking i.e. at 2000C for 20 minutes, the acrylamide contents were reduced to 65.21 μ g/kg in pizza, cake, muffin and biscuits, respectively. In case of high temperature baking i.e. at 2000C for 20 minutes, the acrylamide contents were reduced to 65.21 μ g/kg in pizza, cake, muffin and biscuits, respectively. So, it is concluded that baking of food products containing flour at high temperature for atleast 20 minutes reduced the acrylamide contents and also increased the sensory attributes and overall acceptability of products.

Biography

Muhammad Mushtaq Ahmad has more than 32 years of expereince in teaching, training and research and development. Currently, he is serving as the Professor and Chairperson, Department of Food Science and Technology in one of the universities in Pakistan. He is also serving as the Honorary Chairman, Punjab Halal Certification Board, PHDA. He has also been involved as the Member National Agriculture Experts Panel in developing the various agriculture policies/ foresights for the Government of Pakistan Vision 2025.

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