

Utilization of Jackfruit Seed Flour (*Artocarpus heterophyllus* L.) as a Thickening Agent in Tomato Sauce Production

C.S.D.S. Maduwage, R.A.M.A.T. Rajakaruna, W.A.J.P. Wijesinghe and P.W. Jeewanthi

Department of Export Agriculture, Uva Wellassa University, Badulla, Sri Lanka

Even though Jackfruit seeds are a good source of starch, they are still underutilized. This study investigated the potential of using of Jackfruit Seed Flour (JSF) as a thickening agent in tomato sauce production. Lye peeled mature jackfruit seeds were used to obtain flour. Proximate analysis and functional behavior of the JSF were compared with corn flour. Tomato sauce samples were prepared according to the Sri Lankan Standard specification for tomato sauce (SLS 260:1989). Three batches of tomato sauce were prepared by adding JSF, corn flour and without any thickening agent separately. Thickening agents were added at 3.75g/100g of tomato pulp. Sensory evaluation and microbial analysis were conducted to determine the acceptability of the sauce samples. Sauce samples were analyzed for physicochemical properties during 8 weeks of storage at ambient temperature. JSF contained 69.96±0.31% carbohydrate, 13.40±0.09% crude protein, 8.53±0.19% moisture, 2.93±0.15% crude fiber, 2.77±0.05% fat and 2.39±0.37% total ash. JSF had 0.80 g cm⁻³ bulk density, 2.5 ml g⁻¹ oil absorption capacity, 1.4 ml g⁻¹ water absorption capacity, 3.5 ml g⁻¹ emulsifying capacity and 5% gelation capacity. Swelling power was increased with the temperature. JSF incorporated tomato sauce received the highest scores in the sensory assessment. Microbial counts were less than standard maximum limits. Total soluble solids, titratable acidity were not significantly changed ($p > 0.05$) while pH, water activity significantly increased ($p < 0.05$) during storage period in JSF added tomato sauce. JSF showed the role of a thickening agent in tomato sauce with lowest serum separation and highest viscosity. This study concludes that JSF can be successfully used as a thickening agent in the tomato sauce industry.

Keywords: Jackfruit seed flour, Thickening agent, Tomato sauce

Acknowledgement: Authors are grateful for the financial support provided by Uva Wellassa University under UWU Research Grants (Grant No: UWU/RG/2018/017).