

ABSTRAK

**PENGARUH KELOMPOK UMUR TERHADAP PERUBAHAN KADAR
FECAL GLUCOCORTICOID METABOLITES (FGM) PADA KAMBING
(*Capra aegagrus hircus*) DALAM KEGIATAN ANIMAL-ASSISTED
THERAPY (AAT)**

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Kambing (*Capra aegagrus hircus*) merupakan hewan ternak yang memiliki sifat adaptif dan berpotensi dimanfaatkan dalam kegiatan *Animal-Assisted Therapy* (AAT). Penelitian ini bertujuan untuk menganalisis pengaruh kelompok umur terhadap perubahan kadar metabolit kortisol feses kambing sebagai indikator respons fisiologis yang diukur melalui nilai delta kortisol dalam satu periode ekskresi *fecal glucocorticoid metabolites* (FGM). Penelitian ini menggunakan 20 ekor kambing yang dikelompokkan berdasarkan umur (1, 2, dan 3 tahun) dan dilaksanakan di Yayasan Ainul Yakin. Pengukuran dilakukan secara noninvasif menggunakan sampel feses. Sampel dianalisis menggunakan metode *Enzyme-Linked Immunosorbent Assay* (ELISA). Perubahan kadar kortisol dihitung sebagai delta kortisol berdasarkan selisih antara pengambilan sampel ke-2 dan pengambilan sampel ke-1. Data dianalisis menggunakan uji Shapiro-Wilk, uji Levene, dan uji One Way ANOVA yang dilanjutkan dengan uji *post hoc* Tukey HSD. Hasil penelitian menunjukkan bahwa umur berpengaruh terhadap perubahan kadar kortisol. Uji lanjut menunjukkan perbedaan signifikan antara kelompok umur 2 tahun dan 3 tahun ($p < 0,05$). Kelompok lainnya tidak menunjukkan perbedaan yang signifikan ($p > 0,05$). Nilai delta kortisol tertinggi terdapat pada kelompok kambing umur 2 tahun, diikuti kelompok umur 1 tahun, dan terendah pada kelompok umur 3 tahun. Perubahan kadar FGM yang terukur pada penelitian ini diduga dipengaruhi oleh faktor umur serta aktivitas AAT yang dilakukan sebelum pengambilan sampel karena pengukuran FGM tidak menggambarkan respons stres secara *real time* akibat adanya mekanisme *time lag* pada ekskresi metabolit kortisol dalam feses. Penelitian lanjutan disarankan menggunakan interval waktu pengambilan sampel yang sesuai dengan pola ekskresi FGM untuk memperoleh gambaran respons fisiologis yang lebih akurat. Penggunaan kambing umur dewasa (3 tahun) juga disarankan dalam kegiatan AAT.

Kata kunci: *Animal-Assisted Therapy*, kambing, kortisol, stres, umur

ABSTRACT

THE EFFECT OF AGE GROUP ON CHANGES IN FECAL GLUCOCORTICOID METABOLITES (FGM) LEVELS IN GOATS (*Capra aegagrus hircus*) DURING ANIMAL-ASSISTED THERAPY (AAT)

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Goats (*Capra aegagrus hircus*) are livestock animals that possess adaptive characteristics and have the potential to be utilized in Animal-Assisted Therapy (AAT) activities. This study aimed to analyze the effect of age group on changes in goat fecal cortisol metabolite levels as an indicator of physiological response measured through delta cortisol values within one excretion period of fecal glucocorticoid metabolites (FGM). This study used 20 goats grouped based on age (1, 2, and 3 years old) and was conducted at Yayasan Ainul Yakin. Measurements were performed noninvasively using fecal samples. Samples were analyzed using the Enzyme-Linked Immunosorbent Assay (ELISA) method. Changes in cortisol levels were calculated as delta cortisol based on the difference between the second sample collection and the first sample collection. Data were analyzed using the Shapiro-Wilk test, Levene's test, and One Way ANOVA followed by the Tukey HSD post hoc test. The results showed that age affected changes in cortisol levels. Further analysis showed a significant difference between the 2-year-old and 3-year-old age groups ($p < 0.05$). The other groups did not show significant differences ($p > 0.05$). The highest delta cortisol value was found in the 2-year-old goat group, followed by the 1-year-old group, and the lowest in the 3-year-old group. Changes in FGM levels measured in this study were suspected to be influenced by age factors as well as AAT activities conducted before sample collection because FGM measurements do not describe stress responses in real time due to the time lag mechanism in the excretion of cortisol metabolites in feces. Further studies are recommended to use sample collection intervals that correspond to the FGM excretion pattern to obtain a more accurate description of physiological responses. The use of adult goats (3 years old) is also recommended in AAT activities.

Keywords: Animal-Assisted Therapy, goats, cortisol, stress, age