

Studies on the Effect of Processing Methods on the Antihyperglycemic activity of Herbal Teas from Leaves of *Vernonia amygdalina* Del

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ABSTRACT

The leaves of *Vernonia amygdalina* Del (Asteraceae) was processed into herbal tea using the black and green tea processing techniques. The green tea obtained was used as such while a portion of the black tea was flavored with *O. basilicum* or *O. gratissimum*. Methanol extracts of the flavored and unflavored herbal teas, obtained by cold maceration, were subjected to pharmacological studies for antihyperglycemic activity in alloxan diabetic rats and phytochemical analysis. Results showed that single oral administration of the tea extracts reduced blood glucose level of diabetic rats to varying the extents. Extract of green tea (GTE) caused a moderate reduction in blood glucose levels while black tea (BTE) evoked a mild dose-related effect. Extracts of the flavored tea caused significant ($P < 0.05$) reductions in blood glucose levels. While the effect of extract of *O. basilicum* flavored tea (BTOBE) was dose-related, that of *O. gratissimum* flavored tea (BTOGE) was non-dose-related. A comparison of the magnitude of reduction in blood glucose level showed the order of potency: BTOBE > BTOGE > GTE > BTE. Phytochemical analysis showed relative presence of alkaloids, saponins, tannins, flavonoids, steroids and terpenoids with GTE having the highest concentration of these constituents. These findings suggest that black tea technique may be preferred for processing leaves of *V. amygdalina* into herbal tea since it preserved the antihyperglycemic activity. Green tea method may reduce the antihyperglycemic effect even though it preserves the phytochemical constituents better than black tea technique. Flavoring of black tea with *Ocimum* spp enhances the antihyperglycemic effect due to their inherent hypoglycemic activity.

KEYWORDS

Antihyperglycemic . Black tea . Green tea . Herbal tea . *Ocimum* spp . *Vernonia amygdalina*

REFERENCES