

## Development of Novel and Functional Sauce from Beetroot (*Beta vulgaris L.*)

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Plant based products have attracted enormous attention due to their diverse range of biological and therapeutic properties. Beetroot is one of the root vegetable which is rich in antioxidants among other vegetables. Betalain is the natural pigment attributable to the purplish color to beetroot. Therefore, the objective of this study was to develop a novel functional sauce from beetroot. Proximate analysis, physico-chemical analysis, shelf life stability, quantification of betalain and sensory evaluation were carried out. Initially different compositions of sauces were prepared by changing sugar concentration range from 10% to 18.5% and bird chili concentration range from 8% to 16.5%. The most acceptable composition of sauce was screened from sensory evaluation results. Final product contains 72.06% ± 1.68 moisture, 3.03% ± 0.32 ash, 2.83% ± 0.21 protein, 1.34% ± 0.05 fiber, and 0.02 g ± 0.00 fat, 85.33 mmol/L ± 3.05 Calcium, 80.46 mmol/L ± 2.05 Potassium and 409.53 mmol/L ± 5.31 Sodium content with the pH of 4.17 and 48° Brix value. There was no any growth of yeast, mold and bacteria up to one month of shelf life in dark glass bottle at refrigeration temperature (7 °C) without artificial preservatives. The betalain content in the developed beetroot sauce was evaluated by extraction of the betalain in the varying percentages of the aqueous concentrations of sauce was resulted as 0.275 mg/100 g ± 0.001 in 12.5% extraction, 1.166 mg/100 g ± 0.015 in 25% extraction and 4.196 mg/ 100 g ± 0.034 in 50% extraction respectively. The results showed that development of a sauce from beetroot is an effective way of delivering the health benefits to the potential consumers.

**Keywords:** Beetroot, Betalain, Functional sauce, Proximate composition