

EVALUASI FISIK DAN BIOLOGIS MINERAL BLOK BERBASIS GARAM

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INTISARI

Penelitian ini bertujuan untuk mengetahui evaluasi fisik mineral blok berbasis garam, serta konsumsi mineral blok pada kambing. Bahan baku mineral blok yang dipakai yaitu: garam, semen, premix, dan air, dengan tiga macam rasio garam : semen : premix (3:1:1, 4:1:1, dan 5:1:1), serta tiga level proporsi air (5, 10, dan 15% dari total formula mineral blok). Evaluasi fisik yang diamati, yaitu densitas, absorpsi dan stabilitas air, serta kekerasan mineral blok. Hasil penelitian menunjukkan bahwa tiga formula dengan evaluasi fisik terbaik yaitu level 5% air dan 5 bagian garam (P3); level 10% air dan 3 bagian garam (P4); serta level 10% air dan 4 bagian garam (P5). Ketiga formula tersebut menunjukkan nilai absorpsi dan stabilitas air paling rendah, yaitu -5,71% (P3), -5,38% (P4) dan -6,48% (P5) untuk absorpsi air dan 10,38% (P3), 7,98% (P4), dan 10,16% (P5) untuk stabilitas air, serta kekerasan yang paling stabil karena nilainya tidak ikut berubah mengikuti perubahan formulasi, yaitu 41,33 kg/cm² (P3), 49,62 kg/cm² (P4), dan 45,83 kg/cm² (P5). Konsumsi mineral blok pada kambing di antara ketiga formula (P3, P4, dan P5) tidak berbeda, yaitu 54,4, 67,8, dan 59,0 g/ekor/hari. Dari konsumsi tersebut dapat diketahui bahwa mineral blok telah memenuhi kebutuhan harian NaCl kambing (P3, P4, dan P5) yaitu 48,14, 38,99, dan 53,67 g/ekor/hari, dari kebutuhan NaCl kambing yaitu 5,55 – 8,1 g/ekor/hari, serta konsumsi semen dari mineral blok pada P3, P4, dan P5 masih dalam batas yang direkomendasikan, yaitu 9,2, 12,07, dan 12,69 g/ekor/hari dari batasan 11,1 – 16,2 g/ekor/hari. Berdasarkan hasil penelitian dapat disimpulkan bahwa formula mineral blok terbaik yaitu P3, P4, dan P5 karena menunjukkan kekerasan mineral blok yang paling stabil, dan nilai absorpsi serta stabilitas air paling rendah. Densitas mineral blok berkurang seiring bertambahnya penggunaan air dan garam, densitas mineral blok terbaik yaitu 1,90 sampai 1,88 g/cm³. Konsumsi mineral blok telah memenuhi kebutuhan NaCl harian kambing dan konsumsi semen masih pada batas yang direkomendasikan.

Kata kunci: Mineral blok, Evaluasi fisik, Konsumsi.

PHYSICAL AND BIOLOGICAL EVALUATION OF MINERAL BLOCK BASED ON SALT

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ABSTRACT

This study was aimed to determine the physical evaluation of mineral blocks based on salt, thus the consumption of mineral blocks by goats. The mineral blocks are made of salt, cement, premix, and water, with three kinds of ratio between salt: cement: premix (3:1:1, 4:1:1 and 5:1:1), and three levels proportion of water (5, 10, and 15% of the total mineral block's formula). The observed physical evaluations were density, water absorption, water stability, and hardness. The results showed that the three best physical quality formula were 5% water, 5 part of salt (P3), 10% water level, 3 part of salt (P4), and 10% water level, 4 part of salt (P5). The three formulas showed the lowest absorption and water stability, -5.71% (P3), -5.38% (P4) and -6.48% (P5) for water absorption; 10.38% (P3), 7.98% (P4), and 10.16% (P5) for water stability, and best hardness compared to other formulas, 41.33 kg/cm² (P3), 49.62 kg/cm² (P4), and 45.83 kg/cm² (P5). The consumption of mineral blocks by goats between the three formulas (P3, P4, and P5) did not differ 54.4, 67.8, and 59.0 g/head/day. From that data, it can be seen that it has fulfilled daily requirement of goat NaCl (P3, P4, and P5), 48.14, 38.99, and 53.67 g/head/day, from the needs of NaCl was 5.55 - 8.1 g/head/day, and cement consumption from mineral block P3, P4, and P5 was still at the recommended limit, 9.2, 12.07, and 12.69 g/head/day from the range of 11.1-16.2 g/head/day. Based on the result of the research, it can be concluded that the best three of block mineral formula is P3, P4, and P5 because it shows the most stable hardness of the block's minerals, and the lowest absorption and water stability. The mineral density of the block decreases with increasing use of water and salt, the best mineral block density of 1,90 to 1,80 g/cm³. Mineral block consumption has met the daily requirement of goat NaCl and cement consumption is still at the recommended limit.

Keywords: Mineral block, Physical evaluation, Consumption.