

Correlation between Semen Quality, Libido, and Testosterone Concentration in Bali Bulls

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ABSTRAK

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Indonesia memiliki dua Balai Inseminasi Buatan (BIB) Nasional dan lebih dari 15 Balai Inseminasi Buatan Daerah (BIBD) yang tersebar di beberapa provinsi. Pejantan unggul di BIB dan BIBD, harus memiliki libido yang tinggi dan menghasilkan semen yang berkualitas. Penelitian ini bertujuan untuk mengevaluasi dan menguji korelasi antara libido dengan kualitas semen dan konsentrasi hormon testosteron, serta potensi produksi semen beku dari pejantan sapi Bali di BIBD Sulawesi Selatan. Sepuluh ekor pejantan sapi Bali milik BIBD Sulawesi Selatan digunakan dalam penelitian ini. Koleksi semen dilakukan dua kali setiap minggu dengan evaluasi semen mengikuti protokol BIBD, bersamaan dengan itu dilakukan pengambilan sampel darah dan pengukuran libido dari masing-masing pejantan. Potensi produksi semen beku dihitung dengan mengalikan volume semen, motilitas dan konsentrasi sperma. Hasil penelitian menunjukkan bahwa kualitas semen segar dan konsentrasi hormon testosteron tidak berbeda antara pejantan sapi Bali libido tinggi dan rendah. Libido memiliki korelasi positif dengan volume semen ($r= 0,52$) dan motilitas sperma ($r= 0,62$), sedangkan konsentrasi testosteron berkorelasi negatif dengan volume semen ($r= -0,65$), motilitas sperma. Pejantan sapi Bali libido tinggi dan rendah memiliki potensi produksi semen beku yang baik yaitu berkisar antara 19.755 – 21.640 straw per tahun. Pejantan sapi Bali di BIBD memiliki kualitas semen segar dan konsentrasi hormon testosteron dalam kondisi normal dengan potensi produksi semen beku yang tinggi, meskipun hanya 60% sapi Bali yang memiliki libido tinggi dan 40% memiliki libido rendah.

Kata Kunci: Sapi Bali, Produksi Semen Beku, Libido, Kualitas Semen, Konsentrasi Testosteron

ABSTRACT

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Indonesia has two National Artificial Insemination Centers (AIC) and more than 15 Regional Artificial Insemination Centers (RAIC) spread across several provinces. Bulls in the AIC must have a high libido and produce good quality semen. This study examines the correlation between libido with semen quality and testosterone concentration to determine potential frozen semen production from Bali bulls in South Sulawesi RAIC. Ten Bali bull were used in this study. Semen collection was carried out twice a week with semen evaluation following the RAIC protocol. At the same time, blood samples and libido measurements were carried out from each bull. The frozen semen production potential was calculated by multiplying the semen volume, motility, and sperm concentration. The results showed that the quality of fresh semen and testosterone concentrations did not differ between high and low libido of Bali bulls. Libido has a positive correlation with semen volume ($r= 0.52$) and sperm motility ($r= 0.62$), while testosterone concentration has a negative correlation with semen volume ($r= -0.65$), sperm motility ($r= -0.60$), and libido ($r= -0.48$). Bulls with high and low libido have good frozen semen production potential, ranging from 19,755 – 21,640 straws per year. Bali bulls in RAIC have fresh semen quality and testosterone concentrations under normal conditions, with high potential for frozen semen production, although only 60% of Bali cattle have high libido and 40% have low libido.

Key Words: Bali Bull, Frozen Semen Productivity, Libido, Semen Quality, Testosterone Concentration

INTRODUCTION

Bali cattle are known to have high environmental adaptability and good reproductive efficiency. Bali cattle are also resistant to low feed conditions, resistant to parasites, with carcasses 52.72-57.6% and good meat

quality (Alwiyah et al. 2016; Gunawan et al. 2016; Jakaria et al. 2017). Mating these cattle is mainly done by artificial insemination (AI), using frozen semen produced by the AI centre (AIC). Indonesia has two National AICs, and more than 15 Regional Artificial Insemination Centers (RAIC) spread across several