

Production of Green Banana Powder Sauce from *Ambul* and *Puwalu* Varieties and Evaluate their Physicochemical, Antioxidant Properties and Shelf Life

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The goal of this research was to make green banana sauce from *Ambul* and *Puwalu* banana varieties harvested in *Kilinochchi*, Sri Lanka, and to evaluate their antioxidant properties (total phenolic content (TPC), total flavonoid content (TFC), and antioxidant capacity), proximate composition and shelf life. The green banana powder was prepared from the peeled off fresh green banana, and then the sauce was developed according to SLS modification made to the SLS 581:2008. After several preliminary trials, the best four sauce formulations with control sauce were selected. The green chili sauce was prepared as the control sauce, and the green chili paste was added as a coloring agent for green banana sauce due to the color resemblance with green chili sauce. The 15 g of *Ambul* green banana powder sauce demonstrated the highest sensorial features followed by 10 g *Puwalu* sauce; 250 g sauce was made from this powder formulation. Overall, the proximate composition of the selected two sauces was higher than the control sauce on a fresh weight basis. Among, the crude protein (4.37-5.03%), crude fiber (24.34-23.35%) and ash content (2.2-2.64%) were significantly ($p < 0.05$) higher than the control sauce (Crude protein-1.24%, crude fiber-6.75% and ash – 1.27%). Extraction was carried out with 70% (v/v) ethanol to determine the antioxidant properties. The TPC (0.09 mg of Gallic acid equivalent/ g dry matter) and antioxidant capacity (0.115 mg of Catechin equivalent/ g dry matter,) were high in the *Puwalu* sauce than *Ambul* sauce (TPC- 0.057 mg of Gallic acid equivalent/ g dry matter, and antioxidant capacity- 0.113 mg of Catechin equivalent/g dry matter,). However, the TFC was significantly ($p < 0.05$) higher in the *Ambul* sauce (0.152 mg of Ascorbic acid equivalent/g dry matter) than *Puwalu* sauce (0.101 mg of Ascorbic acid equivalent/g dry matter). For shelf-life analysis, after one and two months of storage, both sauce samples reported total plate count was lesser than 10 (2-2.5), when compared with the control sauce, the count was 3.2-3.3. As a result, *Ambul* and *Puwalu* green banana varieties could be used to make the sauce with profound health benefits.

Keywords – *Ambul* and *Puwalu* banana, antioxidant properties, green banana powder, sauce

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