



Herbal de-worming for lower goat mortality in India

Source	South Asia Pro Poor Livestock Policy Program (SAPPLPP)
Keywords	Parasitic worms, herbicides, goat
Country of first practice	India
ID and publishing year	7690 and 2012
Sustainable Development Goals	No poverty and life on land

Summary

This practice describes how the usage of herbal de-worming can help to reduce goat mortality. In doing so it highlights the benefits of traditional and natural methods that are based on local expertise and often have similar or better effects than chemical inputs while reducing the impact on the environment.

Description

1. An action research study by BAIF Development Research Foundation (Dharwad, Karnataka)

In BAIF's programme area in the Dharwad district of Karnataka, high mortality among goat kids in the rainy season was reported as a major constraint by goat rearers. Following discussions with goat rearers in three villages' of the district (Nigadi, Devarhuballi and Benkaikatti) the high mortality was attributed to nematode infestations in both pregnant does and their kids.

Members of the Kuruba community, a traditional pastoral community in the area, were reported to use a locally available herb for regular deworming of their livestock. In collaboration with goat rearers, BAIF's research team conducted trials to study the comparative efficacy of this herb with a commercial de-wormer Fenbenzadole.

The herb, *Mucuna Pruriens* commonly known as velvet bean or cowitch, is called Nasugunni in Kannada. The trichomes (hair)

from the pods of this plant are used. *Mucuna Pruriens* is a tropical legume commonly found growing wild along roads, in forest areas and on private lands. The pods occur in bunches and four to five bunches suffice to meet the requirements of a small herd of 15 to 20 goats.

BAIF staff, together with the goat rearers in the area, decided the dose of herb to be administered to pregnant does: 20 mg per kg of body weight. It was decided to conduct trials consecutively in two years, 2000 and 2001. Since mortality rates are higher for kids of does that have a heavy worm burden, it was decided to administer the de-wormers to does in late pregnancy and on the day of kidding.

1.1 The first trial, year 2000

- Units: 21 farmers participated
- Carrying out of the trial: only the chemical de-wormer Fenbendazole was administered to 34 does, 15 to 30 days before kidding, while an additional 34 does formed a control group and were not administered any treatment.
- Results: these trials revealed that the mortality of kids, observed over a period of two months, remained as high as 18 percent in the control (un-treated) group and reduced to just 8 percent in case of kids born to does who had been administered the

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chemical de-wormer. The growth rate of the kids born to these does was also observed to be higher.

1.2 The second trial, year 2001

- Units: 18 farmers participated, the combined flock
- Carrying out of the trial: the combined flock of the farmers was divided into three groups of 26 does each. Two of these groups were administered Fenbendazole and Mucuna Pruriens respectively while the third group formed the control group and was not given any treatment.
- Results: unlike the first trial the mortality of kids was observed and recorded over a period of four months. Additionally, goat droppings from 21 pregnant does were collected, prior to and seven days after the treatment, to test the parasitic burden. The parasitological faecal egg count, for the two groups who received the treatment, had reduced significantly on the seventh day of de-worming while the parasitic burden of the control group had increased.

2. Conclusions

The data of the second trial revealed that the herbal anti-helminthic was as effective a de-wormer as its chemical substitute. For example, the birth weight and the weight gain from birth to four weeks of age were higher in case of the treated groups as compared to the control group. Kid mortality from birth to 4 month of age was 40 percent in case of the control

group and 16 and 20 percent in case of the groups administered Mucuna Pruriens and Fenbendazole respectively.

Figure 1. Pods of the Mucuna Pruriens plant



Additionally, the trials revealed that the does in the treatment groups had a shorter kidding interval as compared to the control group.

The study and subsequent discussions with goat rearers revealed that goat keepers preferred the herbal treatment over the chemical treatment using Fenbendazole primarily on account of easy availability of the Mucuna Pruriens pods in the surrounding areas; cost effectiveness

Table 1. Parasite egg count (N°/gm) in the faeces of research trial does

Treatment	Number of samples	Parasite egg count before treatment	Parasite egg count after treatment
Un-treated (Control Group)	6	717	983
Mucuna Pruriens	7	971	271
Fenbendazole	7	757	114

Source: SAPPLPP 2012



since the pods could be easily collected as compared to Fenbendazole which needed to be purchased, and the results of the trials that demonstrated that *Mucuna Pruriens* was as effective as the chemical de-wormer.

Being a collaborative research study done in close consultation with goat rearers, it proved effective in sensitizing livestock rearers on the effective use of a locally available herb. A large number of goat rearers, in addition to those who participated in the trial adopted the technology. In areas where *Mucuna Pruriens* was not easily available, goat rearers took to administering Fenbendazole, which is indicative of farmers' preparedness to undertake de-worming on their own.

3. Further reading

- Promotion of ethno-veterinary practices for small ruminants. An action research study BAIF Development Research Foundation (Dharwad, Karnataka)

- South Asia Pro-Poor Livestock Policy Programme
- <http://saplpp.org/goodpractices/smallruminants/promotion-of-ethno-veterinary-practices-for-small-ruminants-an-action-research-study-by-baif.html#.WJBKak3yk5g>

4. Agro-ecological zones

- Tropics, warm

5. Related/Associated Technologies

- 7689

6. Objectives fulfilled by the project

6.1 Pro-poor technology

- Using herbal de-worming is an affordable method and helps in treating goats and reduce their mortality risk.