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The anthelmintic efficacy of some indigenous plants in the Northwest province of Cameroon

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Summary

Experiments were conducted in nine groups of eight calves to determine the anthelmintic efficacy of four indigenous plants; namely, *Terminalia glaucescens*, *Vernonia amygladina*, *Solarium aculeastrum*, and *Khaya anthotheca*. Calf fecal samples were collected at days 0, 7, 14, 21, 28, 35, and 42 for fecal egg counts by the McMaster slide technique. Results showed that *Solarium aculeastrum*, *Khaya anthotheca* and *Verbonia amygladina* were efficacious with fecal egg Count reductions of 34.4, 55.8, and 52.4%, respectively, at full doses at day 21 posttreatment

Key words

Cattle - Calf - *Terminalia glaucescens* - *Vernonia amygladina* - *Solarium aculeastrum* - *Khaya anthotheca* - Anthelmintics - Efficiency - Cameroon.

INTRODUCTION

Cattle production in the Northwest province of Cameroon is carried out mainly by Fulani herders who have evolved from anomic to a semi-nomadic or transhumant cattle production system. In order to cope with the cattle disease situation the Fulani herders have adopted strategies or selected management practices, often designed to protect animal health.

The Fulani herders are deeply involved in ethnoveterinary practices, which were introduced in Cameroon at the end of the last Century by nomadic Fulani pastoralists, from neighboring Nigeria and Chad, in search of new pastures (10). The high cost and scarcity of commercial veterinary drugs in Cameroon as in many other developing countries (4, 6) have aroused an interest in traditional veterinary remedies as alternatives to expensive commercial drugs. Another reason could be the unpredictable value of commercial anthelmintics sold in some parts of Africa (8) and the fact that anthelmintic plants are sustainable and environmentally acceptable (2).

Herders are generally very knowledgeable about a lot of plants for the most common diseases and ailments affecting their livestock, like gastrointestinal parasitism in cattle. Even though Fulani pastoralists have used ethnoveterinary remedies for a very long time and they strongly believe in their efficacy, there is hardly any scientific evidence to confirm such allegation. Hence, studies have been carried out not only to scientifically determine their efficacy (3,5,9) and their toxicity, but also to standardize the dosage (10).

This work was conducted to determine the anthelmintic properties of four indigenous plants that were commonly used by the cattle farmers of the province. The efficacy of each plant preparation was compared to that of a commonly used orthodox injectable anthelmintic: levaject 100 (levamisole). The plants studied were:

Bawshihi (*Terminalia glaucescens*)-
Suwaaka (*Vernonia amygdalina*)
Gitte-nai (*Solanum aculeastrum*)
Kahi (*Khaya anthotheca*)

MATERIALS AND METHODS

Plant materials

Preparation of herbal medicines

Decoction

The plant parts were boiled in water for 15-20 min from the time the water started boiling. Ideally, plant materials were decocted twice in order to extract their active ingredients thoroughly. This was filtered after allowing to cool down.

Infusion

Hot or cold water was poured into the fresh or dry plant material and allowed to stand. The preparation was covered tightly to prevent losing important ingredients. The length of time needed to prepare an infusion depended on the type of plant material and whether the water was hot or cold. In general, a hot infusion was allowed to stand for 5-15 min while a cold infusion might require up to 24 h. The preparation was filtered before administering to the infected animal.

Preparation of experimental plants

Terminalia glaucescens (Bawshihi)

For the treatment of one calf, 200 g of the freshly harvested and washed bark of Bawshihi was added to 10 g of burnt and powdered limestone and boiled for 30 min in 1.5 l of water until the liquid turned dark brown. The resultant decoction was allowed to cool, was then sieved and ready for use as an anthelmintic drench. Two dosages- 0,25 l (half dose) and 0,5 l (full dose) - were administered per calf for each treatment group. The calves were drenched once every morning for three consecutive days.

Vernonia amygladina (Suwaaka)

For the treatment of one calf 1,40 g of freshly harvested and washed leaves of Suwaaka were macerated and soaked in 1 l of cool water. This infusion was then filtered through a sieve. Ten Grams of burnt and powdered limestone were added to the infusion and used as a drench. Two dosages of 0,25 l and 0,5 l per calf were administered in the treatment groups only once as half and full doses, respectively.

Solarium aculeastrum (Gitte-nai)

For each calf 340 g of fresh roots of Gitte-nai were harvested, washed and boiled for one hour with 10g of limestone in 1.5 l of water. The resultant decoction was cooled and the filtrate used as an anthelmintic drench. Two dosages- 0.25 l (half dose) and 0.5 l (full dose)-were administered per calf for the respective Treatment groups for two consecutive days.

Khaya anthotheca (Kahi)

For each calf 340 g of the freshly harvested and washed bark of Kahi were boiled with 4 g of limestone in one liter of water. The resultant concoction was cooled and filtered through a sieve and the filtrate used as a drench. Two dosages- 0,25 l (half dose) and 0.5 l (full dose)-were administered per calf for each treatment group once every morning for two consecutive days.

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