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Control of *Leucaena toxicosis* in Myanmar Sheep Using IBT-Göttinger Bioreactor Grown Mimosine Degrading Ruminal *Klebsiella*

AUNG AUNG¹, HELGE BÖHNEL², TIN NGWE¹, UDO TER MEULEN³

¹University of Veterinary Science, Department of Physiology and Biochemistry, Myanmar

²Georg-August-University Göttingen, Institute of Tropical Animal Health, Germany

³Georg-August-University Göttingen, Institute of Animal Physiology and Animal Nutrition, Germany

Abstract

Rumen juice of German steer was taken and then treated with mimosine using a fermenter for 16 days to develop mimosine degrading bacteria. After this treatment, mimosine degrading bacteria (*Klebsiella spp*) were developed, then isolated and multiplied by using IBT-Göttinger Bioreactor. For the use of field experiment, they were incorporated with sodium alginic acid.

12 local sheep from Pyawbwe area, Myanmar, were allocated in 4 groups. The experiment was conducted with complete randomised design. Group I was fed with normal ration and used for control. Group II was used as treated control group fed with 40% *Leucaena* of total ration and without inoculating with ruminal *Klebsiella*. Animals from group III and IV were fed with the same ration to group II. The microbes were inoculated to animals from group III once at the beginning of feeding trial and 14 days to animals from group IV continuously. Clinical signs, feed intake and body temperature were recorded daily. Experimental period was 14 days for feeding trial and 5 days for collection of faecal and urine samples.

Clinical signs of *Leucaena toxicosis* such as loss of hair and dullness were found in group II, but not in other treated groups. Daily intakes of animals from group II gradually decreased although it was increased in other groups. Body temperatures of treated control animals were also higher than others and ranged from 39.7 to 40.6 °C while the others at the range of 38 to 38.9 °C. The mean value of TDN intake (g/ d/ kg BW^{0.75}) of group II (0.5) is significantly lower than those of group I (0.89), III (0.79) and IV (0.8) respectively.

According to these findings, IBT-Göttinger Bioreactor grown ruminal *Klebsiella* shows in vivo degradation of mimosine in Myanmar sheep.

Keywords: IBT-Goettinger Bioreactor, Kelbsiella, sheep