



**TESTOSTERONE AND CORTISOL LEVEL IN FECAL
JAVA DEER (*Cervus russa timorensis* Mul. & Schl 1844) MALE
IN CAPTIVITY BUNDER GUNUNG KIDUL YOGYAKARTA**

Slamet Widiyanto, Laksmindra Fitria, Nastiti Wijayanti, and Mulyati Sarto

Animal Physiology Laboratory, Faculty of Biology, Gadjah Mada University,
Yogyakarta, Indonesia.
e-mail: slametbio@ugm.ac.id

ABSTRACT

Common reasons for monitoring hormone concentrations in domestic or wild animals, include breeding management, pregnancy diagnosis, stress assessment, and to diagnosed of endocrine illness. The research goal was to develop non invasive analytical techniques of hormone in Java deer (*Cervus russa timorensis* Mul. & Schl 1844). The non-invasive methods involve the collection of feces, urine, or even saliva in order to measure the metabolites hormones of interest. Samples obtained from either method are most often analyzed with radioimmunoassay (RIA) or enzyme immunoassay (EIA) technology. Both collection and assay methods have advantages and disadvantages. Choice of method depends on the tractability of the species or individual animal in question and the type of question that the data is expected to answer. We are researching basic questions regarding reproductive endocrinology of male *Cervus russa timorensis* Mul. & Schl 1844. Understanding *C timorensis* reproductive physiology will help us better address reproductive challenges in both captive and free-ranging populations. Fecal testosterone and cortisol concentrations were measured in captive male *C timorensis*. As much as five adult male deer were separated into separate cages. Fecal samples were collected in the morning and evening for 30 days. Sample processed through lyophilization stage, pulverization, solvent extraction with methanol and centrifugation to obtain the supernatant for EIA analysis. EIA test results indicated that content of both testosterone and cortisol could be detected, although the levels were still low. This data show that there is a metabolite in-activism in the fecal. With these results through fecal hormone measurement method (non-invasive) it is possible to be developed for observation and research on the reproductive status of the deer.

Key words: Non-invasive, Testosterone, Cortisol, Java deer.