Evaluation of different Packaging Material for Storage of Indian Horse Chestnut Flour

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Abstract—*Indian horse chestnut found in the Himalayan region is being used in pharmaceutical formulations. Although this nut is rich in starch and antioxidants, but they are non edible due to high saponins content. For preparation of flour, whole nuts were crushed into a grated mass in a mechanical grater after removing the rind. The grated mass was pretreated by blanching for 10 min + followed by soaking for 32 days at room temperature for the maximum removal of saponins. Treated grated mass was dried in mechanical cabinet drier at 60 ± 2^oC. Dried grated mass was ground into flour by dry mill and packed in four different packaging material like aluminium laminated pouch, glass jar, HDPE jar, polyethylene pouch and stored for 6 months under ambient ($18\text{-}25^oC$) and refrigerated ($4\text{-}7^oC$) storage conditions. Although slight changes in quality characteristics of Indian horse chest nut flour during storage were observed but the flour packed in aluminium laminated pouch and stored under refrigerated conditions retained highest values for physico-chemical characteristics like Total solids (93.50%), crude fibre (2.56%), total proteins (102.23 mg/100g), starch (63.78%) total sugars (3.72%), oil (2.07%), oil absorption capacity (1.53 ml/g), water absorption capacity (4.35 ml/g) and sensory characteristics viz. colour (7.50), texture (6.80), taste (7.20) and overall acceptability (7.10) of flour. Aluminium laminated pouch also showed lowest increase in physico-chemical characteristics like moisture content (6.49%), water activity (0.149) and reducing sugars (1.73%) among all packaging material under refrigerated conditions of storage.*

Keywords: *Mechanical cabinet drier, packaging material, aluminium laminated pouch, refrigerated conditions, Indian horse chestnut flour.*