

ABSTRACT

Estimation of Body Weight of Saburai Female Goats Through Body Measurements Using Non-Linear Equations (Case Study in Kelompok Ternak Tani Makmur II)

By

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This research aimed to determine the correlation and non linear regression between body weight (BW) and body measurements which include body length (BL), shoulder height (SH), chest girth (CG), and hip height (HH) in female Saburai goats in Kelompok Ternak Tani Makmur II, Gisting District, Tanggamus Regency, Lampung Province. This research was held in January 2023. Saburai goat used in this study were 33 heads aged 1--3 years and not pregnant. The method used was a survey and data collection was done by case study. The data obtained was tabulated using the excel program. Data were analyzed with non-linear correlation and regression between independent (body measurements) and dependent (body weight) variables using the R program. The results showed that body measurements correlated with body weight of female Saburai goats, where body length had a strong correlation with a value of 0.75; shoulder height has a moderate correlation with a value of 0.55; chest girth has a strong correlation value with a value of 0.79; and hip height has a moderate correlation value with a value of 0.71. The results of this study also showed that the non linear regression equation of body length (PB), shoulder height (TP), chest girth (LD), and hip height (TGPG) on body weight were $BB = 87.3886 + (-2.5264) PB + 0.0253PB^2$; $BB = -170.2195 + 5.4209TP + (-0.0346)TP^2$; $BB = -76.8074 + 1.9316LD + (-0.0051)LD^2$ and $BB = -25.4917 + 0.8394TGPG + 0.0007TGPG^2$, respectively and has a coefficient of determination of 0.6009; 0.4711; 0.6383; and 0.5080, respectively.

Keyword : Body measurements, body weight, correlation, non-linear regression, saburai female goat,

ABSTRAK

Pendugaan Bobot Badan Kambing Saburai Betina Melalui Ukuran-Ukuran Tubuh Dengan Menggunakan Persamaan Non Linier (Studi Kasus di Kelompok Ternak Tani Makmur II)

Oleh

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Penelitian ini bertujuan untuk mengetahui korelasi dan regresi non linier antara bobot badan (BB) dengan ukuran-ukuran tubuh yang meliputi panjang badan (PB), tinggi pundak (TP), lingkar dada (LD), dan tinggi pinggul (TGPG) pada kambing Saburai betina di Kelompok Tani Ternak II, Kecamatan Gisting, Kabupaten Tanggamus, Provinsi Lampung. Penelitian ini dilaksanakan pada Januari 2023. Kambing Saburai yang digunakan dalam penelitian ini sebanyak 33 ekor berumur 1--3 tahun dan tidak bunting. Metode yang digunakan adalah survei dan pengambilan data dilakukan secara studi kasus. Data yang diperoleh ditabulasi menggunakan program excel. Data dianalisis dengan analisis korelasi dan regresi non linier antara variabel independen dan variabel dependen menggunakan program R. Hasil penelitian menunjukkan bahwa ukuran-ukuran tubuh memiliki korelasi dengan bobot badan kambing Saburai betina, dimana panjang badan memiliki korelasi kuat dengan nilai 0,75; tinggi pundak memiliki korelasi sedang dengan nilai 0,55; lingkar dada memiliki nilai korelasi kuat dengan nilai 0,79; dan tinggi pinggul memiliki nilai korelasi sedang dengan nilai 0,71. Hasil penelitian juga menunjukkan bahwa persamaan regresi non linier antara panjang badan (PB), tinggi pundak (TP), lingkar dada (LD), dan tinggi pinggul (TGPG) terhadap bobot badan masing-masing yaitu $BB = 87,3886 + (-2,5264)PB + 0,0253PB^2$; $BB = -170,2195 + 5,4209TP + (-0,0346)TP^2$; $BB = -76,8074 + 1,9316LD + (-0,0051)LD^2$; dan $BB = -25,4917 + 0,8394TGPG + 0,0007TGPG^2$, dan memiliki koefisien determinasi secara berurutan yaitu 0,6009; 0,4711; 0,6383; dan 0,5080.

Kata kunci : Bobot badan, kambing Saburai betina, korelasi, regresi non linier, ukuran-ukuran tubuh,