

Antidiarrhoeal Activity of the Ethanolic Extract of Unripe Fruit of *Limonia acidissima* L. (Thee-Thee)

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ABSTRACT

The purpose of the present study was to evaluate scientifically the antidiarrhoeal effect of unripe fruit of *Limonia acidissima* L. by using castor oil induced diarrhoeal model in mice. The unripe fruit of *Limonia acidissima* L. was extracted with 95% ethanol to obtain the ethanolic extract. The antidiarrhoeal activity of the ethanolic extract was investigated by using castor oil induced diarrhoea model in albino mice and determined by two in vivo studies, measuring frequency of diarrhoea and percent of small intestinal transit. In this study, compared with control, the ethanolic the extract 480 mg/kg has significantly reduced in frequencies of diarrhoea at 3 hour after castor oil administration, $p < 0.05$ and also reduced in mean frequencies of diarrhoea within 4 hours, $p < 0.01$. It had also reduced in percent intestinal transit (ie, antimotility action) when compared with control, $p < 0.05$. It was observed that the ethanolic extract 480 mg/kg was as nearly effective as loperamide, in reduced in frequencies of diarrhoea at 3 hour after castor oil and mean frequencies of diarrhoea within 4 hours after castor oil and there was statistically no significantly difference ($p = 1.000$ and 0.968 respectively). Similarly, it was also as nearly effective as loperamide in antimotility action ($p = 0.931$). The phytochemical analysis of the ethanolic extract of unripe fruit of *Limonia acidissima* L. showed it have contains tannins, alkaloids, carbohydrates, glycosides, phenols, starch, steroids and cardiac glycosides. These constituents may mediate the antidiarrhoeal property of the ethanolic extract of unripe fruit of *Limonia acidissima* L. The results of this study supported that the ethanolic extract of unripe fruit of *Limonia acidissima* L. (Thee-Thee) has potential antidiarrhoeal effect and therefore it is possible to be used as home remedy for symptomatic relief of diarrhoea especially in rural areas where currently used antidiarrhoeal drugs such as loperamide and diphenoxylate are not easily available.