DETERMINING STORAGE STABILITY OF HARD DOUGH BISCUIT POWDER

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In biscuit production, non-conforming products are generated due to minor deviations from standard quality parameters. Those waste volumes are ground to powder which is currently used as ingredients in new manufacturing cycles in biscuit industry. The quality assurance of biscuit powder during the storage is vital. Hence this study was conducted to determine the storage stability of hard dough biscuits powder (HDBP). HDBP was stored for 5 weeks and at the end of each week a soft dough biscuit (B1, B2, B3, B4, B5 respectively) was prepared using the stored HDBP. Control product (C) was prepared using freshly grounded HDBP. They were stored under accelerated conditions (40°C and 90% relative humidity) for 7 weeks to determine the shelf life. Data were analyzed as a two-factor factorial complete randomized design for physicochemical properties (moisture, pH, free fatty acids (FFA), peroxide value (PV) and p-Anisidine) and microorganisms (total plate count (TPC), yeast and mold and *Escherichia coli*counts). Sensory properties were analyzed by Friedman test. Sensory properties of B1, B2, B3 did not show any significant differences ($p>0.05$) under accelerated conditions for 5 weeks compared to C. Moisture, FFA, PV and p-Anisidine were significantly ($p>0.05$) higher in B3 stored under accelerated conditions for 7 weeks (4.40% ± 0.02, 0.20% ± 0.03, 0.71meq O_2/kg ± 0.18 and 1.90AnV ± 0.14 respectively), compared to B3 (1.74% ± 0.09, 0.16% ± 0.01, 0.12meq O_2/kg ± 0.02 and 1.25AnV ± 0.35 respectively) and the pH significantly ($p>0.05$) decreased in B3 stored under accelerated conditions for 7 weeks (7.31 ± 0.05) compared to B3 (7.74 ± 0.01). TPC (max.10 CFU/g), yeast (<10 CFU/g) and mold (<10 CFU/g) and *Escherichia coli* (not detected) counts were with the acceptable range of standards for biscuits. In conclusion, biscuits powder stored up to 3 weeks having desired physicochemical, microbiological and sensory properties could be used as an ingredient of biscuits manufacturing process.

Keywords: Physiochemical properties, Sensory Properties, Soft-dough biscuits