STANDARDISATION OF GRATING SURFACE OF CASSAVA GRATERS FOR GARI PROCESSING

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ABSTRACT

Cassava is grated and processed into gari, which is a popular food in West Africa. Several modifications have been made on cassava graters to improve efficiency. However, there is no standard in the making of the grating surface teeth of graters. The aim of this study was to standardize the design of cassava grating surface for gari processing. Standardizing grating surface will improve processing efficiency, ensure uniformity and interchangeability. Several studies have indicated that cassava grating is usually done more than once to attain the desired particle size of mash. This is primarily due to lack of standard grating surfaces as a result of high variation in tooth diameter and inter-tooth spacing. 100 tooth diameters and 100 inter-tooth spacings were randomly measured from 16 grating sites and analyzed. The study results indicated wider range of existing inter-tooth spacing of minimum of 4 mm, maximum of 12.5 mm, mean tooth diameter of 3.3±0.6 mm and mean inter-tooth spacing of 7.4±1.8 mm. From the analysis, three grating surfaces were designed and evaluated using varied tooth diameters and inter-tooth spacing and the best design was selected based on manufacturers and consumers preference. The following conclusions were made after selecting the best design - tooth diameter less than 2.97 mm is likely to produce a very fine mash which is difficult to make into gari. Tooth diameter greater than 3.05 mm is likely to produce coarse grates and relatively large particle sizes of gari that is undesirable. Tooth diameter of 3.0±0.04 mm produced the desired particle size of gari of 1.5 mm and inter-tooth spacing of 8.05±0.08 mm is acceptable. Random pattern of grating surface teeth at an angle of 45° is preferred as it ensures effective contact between the cassava and the grating surface.

Keywords: Cassava grating, gari processing, tooth diameter, inter-tooth spacing, particle size.

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