

RESEARCH PAPER

# Comparative efficacy of plant parts of *Aegle marmelos* in the treatment of diarrhoea in goats

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Accepted : September, 2008

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## ABSTRACT

The study deals with the efficacy of plant part of *Aegle marmelos* (Bel.) against diarrhoea in goats of Kanpur region. The leaves juice with combination of powdered seeds of *Aegle marmelos* was more effective than juice of leaves, flower and powdered seeds. Efficacy of leaves juice, flower juice and powdered seeds were recorded 94.7%, 79.7% and 89.4%, respectively, but the combination of leaves juice and powdered seeds of *Aegle marmelos* was 100% effective against commonly occurring diarrhoea in goats.

**Key words :** *Aegle marmelos*, Diarrhoea, Goats.

Diarrhoea is one of the most important and commonly observed health disorders in goats resulting in heavy mortality. Reasons of diarrhoea are manifold including endoparasites and non-parasitic agents. The net effect of diarrhoea is fluid and electrolyte imbalance resulting into dehydration and acid-base disturbances. To control diarrhoea in goats through *Aegle marmelos* is the cheapest way for villagers free from any side effect. *Aegle marmelos* belonging to Rutaceae family is grown throughout the country. It is commonly known as Bengal quince or Bel. Traditionally the plants are attributed to possess anthelmintic property in anti-diarrhoeic and curing dysentery. Hence, the present study was carried out to evaluate the efficacy of parts of *Aegle marmelos* plant against diarrhoea in goats.

## MATERIALS AND METHODS

In the present study, ten diarrhoeic goats aged above 1 to 2 years were selected and faecal samples were collected directly from the rectum of each goat in vessels for screening of parasitic infection using Mc Master egg counting technique (Kelly, 1974). Goats were selected further for trial based on the faecal egg count per gram (EPG) of faeces and randomly divided into five groups A, B, C, D and E of 2 goats each. Group A goats were given Fenbendazole (7.5mg/kg body weight) through oral route and group B, C and D goats were given leaves juice (15ml b.i.d.), flower juice (15ml b.i.d.) and powdered seed (1-4g b.i.d.) of *Aegle marmelos*, respectively. Goats of group-E received combination of leaves juice and powdered seeds (15ml. b.i.d. and 1-4g b.i.d.) of *Aegle marmelos*. On zero to 14 days post treatment, faecal

samples were again collected and examined with the same methods stated above. Efficacy of plant parts was calculated using the formula described by Wirthlerle *et al.* (2004) :

$$\text{FECR (\%)} = (\text{FEC}_{\text{bt}} - \text{FEC}_{\text{at}}) \times 100 / \text{FEC}_{\text{bt}}$$

where, FECR (%) denotes per cent faecal egg count reduction. FEC<sub>bt</sub> and FEC<sub>at</sub>, stand for egg count before and after treatment, respectively.

## RESULTS AND DISCUSSION

Three times examination of the individual faecal samples of selected goats on 14 days treatment revealed 100% reduction in faecal egg count in treatment group A indicating 100% efficacy of the Fenbendazole (Table 1). It acted by inhibiting the fumerate reductase enzyme of the parasite as already observed (Brander *et al.*, 1991). Table 1 also revealed that the faecal egg count reduction FECR (%) of group B, C and D were 94.7, 79.7 and 89.4 per cent, respectively. Hence, the efficacy of leaves juice, flower juice and powdered seeds were recorded 94.7%, 79.7% and 89.4 per cent, respectively. FECR (%) of group E was observed 100 per cent indicating 100% efficacy of the combination of leaves juice and powdered seeds of *Aegle marmelos*.

The present study proves that *Aegle marmelos* has the most effective anthelmintic properties to cure the diarrhoea.

## Acknowledgement:

The authors are thankful to Head of Department of