

## **Anthelmintic Resistance And Its Impact On High Mortality In Small Ruminants In Malaysia**

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### **Abstract**

Malaysia has a total population of about 700,000 heads of sheep and goats mainly in commercial farms as well as bred in smallholder enterprises. As a tropical country with hot wet climate, it is the perfect environment for parasitic diseases, most commonly helminthiasis, to infect these animals. Since the 1980's, there has been a steady increase in mortalities caused by helminthiasis which has led to the increase in use of anthelmintics till today. The government farms which posed as breeding stations for small ruminant production were severely affected by helminth infections and stringent measures were undertaken to prevent mortalities. Anthelmintic use was increased but in spite of this, 20 -40% mortalities were observed in some farms with typical signs of bottle jaw oedema, pale mucous membranes and abomasum full of *Haemonchus contortus*, the barberpole worm. The more common anthelmintics used are Benzimidazoles, closantel and levamisole as it was economical. In order to control helminthiasis, these drugs were prescribed every 6 weeks to coincide with the lifecycle of the trichostrongylid infections. This led to increased cost in production for small ruminants making it uneconomical as a farming venture. Thus other control measures were also instituted, such as rotational grazing and cut and carry methods for feeding instead of free grazing which was practised commonly. Despite these strategies being implemented, some farms suffered heavy mortalities and a strategic anthelmintic resistance survey was carried out from 1990 to 2015, spanning small ruminant farms in several states. In 1985 the drug ivermectin was also introduced to control helminthiasis and the first report of Ivermectin resistance was reported in 1994. Results from a survey of FECRT and Larval identification, conducted in 2003 also showed that there was severe anthelmintic resistance of worms in small ruminants at Gajah Mati government breeding farm to all four drug groups. This indicated the urgent need to view novel approaches to worm control if the industry were to be sustainable for the future. In Sabah too, a survey of 5 government farms showed a total anthelmintic failure to control helminthiasis, the major cause of death in small ruminants. The survey also covered areas in East coast states, Johore and Kedah indicating, 80-90% of the animals were positive for common trichostrongylids which cause anemia and reduce immunity, thereby leading to other secondary infections. In a survey of 30 farms, up to 73% of the farms showed resistance to Benzimidazole drugs, the cheapest and most widely available of all anthelmintics. This feature indicates the importance of regulating drug use for worm control as well as exploring new avenues and farming strategies to combat the helminth menace so that the small ruminant industry is sustainable and profitable.

Key words : Anthelmintic resistance, small ruminants, high mortality, Haemonchosis