

## ABSTRAK

### **KORELASI KADAR TETRAIODOTIRONIN (T<sub>4</sub>) DAN TESTOSTERON SAPI JANTAN YANG DIBERI TEPUNG CANGKANG KERANG DARAH (*Anadara granosa*)**

**Adis Steviany**

**21/473329/KH/10834**

Kesadaran konsumen tentang kebutuhan akan protein hewani, termasuk daging sapi meningkat hingga lebih dari 15.000 ton pada tahun 2023. Namun, pertambahan bobot badan sapi jantan lebih cepat dibandingkan sapi betina karena adanya hormon androgen yang merangsang perkembangan dan mengontrol karakteristik genetik. Tetraiodotironin dan testosteron merupakan hormon yang berperan dalam berbagai fungsi fisiologis, termasuk metabolisme dan reproduksi, khususnya pada sapi jantan. Penelitian ini bertujuan untuk melihat korelasi antara kadar tetraiodotironin (T<sub>4</sub>) dan testosteron pada sapi jantan yang diberi tepung cangkang kerang darah (*Anadara granosa*). Pada penelitian ini digunakan tujuh ekor sapi jantan berjenis sapi Madura, Simmental, dan Limousin umur 3-4 tahun. Pemberian tambahan tepung cangkang kerang dilakukan selama 42 hari dengan dosis 90 gram/hari/ekor sapi untuk dua kali pemberian per hari. Pengambilan sampel darah melalui vena jugularis sapi pada minggu kesatu (sebelum perlakuan) dan minggu keenam (setelah perlakuan). Serum dari darah tersebut dilakukan pengujian kadar hormon T<sub>4</sub> dan testosteron menggunakan ELISA Kit Calbiotech®. Hasil penelitian menunjukkan bahwa terdapat penurunan kadar T<sub>4</sub> minggu kesatu, yaitu  $9,72 \pm 5,52$  ng/ml menjadi  $9,02 \pm 5,57$  ng/ml pada minggu keenam, sedangkan kadar testosteron menunjukkan peningkatan, yaitu minggu kesatu sebesar  $5,76 \pm 3,66$  ng/ml menjadi  $6,14 \pm 3,82$  ng/ml pada minggu keenam. Hasil analisis statistik korelasi Pearson adanya korelasi negatif dengan nilai  $r -0,210$ , meskipun tidak signifikan dengan nilai  $0,651$ . Kesimpulan dari penelitian ini adalah kadar hormon T<sub>4</sub> berkorelasi negatif dengan testosteron pada sapi jantan yang diberi suplementasi tepung cangkang kerang darah.

**Kata kunci:** ELISA, korelasi negatif, serum

**ABSTRACT**

**CORRELATION OF TETRAIODOTHYRONINE (T<sub>4</sub>) AND  
TESTOSTERONE LEVELS OF BULLS FED WITH BLOOD CLAM  
SHELL POWDER (*Anadara granosa*)**

**Adis Steviany**

**21/473329/KH/10834**

Consumer awareness of the need for animal protein, including beef, increased by more than 15,000 tons in 2023. However, the weight gain of bulls is faster than that of cows. This occurs due to the presence of androgen hormones, which stimulate growth and regulate genetic characteristics. Tetraiodothyronine and testosterone are hormones that play a role in various physiological functions, including metabolism and reproduction, particularly in bulls. This study aims to examine the correlation between tetraiodothyronine (T<sub>4</sub>) and testosterone levels in bulls fed with blood clam (*Anadara granosa*) shell powder. This study used seven bulls of Madura, Simmental, and Limousin breeds, aged 3–4 years. Blood clam shell powder was supplemented for 42 days at a dosage of 90 grams per day per bulls, given twice a day. Blood samples were collected from the jugular vein in the first week (before treatment) and the sixth week (after treatment). Serum from the collected blood was analyzed for T<sub>4</sub> and testosterone levels using the ELISA Kit Calbiotech®. The results of the study showed a decrease in T<sub>4</sub> levels from  $9.72 \pm 5.52$  ng/ml in the first week to  $9.02 \pm 5.57$  ng/ml in the sixth week, while testosterone levels showed an increase from  $5.76 \pm 3.66$  ng/ml in the first week to  $6.14 \pm 3.82$  ng/ml in the sixth week. The Pearson correlation statistical analysis indicated a negative correlation with an r-value of -0.210, although it was not significant with a p-value of 0.651. The conclusion of this study is that T<sub>4</sub> hormone levels are negatively correlated with testosterone in bulls supplemented with blood clam shell powder.

**Keywords:** ELISA, negative correlation, serum