

## Mineral block lick for goats

**I**N THE PHILIPPINES, the productivity of ruminant animals such as cattle, buffaloes and goats is severely constrained by poor nutrition and gastrointestinal worms. These two problems interact to restrict growth and reproductive rates, and contribute to a high death rate in flocks and herds.

In goats, *Trichostrongylus*, *Oesophagostomum*, *Strongyloides* and *Haemonchus* are the four most common roundworms. If goats are also infested with *Fasciola*, a type of flatworm, the severity of the condition increases.

These parasites cause profuse diarrhea. As a result, the animals fail to absorb efficiently the nutrients in the intestine. *Haemonchus*, a bloodsucker, also causes protein loss via the stomach, which leads to blood loss and anemia. If the goats are left untreated,

the ultimate result is loss of weight or eventual death of the animal. There is also massive contamination of pasture areas with nematode eggs, that later become infective larvae.

One very effective method that addresses both nutrition and worm problems in ruminants is the use of a medicated urea-molasses-mineral block (MUMMB) for animals to lick (Fig. 1). This technology was developed by farmers in the Philippines. There are different kinds of medicated feed blocks, but the primary ingredients are a dewormer to act on the worms, urea to provide non-protein nitrogen, and molasses which provides energy and a good aroma and taste that attract the animal to lick the supplement.

The usual level of urea is 10% of the total mixture. The urea should be ground, and mixed thoroughly with



Fig. 1. Goat in stall using mineral block lick

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the other ingredients to avoid any possible toxic effects. Rice bran, ordinary table salt, cement (as a hardener) and dicalcium phosphate are also added.

Fenbendazole, a member of the Benzimidazole group, is a versatile and commonly used anthelmintic (antiworm medication). It has wide-spectrum activity against both immature and mature nematodes in the gut and respiratory tract. It is thus the recommended dewormer for inclusion in the block. This drug is extremely safe and well tolerated by animals.

### Adaptability of the technology

Farmers in Pangasinan, Philippines, used the traditional bamboo salt lick as their model. They prepare cylindrical blocks which are hardened by being rolled on successive days on a hot, cement floor. Initially, farmers experimented with various shapes and sizes. Eventually, they observed that the mineral feed blocks, shaped like a tube, were licked rather than eaten.

The farmers concluded that this was because the block resembled a salt lick. (Salt licks in the Philippines are placed in bamboo tubes with small perforations at the bottom). Goats reacted to the medicated block in a similar way to the salt, licking the block rather than nibbling it (Fig. 2).

### Effectiveness against roundworms

Ruminants grazing out in the pasture during the day are given free access to the block lick when they are brought back to their shed at night. For stall-fed animals, the medicated feed block is hung in a strategic part of the pen for the animals to use. The block should be used during the rainy season, at which time it should be hung up for eight weeks. The benefits derived from this block are a significant reduction of the animal's worm burden, and a significant increase in its body weight.

### Some precautions

There are no specific requirements for the adoption of this technology. However, to prepare the animals to eat the mineral supplements and condition their rumen for medication, a non-medicated feed block should be given to the goats a month before using the medicated block. At the onset of the wet season, an effective drench is recommended to kill standing adult populations and prevent further seeding of pastures with parasite eggs.

As the rainy season peaks and the risk of infection rises, the medicated mineral block must be provided for two months, but not any longer to prevent the development of anthelmintic resistance. After this time, the medicated block must be gradually withdrawn and replaced with a non-medicated block.



Fig. 2. The mineral feed block is hung in a strategic place in the pen so that the young animals (three months and below) cannot reach them