

ABSTRAK

KORELASI HORMON TRIIODOTIRONIN (T₃) TERHADAP LINGKAR TUBUH SAPI JANTAN PASCA PEMBERIAN TEPUNG CANGKANG KERANG DARAH (*Anadara granosa*)

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Kerang darah (*Anadara granosa*) merupakan salah satu spesies binatang laut yang banyak ditemukan di wilayah perairan Indonesia. Cangkang kerang darah mengandung mineral *zinc* yang berperan dalam proses kerja enzim 1,5'-deiodinase untuk mengubah hormon tiroksin (T₄) menjadi triiodotironin (T₃). Tingginya potensi cangkang kerang darah dapat dimanfaatkan untuk menghasilkan tepung cangkang kerang darah yang berpengaruh terhadap kadar hormon T₃ sebagai regulator laju metabolisme. Penelitian ini bertujuan untuk mengetahui korelasi hormon T₃ terhadap lingkar tubuh sapi pada minggu ke-5 pasca pemberian tepung cangkang kerang darah. Penelitian ini menggunakan lima ekor sapi berjenis kelamin jantan dengan ras Simmental, Limousin, dan Madura, serta memiliki rentang usia 3-4 tahun. Tepung cangkang kerang darah diberikan sebanyak 90 gram/ekor/hari yang dibagi dalam dua kali pemberian. Pemberian tepung dicampurkan ke dalam konsentrat dan diberikan selama 35 hari. Pengambilan sampel darah dilakukan pada minggu ke-0 dan minggu ke-5, serta pengukuran lingkar tubuh dilakukan pada minggu ke-5. Sampel darah diukur menggunakan ELISA untuk mengetahui kadar hormon T₃. Hasil pengukuran kadar hormon T₃ sebelum perlakuan yaitu $1,62 \pm 0,50$ ng/ml dan setelah perlakuan yaitu $1,46 \pm 0,68$ ng/ml. Analisis statistika menunjukkan pemberian tepung cangkang kerang tidak memberikan pengaruh yang signifikan ($P > 0,05$) terhadap kadar hormon T₃. Rata-rata hasil pengukuran lingkar tubuh pada lima sapi yaitu $160,3 \pm 20,4$ cm. Hasil uji *Pearson* menunjukkan peningkatan hormon T₃ memiliki korelasi positif ($r = 0,028$) terhadap lingkar tubuh dan tidak terdapat signifikansi antarvariabel ($P > 0,05$). Berdasarkan hasil penelitian dapat disimpulkan bahwa terdapat korelasi positif antara kadar hormon T₃ terhadap lingkar tubuh sapi pasca pemberian tepung cangkang kerang darah selama 35 hari, meskipun data menunjukkan hasil yang tidak signifikan.

Kata kunci: cangkang kerang darah, *zinc*, triiodotironin, lingkar tubuh

ABSTRACT

CORRELATION BETWEEN TRIIODOTHYRONINE (T₃) HORMONE AND BODY CIRCUMFERENCE IN MALE CATTLE FOLLOWING ADMINISTRATION OF BLOOD COCKLE (*Anadara granosa*) SHELL POWDER

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Blood cockle (*Anadara granosa*) is a marine species commonly found in Indonesian waters. Blood cockle shells contain zinc, a mineral that plays an important role in the activity of the enzyme 1,5'-deiodinase to convert thyroxine (T₄) into triiodothyronine (T₃). The high potential of blood cockle shells can be utilized to produce shell powder, which may affect T₃ hormone levels that play a role in regulating metabolic rate. This study aimed to determine the correlation between T₃ hormone levels and body circumference in cattle during the fifth week following the administration of blood cockle shell powder. The study involved five male cattle of Simmental, Limousin, and Madura breeds, aged between 3 and 4 years. Blood cockle shell powder was administered at a dose of 90 grams/head/day, divided into two feedings. The powder was mixed into the concentrate and given for 35 days. Blood samples were collected in weeks 0 and 5, and body circumference was measured in week 5. The blood samples were analyzed using the ELISA method to determine T₃ hormone levels. The mean T₃ hormone concentration before treatment was 1.62 ± 0.50 ng/ml, and after treatment it was 1.46 ± 0.68 ng/ml. Statistical analysis showed that the administration of shell powder did not have a significant effect ($P > 0.05$) on T₃ hormone levels. The average body circumference of the five cattle was 160.3 ± 20.4 cm. Pearson correlation analysis revealed a positive correlation ($r = 0.028$) between T₃ hormone levels and body circumference, with no statistically significant relationship between the variables ($P > 0.05$). Based on these results, it can be concluded that there is a positive correlation between T₃ hormone levels and body circumference in cattle after 35 days of blood cockle shell powder administration, although the correlation was not statistically significant.

Keywords: blood cockle shell, zinc, triiodothyronine, body circumference