

JCSH-018

Exploring the Potential of Java Plum (Duhat) (*Syzygium cumini*) as a Fruit Syrup and Natural Sweetener

Leanne L. Lee, Juma Novie A. Alviola,
Dann Marie N. Del Mundo, and Jackie Lou J. Tagubase*

University of the Philippines Mindanao

*Correspondence

Department of Food Science and Chemistry,
College of Science and Mathematics,
University of the Philippines Mindanao,
Mintal, Davao City 8022
Email: jjtagubase@up.edu.ph

Keywords

functional food, natural sweetener, fruit syrup, proximate composition, consumer acceptability

Abstract

This study primarily aimed to develop a fruit-based sweetener for health-conscious individuals using Java plum or duhat (*Syzygium cumini*), an underutilized local fruit in the Philippines rich in phytochemicals and antioxidants. Four syrup formulations with varied fruit pulp blends (A-35%, B-45%, C-55%, and D-65%) were prepared and subjected to a Preference Ranking test. Based on the panel's preference for higher fruit content and low added sugar, Formulation C underwent further characterization: physicochemical, proximate, antioxidant properties, and consumer acceptability. It exhibited 55.60° Brix total soluble solids, a pH of 4.88, a viscosity of 1,730 mPa-s, and a solubility time of 18.40 s. The syrup's color profile featured a slightly dull dark hue with a reddish undertone and a yellowish tint ($L^*=29.31$, $a^*=14.69$, $b^*=5.39$, $H=20.15$, $C=15.64$). Its proximate composition included 58.38% moisture, 0.45% crude ash, 0.04% crude fat, 1.77% crude fiber, 0.40% crude protein, and 38.97% total carbohydrates, with 19.93% glucose and 41.40% total sugars. Additionally, the syrup demonstrated high antioxidant properties, with 81.41 mg GAE/g total phenolics and 2.79 $\mu\text{g/mL}$ DPPH scavenging activity. In Consumer Acceptability ($n=80$), Formulation C received positive ratings: "like very much" for appearance, "like slightly" for aroma, and "like moderately" for taste, texture/mouthfeel, and overall acceptability. Overall, this study successfully utilized duhat fruit to create an alternative sweetener in syrup form with promising health benefits. Further research is recommended to optimize its sensory attributes while enhancing its nutritional profile and functional properties.