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**Biochemical and microbial analysis of synsepalum dulcificum (jamaican miracle fruit)****Paul Gyles***Northern Caribbean University, Jamaica*

Miracle Fruit (*Synsepalum dulcificum*) has been studied because of its unique taste modifying properties. This study involves investigating the biochemical properties of the Jamaica miracle fruit to determine its nutritional and medicinal effects. The proximate composition showed that the Jamaican miracle fruit pulp contained 6% protein, 8.7% carbohydrate, 12% fat, 80.5% fiber, and 39.1% ash. The seed contained 2% protein and 10% fat. The result of the mineral analysis showed that the Jamaican miracle fruit seed contained 3.4ppm sodium, 5.6ppm potassium, 1.5ppm calcium and 10.5ppm zinc. The leaf had 7.6ppm sodium, 5.0ppm potassium, 1.9ppm calcium and 15ppm zinc. Dry pulp contained 3.4ppm sodium, 8.7ppm potassium, 1.2ppm calcium and 13.8ppm zinc. The wet pulp showed 2ppm sodium, 3.7ppm potassium, 0.7ppm calcium and 2.7ppm zinc. The result of phytochemical screening of extracts of the Jamaican miracle fruit and leaf showed the presence of tannins, cardiac glycosides, reducing sugars, saponins, flavonoids, terpenoids and phenols. The fruit showed relatively large amounts of cardiac glycosides, reducing sugars, flavonoids and terpenoids, moderate levels of tannins and phenols, but lower levels of saponins. Phytochemicals may be responsible for different activities such as antioxidant and antimicrobial. Microbial testing of the extracts demonstrated that the extracts had some effect on test microbes at concentrations of 40mg/ml, 60mg/ml and 80mg/ml. Zones of inhibition were seen at the mentioned concentrations. This could be as a result of phytochemicals present in the fruit. The high antioxidant and flavonoid content of the Jamaican miracle fruit suggest that the berry may be useful in the medicinal and food industries. Based upon microbiological studies the miracle fruit may be used as an antibiotic in the treatment of diseases caused by the organisms studied.

**Biography**

Paul Gyles, born in Jamaica, earned his Bachelor in Medical Technology from Howard University before going on to earn a Master's degree in Applied Microbiology and later Ph. D in Molecular Cell Biology and Endocrinology. Following his education, he joined the faculty of the Northern Caribbean University in 1996 where he would become an associate professor and chair for the departments of biology, chemistry, and medical technology. By 2003, he had been appointed dean for the College of Natural and Applied Sciences at the university. In 2009 Gyles - with the help of Patrice Williams-Gordon and Julieth Bailey-Penrod - presented their seminal research on the effect of Garlic and Jamaican Sorrel on cancer cells. What they found was that these accessible, mundane foods have the ability to help treat cancer. In addition to this, Dr. Gyles also co-wrote a research paper with Alston Miller concerning water pollution in Jamaica and how it relates to illnesses experienced by the population that was published in the International Environmental Earth Sciences Journal.