

**ESTIMASI PARAMETER GENETIK SIFAT PERTUMBUHAN DAN IDENTIFIKASI
GEN HORMON PERTUMBUHAN SAPI BRAHMAN DI BALAI PEMBIBITAN
TERNAK UNGGUL-HIJAUANPAKAN TERNAK, SEMBAWA,
SUMATERA SELATAN**

INTISARI

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Penelitian ini bertujuan untuk mengetahui keragaman genetik melalui estimasi parameter genetik sifat pertumbuhan sapi Brahman yang dipelihara di BPTU-HPT Sembawa, Sumatera Selatan dan untuk mencari identifikasi gen hormon pertumbuhan pada Sapi Brahman. Penelitian dibagi menjadi dua tahap yaitu tahap penelitian lapangan dan tahap penelitian laboratorium. Materi penelitian lapangan terdiri dari data rekording 2007 sampai 2013 sebanyak 537 data sedangkan penelitian laboratorium menggunakan 30 sampel darah sapi Brahman. Nilai heritabilitas sifat pertumbuhan pada sapi Brahman termasuk dalam kategori sedang (BL $0,16 \pm 0,12$; BS $0,27 \pm 0,16$; TGS $0,29 \pm 0,17$; TGST $0,18 \pm 0,19$) dan tinggi (BST $0,36 \pm 0,27$; PBS $0,67 \pm 0,27$; LDS $0,68 \pm 0,27$; PBST $0,68 \pm 0,34$; LDST $0,47 \pm 0,28$). Nilai ripitabilitas sifat pertumbuhan pada sapi Brahman termasuk dalam kategori sedang (BL $0,23 \pm 0,10$; TGS $0,24 \pm 0,11$; LDS $0,22 \pm 0,12$; PBST $0,20 \pm 0,16$; LDST $0,26 \pm 0,15$) dan tinggi (BS $0,36 \pm 0,11$; BST $0,49 \pm 0,14$; PBS $0,45 \pm 0,10$; TGST $0,33 \pm 0,15$). Nilai korelasi genetik sifat pertumbuhan Sapi Brahman termasuk dalam kategori rendah (BS-PBS $0,10 \pm 0,34$; BS-TGS $0,08 \pm 0,42$; BS-LDS $0,10 \pm 0,34$), sedang (BL-BS $0,18 \pm 0,44$; BL-BST $0,12 \pm 0,50$; BST-TGST $0,17 \pm 0,61$; BST-LDST $0,23 \pm 0,45$), dan tinggi (BS-BST $0,41 \pm 0,39$; BST-PBST $0,31 \pm 0,39$; PBS-PBST $0,72 \pm 0,15$; TGS-TGST $0,36 \pm 0,49$; LDS-LDST $0,74 \pm 0,15$). Sebanyak 30 sampel darah sapi Brahman menunjukkan monomorfisme dimana genotip LL 100% yang ditandai oleh munculnya dua pita (159 bp dan 52 bp). Nilai heritabilitas dan ripitabilitas sifat pertumbuhan pada sapi Brahman termasuk dalam kategori sedang dan tinggi. Nilai korelasi genetik sifat pertumbuhan Sapi Brahman termasuk dalam kategori rendah, sedang, dan tinggi. Populasi sapi Brahman di BPTU-HPT Sembawa dengan GH 211 bp bersifat monomorfisme dimana genotip LL 100% dan GH 891 bp bersifat polimorfisme dimana terdapat genotip Msp (+/-), Msp (+/-), Msp (-/-).

Kata kunci: Parameter genetik, Sifat pertumbuhan, Heritabilitas, Ripitabilitas, Korelasi genetik, Nilai pemuliaan, Gen hormon pertumbuhan, Sapi Brahman

ESTIMATING GENETIC PARAMETERS AND GROWTH HORMONE GENE
IDENTIFICATION IN LIVESTOCK BREEDING CENTER FOR
EXCELLENCE AND FORAGE, SEMBAWA,
SOUTH SUMATRA

ABSTRACT

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The objective of this study was to find the variety genetics by estimating genetic parameters growth traits of Brahman in Livestock Breeding Center for Excellence and Forage, Sembawa, South Sumatera, and to find the growth hormone identification of Brahman cattle. This study was divided into two phase, field and laboratory study. The field study materials were consisted of a recording data from 2007 to 2013 as many as 537 of data while the laboratory study used 30 Brahman's blood samples. Heritability value of Brahman's growth traits were in medium category (birth weight/BW 0.16 ± 0.12 ; weaning weight/WW 0.27 ± 0.16 ; weaning shoulder height/WSH 0.29 ± 0.17 ; yearling shoulder height/YSH 0.18 ± 0.19) and high (yearling weight/YW 0.36 ± 0.27 ; weaning body length/WBL 0.67 ± 0.27 ; weaning heart girth/WHG 0.68 ± 0.27 ; yearling body length/YBL 0.68 ± 0.34 ; yearling heart girth/YHG 0.47 ± 0.28). Repeatability value of Brahman's growth traits were in medium category (birth weight/BW 0.23 ± 0.10 ; weaning shoulder height/WSH 0.24 ± 0.11 ; weaning heart girth/WHG 0.22 ± 0.12 ; yearling body length/YBL 0.20 ± 0.16 ; yearling heart girth/YHG 0.26 ± 0.15) and high (weaning weight/WW 0.36 ± 0.11 ; yearling weight/YW 0.49 ± 0.14 ; weaning body length/WBL 0.45 ± 0.10 ; yearling shoulder height/YHH 0.33 ± 0.15). Genetic correlation value of Brahman's growth traits were in low category (WW-WBL 0.10 ± 0.34 ; WW-WSH 0.08 ± 0.42 ; WW-WHG 0.10 ± 0.34), medium (BW-WW 0.18 ± 0.44 ; BW-YW 0.12 ± 0.50 ; YW-YSH 0.17 ± 0.61 ; YW-YHG 0.23 ± 0.45), and high (WW-YW 0.41 ± 0.39 ; YW-YBL 0.31 ± 0.39 ; WBL-YBL 0.72 ± 0.15 ; WSH-YSH 0.36 ± 0.49 ; WHG-YHG 0.74 ± 0.15). A total of 30 blood samples Brahman cattle show monomorphism where 100% of LL genotype which was characterized by the appearance of two bands (159 bp and 52 bp). Heritability and repeatability value of Brahman's growth traits were included in medium and high category. Genetic correlation value of Brahman's growth traits were in low, medium, and high category. Brahman cattle population in Livestock Breeding Center for Excellence and Forage, Sembawa, South Sumatera which used GH 211bp were monomorphism where 100% LL genotype and which used GH 891 bp were polimorphisms with Msp (+/+), Msp (+/-), Msp (-/-) genotypes.

Keywords: Genetics parameter, Growth traits, Heritability, Repeatability, Genetic correlation, Breeding value, Growth hormone gene, Brahman cattle