Better Worm Control for Goats and Sheep in the Philippines


1International Livestock Research Institute, Los Baños, Laguna, 2Central Luzon State University, Mñoz, Nueva Ecija, 3Philippine Council for Agriculture, Forestry & Natural Resources Research & Development, Los Baños, Laguna, 4Don Mariano Marcos Memorial State University, Bacnotan, La Union, 5Department of Agriculture, Tacloban City, Leyte, 6CSIRO Division of Animal Production, Australia

Goats and sheep are important in the mixed farming systems of South East Asia. Nematode parasitism has been identified in the Philippines as a major constraint to improving productivity among smallholder farmers and the development of commercial enterprises (Ducusin and Faylon, 1996). A comprehensive research, development and extension program is being implemented to overcome this constraint.

An immediate objective of the program is to implement currently available options for nematode control including rotational grazing systems and identification of effective dewormers. Preliminary results on these are presented here. Research on the identification of resistant genotypes is in progress.

Grazing Systems

Two trials were established to adapt and test a rapid rotational grazing system (RRGS) in which young and mature female goats are moved every 3.5 days between plots in a 10 plot rotation lasting 5 weeks (Barger et al., 1995). Nematode fecal egg counts are monitored monthly and if these reach the threshold level of 1000 eggs/gram an effective dewormer is administered. Comparable groups of goats are maintained on a similar area and type of pasture but are set-stocked (SS), that is they are maintained on the same pasture area for the entire trial. The SS animals are dewormed if they reach the same threshold level of infection. The trial has been running for 6 months at two sites with 40 animals at each site.

At both sites SS animals have passed the threshold infection level twice and been dewormed accordingly while the RRGS animals have never exceeded the threshold. Growth rates of the goats and the dominant nematode species, Haemonchus contortus were the same in both groups. The next phase of the trial includes lambing and kidding, immunity to nematodes is naturally reduced by parturition and lactation.

RRGS as practiced on large farms with many animals, is not suitable for smallholder farmers. However the same principles can be applied when tethering is used to control grazing. This will be an important emphasis in the extension program resulting from these grazing trials.

Effective Dewormers

A survey of 119 veterinarians suggested that albendazole has been the most extensively used dewormer in the Philippines. Levamisole and macrocyclic lactones have not been used to the same extent (Gray et al. 1999). A survey of resistance to benzimidazoles was undertaken using an in vitro larval development assay (LDA) based on a commercial test (Drenchrite™, Horizon Technology, Australia). Samples were collected from smallholder and commercial goat and sheep farms (Ancheta and Dumilon, 1999).

Forty-two tests have been completed from Central Luzon and Leyte, Visayas. Larvae from 21 of the samples were resistant at a level which corresponds to in vivo efficacy of benzimidazoles of less than 95% and in some cases to efficacy as low as 20%. All samples were dominated by H. contortus. Estimates of efficacy were higher in samples from smallholder farms: for example, of 12 samples collected from goats of smallholders in Leyte, 10 indicated >95% efficacy.

These results confirm that benzimidazole dewormers are not fully effective in two regions of the Philippines, adding to an earlier report from Mindanao (Van Aken et al., 1994). The difference between smallholder and commercial farms has not been described previously. We will now continue to estimate resistance to other broad spectrum dewormers and in other regions of the Philippines.

Sustainable control of nematode parasites of goats and sheep now depends on the use of several approaches. The results presented here enable extension workers and veterinarians in the Philippines to provide more useful advice on grazing management and choice of dewormer.

This work receives support from the Australian Centre for International Agricultural Research (ACIAR Project 97133) and the generous cooperation of Filipino farmers, veterinarians and extension workers.


Email: dgray@cgiar.org