

## **Gastrointestinal parasitic infections of buffaloes (*Bubalus bubalis*) in Sarawak Borneo: Prevalence, risk factors, and farming practices**

### **ABSTRACT**

The objectives of this study were to investigate the prevalence and associated risk factors for gastrointestinal (GI) parasites in buffaloes from various areas of Sarawak, and to assess current management practices of GI parasites among farmers. Faecal samples were collected from 15 farms and 129 animals, as well as data on farm and animal-based characteristics. A total of 129 faecal samples were examined for GI parasites using a modified McMaster and sedimentation. Association between potential risk factors and the prevalence of GI parasites was investigated using Chi-square statistic. The prevalence of Paramphistomum sp., strongyles, and coccidia were 75.2% (95% CI±7.5), 52.7% (95% CI±8.6) and 48.1% (95% CI±8.6), respectively. Farms which had a grazing area less than 50 acres in size had significantly higher prevalence of strongyles (70.5%,  $\chi^2 = 8.34$ ,  $P = 0.004$ ) and paramphistomes (88.6%,  $\chi^2 = 6.46$ ,  $P = 0.01$ ) relative to farms with a larger grazing area (43.5% and 68.2%, respectively). Prevalence of strongyles was lower in farms that did not implement a cut- and-carry system (45.6%,  $\chi^2 = 4.17$ ,  $P = 0.04$ ) in comparison to those that did (64%). The prevalence of paramphistomes was higher on farms with more than 40 animals (80.6%,  $\chi^2 = 3.18$ ,  $P = 0.05$ ) relative to farms with fewer animals. The majority of farmers surveyed (67.9%) showed awareness of GI parasite infection and reported that they recognized the associated symptoms. Most farmers practised deworming, and ivermectin was the most commonly used anthelmintic (60.4%); only 1.9% of farmers used albendazole. Overall this study revealed a high prevalence of GI parasites in buffalo in Sarawak. Although farmers report they are aware of parasitic diseases, further education is still required. This could include how they can successfully implement on-farm changes to reduce the prevalence of GI parasites in their herds.

**Keyword:** Buffalo; Gastrointestinal parasites; Risk factors; Farmers; Sarawak