Currently, due to an unbalanced diet and a sedentary lifestyle, the number of people with chronic diseases has increased. Because of that, it is increasingly necessary to extend the range of foods that meet nutritional and taste requirements, and also be able to deliver health benefits. A good option is the development of functional foods. A baked oatmeal cookie without sugar was formulated, which also incorporated a hypoglycemic functional ingredient (250 µm) composed of apple pomace, tomato pomace, rice bran and cactus cladode flour. The objectives of this study were to develop and to optimize a cookie formulation incorporating a hypoglycemic functional ingredient through the application of a simplex-centroid special cubic mixture design; to determine some chemical, physical and functional characteristics of the optimum product and the base formulation, and to compare the optimal formulation with the base formulation through some sensory parameters. The optimization was carried out taking into account the sensory response and antioxidant capacity by DPPH assay, yielding result, a matrix composed of 48.8% mixture of integral flour and oat, 24.7% of margarine and 9.3% of hypoglycemic functional ingredient. The dietary fiber content was 7.3 g per serving and this optimum product showed antioxidant capacity, both parameters significantly higher than the base formulation. The addition of 9.3% of hypoglycemic functional ingredient did not affect significantly the acceptability or preference at consumer level. Quality parameters such as shape, color, appearance, flavor and texture were adversely affected, with some judge comments of herbaceous and dry mouth feeling.

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