

Phenolics (bound and free) in edible cassava (*Manihot esculenta* Crantz) leaves harvested at different time affected by *in vitro* gastrointestinal digestion and their antidiabetic (α -amylase and α -glucosidase) and anti-obesity (lipase) inhibitory activities

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Edible cassava leaves (*Manihot esculenta*) were consumed as vegetable for their bioactive compounds, however the effect of harvesting time on these bioactive compounds and their antidiabetic and anti-obesity inhibitory activities were scarcely reported in the literature. Phenolics from edible leaves harvested at different time were assessed using HPLC-DAD, and their antidiabetic and anti-obesity inhibitory activities were investigated before and after *in vitro* gastrointestinal digestion. The results showed significant ($P < 0.05$) effect of harvesting time on phenolic contents. Bound phenolics showed higher lipase inhibitory activity than their free fractions. However, phenolic contents decreased after *in vitro* digestion, while they showed high antidiabetic and anti-obesity inhibitory activities. The present study demonstrated that edible leaves harvested at different times are rich in flavonoids, stilbenes, tannins and saponins. These bioactive compounds are highly potent against α -amylase, α -glucosidase and lipase before and after *in vitro* gastrointestinal digestion. Therefore, we recommend edible cassava leaves for important biological active compounds for the prevention of obesity and type 2 diabetes.

Keywords: Bound phenolic, *in vitro* gastrointestinal digestion, antidiabetic, *Manihot esculenta*, harvest time, type 2 diabetes.

Biography

Dr. Alphonse Laya, has done Ph.D in Biochemistry at the University of Maroua, Cameroon. He is a postgraduate fellow at CSIR-CFTRI, India and postdoctoral fellow at Federal University of Sao Paulo, Brazil. He Published 15 articles in reputed journals.

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