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An investigation of the hypoglycemic effect of the aqueous extract of the fruits of *Psidium guajava*, *Averrhoa bilimbi* and the peel of *Tamarindus indica* in normoglycemic guinea pigs

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Diabetes is a common endocrine disorder worldwide. Selected plants are a potential complementary source of hypoglycemic drugs to combat diabetes, in addition to the use of synthetic drugs: insulin, metformin etc. This research focused on the hypoglycemic effect of the aqueous extract of the fruits of *Psidium guajava*, *Averrhoa bilimbi* and the peel of *Tamarindus indica* on normoglycemic guinea pigs. The guinea pigs were divided into three groups of three: control group, aqueous fruit extract treatment group at a dose of 6 ml/kg and glibenclamide treatment group (with the dose 2.5 mg/kg). Guinea pigs received treatment twice daily for 12 days for each fruit and peel. Blood glucose and body weight were measured before treatment and between three days interval. Additionally, each plant extract at the dose of 6ml/kg was orally administered for glucose tolerance test for 120 minutes study in comparison to glibenclamide at the dose of 2.5 mg/kg. Administration of extracts of *Psidium guajava*, *Tamarindus indica* and *Averrhoa bilimbi* resulted in a marked hypoglycemic (reduction) activity in blood glucose levels when compared to the control and

Glibenclamide treated group on the 12th day: *Psidium guajava* (90 ± 3.0 to 75.7 ± 3.5 mg/dL), *Tamarindus indica* (89.0 ± 5.6 to 70.7 ± 2.1 mg/dL) and *Averrhoa bilimbi* (110.0 ± 9.2 to 86.7 ± 10.0 mg/dL). Glibenclamide also resulted in a reduction (88.0 ± 2.0 to 67.3 ± 3.5 mg/dL) as compared to the control. This research marked the continuation of the use of plant extracts in Guyana as a possible herbal treatment for diabetes mellitus.

Speaker Biography

Raymond Compton Jagessar obtained his BSc (Distinction) in Chemistry/Biology from the University of Guyana (1992) and PhD from the UK (1995). He held three Post Doctoral Research Fellowships (PDF) at the University of South Carolina (USA), Wichita State University (USA) and the University of the West Indies during the period, 1996-1999. He has also won several international awards, amongst them are Chartered Chemist, CChem and Fellow of the Royal Society of Chemistry, FRSC, UK, Research Grants etc. His research interests are broad, covering the spectrum of Pure and Applied Chemistry, Chemical Biology, Pharmaceutical and Medicinal Chemistry. He has published over seventy (75) research articles, five book chapters and presented at several international conferences, locally and internationally. He is currently Professor in Chemistry at the University of Guyana (South America) and Part-Time Lecturer in the Department of Pharmacy, Faculty of Health Sciences.

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