

**MODEL STATISTIK PENDUGAAN BOBOT BADAN SAPI LIMOUSIN  
BETINA BERDASARKAN UKURAN LINGKAR DADA, PANJANG  
BADAN DAN TINGGI GUMBA**

Ignasius Resa Christanto Pratomo

**ABSTRACT**

The aims of the study were to estimate body weight of Limousin cows based on body measurement, are chest girth, body length, and hump height with the statistics models or regression equation. The result indicated that the statistics models compared with body weight of digital scale and body weight formula to find out the accuracy or precision.

Research objects were 31 Limousin cows with an age between one and four months. The body weight between 431 to 849 kg, the chest girth between 169 to 312 cm, the body length between 141 to 177 cm, and the hump height between 124 to 159 cm.

The body measurement data analyzed with multiple linear regression analysis. The regression equation is  $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$ . The Y variable is body weight or BB,  $\alpha$  is constantan,  $\beta$  is linear regression coefficient,  $X_1$  is chest girth or LD, and  $X_2$  is body length or PB, also  $X_3$  is hump height or TG.

The statistics models or regression equation is  $BB = -1019,970 + 0,713 LD + 5,740 PB + 4,228 TG$ , with coefficient of determination is 0,718. This research result indicates that the statistics model be able to estimating Limousin cow's body weight. Based on regression coefficient, the body length and hump height are more influence Limousin cow's body weight gain on age between one and four months rather than chest girth.

One-way classification Anova result that there is body weight difference between statistics models, digital scale and body weight formula. On Duncan's multiple range test result, the statistics models are the most closely with digital scale than body weight formula. Estimating cow's weight with Schoorl body weight formula is significance than the body weight of digital scale, statistics models, and body length-modification formula.