

Development of a quantified relationship between manufacturing techniques and regulatory requirements for bread manufacture

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Since bread is a very popular and important food product across the whole cross profile of the society a series of regulatory requirements has been enacted for the sake of mass customer. Though there are stipulated standards for the product, most bakers do not have an adequate knowledge to manufacture bread in compliance with the laid down requirements. Hence, the aim of this study is to develop a relationship between regulatory requirements and manufacturing techniques. In order to study this relationship a 12 kg of cleaned wheat flour, moisture and gluten of which contents were predetermined, was taken and subjected for the study. Four samples of wheat flour, weight of each was 200g, were taken and incorporated with 1.5 g salt, 1.5 g fat, 0.75 g sugar and calculated amount of water to get moisture content of the dough at 55%. Each of four samples was incorporated with 0.2%, 0.6%, 0.8% and 1.0% instant dry yeast, respectively and allowed to be fermented. Volume increased by leavening action was measured by leavening index and well-fermented samples were subjected for baking process. Same procedure was adopted to dough at 56%, 57.5% and 60% moisture levels too and all samples were replicated 3 times. Data were collected from each treatment pertaining to the leavening index, leavening time, pH value, bulk density and moisture content of baked bread.

Results revealed that the best moisture content and desirable amount of leavening agent in preparation of dough were 57.5% and 1.0%, respectively. As pH value and moisture content, two of most important regulatory requirements of baked bread remained in between 5.3– 6.0 and within the limit of 40%, respectively. This treatment has also shown optimum leavening time to be 2¹/₂ h and optimum bulk density of baked bread to be 0.12 g cm⁻³.