

Identification of endoparasites from faeces of Javan rhino (*Rhinoceros sondaicus*) in Ujung Kulon National Park, Indonesia

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Introduction and objectives

Ujung Kulon National Park (TNUK) located in the west part of Java, Indonesia with geographical 6°38' - 6°51' LS dan 105°12' - 105°30' BT. This National Park is located between Indian ocean in the South and Sunda strait in the West; with temperature 25 °C - 30 °C and humidity between 80% - 90%. Javan rhino (*Rhinoceros sondaicus*) is one of the wild animals live in TNUK with population accounted for 46 - 60 heads. Beside Javan rhino, Javan Banteng (*Bos javanicus*), Javan Gibon (*Hylobates moloch*), wild dog (*Cuon alpinus*) and wild pig (*Sus scrofa*) also live in TNUK [1]. Endoparasite infections (helminths and protozoan) are one of several aspects that could affect the health status of these wild animals. Observation of endoparasites infections by identification of the egg worm and protozoan from the dung (faeces) of Javan rhino is one of the effort to examine the health status of these wild animals especially the Javan rhino.

Materials and methods

The faeces samples (1-3 days old) from Javan rhino were collected based on their transec route on Agustus, 8-16th 2005. Transec route use in this study was the route that usually use for camera trap study [2,3]. Faeces for helminths study was proceed using procedure of McMaster, Sedimentation and Baermann methods. Videomicrometer was used for measuring the size of egg and larvae. Flotation technique using 2% K₂Cr₂O₇ was applied for protozoan examination.

Results

The structure of the faeces from Javan rhino is similar to the domestic ruminants, greenish brown with high content of plant fiber and usually accompanied with undigested plant leave [3]. Parasitic nematodes found were : *Strongyloides* spp. (56.5 - 57.3 x 30 - 32 µm) from family Strongyloididae; *Bunostomum* spp. (83.3 - 95.2 x 47.2 - 57.8 µm) from family Ancylostomatidae (Figure 1). *Trichostrongylus* spp. (78.1 - 98.7 x 36.1 - 47.6 µm) from family Trichostrongylidae. Parasitic trematodes found were: *Fasciola* spp. (144.2 -159.7 x 68.4 - 81.9 µm) and *Schistosoma* spp. (199.4 x 111.8 µm). Degree of helminth infection both from nematodes and trematodes in Javan rhino seem to be in mild condition. Parasitic protozoa found in this study were: *Balantidium* spp. (cyst diameter 40 - 60 µm) from family Balantiidiidae; *Entamoeba* spp. (cyst diameter 5 - 35 µm) from family Endamoebidae; *Cryptosporidium* spp. (oocyst diameter 1,5 - 5 µm) from family Cryptosporidiidae; *Eimeria* spp. from family Eimeriidae; Family Ophryoscolecidae; *Cycloposthium*

spp. from family Cycloposthiidae; *Lavieraella* from family Ophryoscolecidae.



Figure 1 Bunostomum egg

Discussion

Based on the temperature and humidity of TNUK this national park is suitable for the endoparasites development. There were numbers of foot trace and faeces of Javan rhino in the south and southwest part of TNUK, this evidence was correlated with the number and species of endoparasites egg worm or cycts of protozoan that found from 1 - 3 days old faeces [2]. Even there is a small number of information concerning the endoparasitic infections in wild animals especially in Javan rhino, the identification methodes use in this study was applied according to the endoparasites identification for the domestic animals in the same family as that of rhinoceros [4]. In the present study we could identify the degree of infection and classify as mild infection. On the other hand, if there is no good control measured, this mild condition could affect the health status of the Javan rhino in general.

Conclusion

Based on all findings above, we concluded that there were mild helminth and protozoan infections in Javan rhino live at Ujung Kulon National Park (TNUK).

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