SHORT COMMUNICATION

IDENTIFICATION OF *Toxocara vitulorum* EGGS IN A CALF

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The Regional Veterinary Laboratory in Johor Baru functions as a diagnostic centre for the southern region of Peninsular Malaysia. Basic diagnosis of diseases in livestock, wildlife as well as pet animals were conducted routinely. Field investigations and post mortems were carried out on dead carcasses to ascertain cause of death. A local beef cattle farm with a population of 600 crossbred cattle integrated under oil palm reported cases of morbidity (15 heads) and mortality (9 heads). Many of the calves that died were below 6 months of age. A 3-month-old dead calf was sent for postmortem. As the animal was grazed in an oil palm estate which used fertilizers (NPK), poisoning was suspected. After a routine postmotem on the dead calf, samples were collected for full laboratory investigation. A piece of small intestine was also submitted for parasitological examination. The intestine was opened and intestinal scraping technique was performed on the intestinal mucosa (Ministry of Agriculture, Fisheries and Food, 1986). The sample was placed on a glass slide and covered with a cover slip. The slide was then examined under a microscope with ×100 and ×400 magnification. On careful examination, several helminth eggs were identified, that is, *Toxocara vitulorum*, based on the characteristic size, round shape and pitted surface of the egg wall as shown in the Figure 1. *T. vitulorum* eggs were described as 69-95 µm in length and 60-77 µm width, made up of a thick albuminous wall and consisted of a granular pitted surface to the shell. (Royal Veterinary College, 2012). *T. vitulorum* was also classified as a round worm (nematode), adult worms were 15-30 cm in length and lived in small intestines of calves (Aydin *et al.,* 2005). The worms may infect buffalo (*Bulbalus bubalis*) and cattle (*Bos taurus* and *Bos indicus*) in tropical and subtropical countries (Jones *et al.,* 2010). Suckling calves may get infected through ingestion of milk containing third stage larva of *T. vitulorum* from an infected dam (Avcioğlu and Balkaya, 2010) and by transplacental infection (Aydin *et al.,* 2005). The third larval stages would take

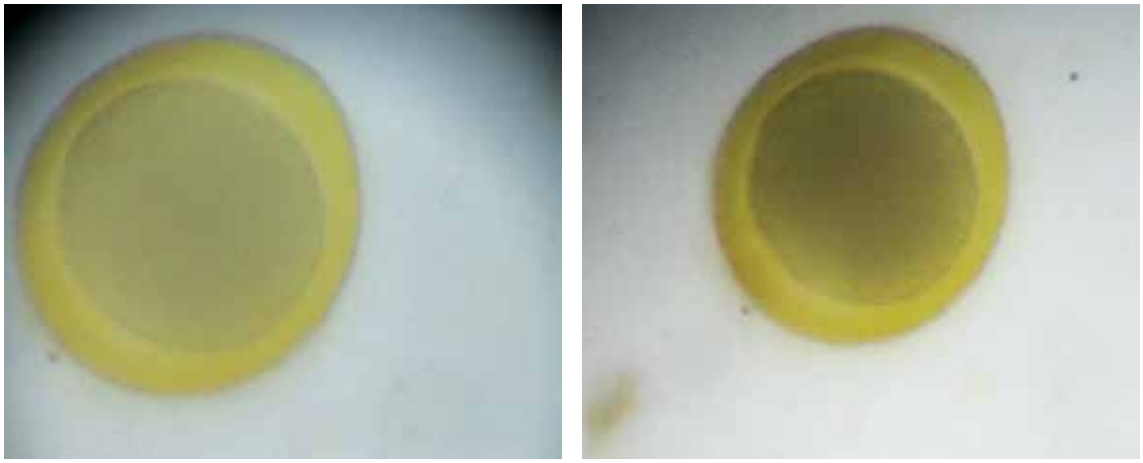

Figure 1. *T. vitulorum* eggs seen under a compound microscope with a magnification of ×400 showing thick wall

three to four weeks to produce eggs in the small intestines of calves. The eggs did not hatch in the environment. Ingested eggs would hatch and subsequently develop to second and third larval stages in the adult host. The third larval stages were recognised as an infective stage (Avcioğlu and Balkaya, 2010).

T. vitulorum is one the common worms that infect calves below 6 months (Avcioğlu and Balkaya, 2010). In calves more than 6 months of age, total egg counts will be reduced as the animals gain immunity (Kulisic and Janjic, 2003). The worms rarely infects yearlings or older cattle. According to Avcioglu and Balkaya (2010), there were no correlation between the total eggs burden with the sex and breed of the animals. Based on the data, age of the animal was determined as the main factor for *T. vitulorum* infection. Besides that, environmental moisture, type of barn, cleanliness and the use of anthelmintics drugs, also known as the supportive factor, led to the infection (Avcioğlu and Balkaya, 2010). *T. vitulorum* infection was found to cause diarrhoea in a calves due to acid-base and electrolyte imbalance (Hayat *et al*, 1999). The infected calves should be treated with anthelmintic drugs such as piperazine, pyrantel, levamisole and fenbendazole to prevent the spread of the *T. vitulorum* infection to healthy calves. A deworming programe is recommended for 10- to 16-day-old calves and the dam should be drenched 3 months before parturition to reduce the risk of prenatal infections. In conclusion, extension services should emphasise the importance of *T. vitulorum* infection to dairy farmers. This will help farmers plan a deworming programe to avoid future losses.

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