

## **PENGUNAAN *HIGH QUALITY FEED SUPPLEMENT* ATAU TEPUNG DAUN KELOR PADA PAKAN KOMPLIT TERHADAP KECERNAAN NUTRIEN, PROFIL HORMON DAN KINERJA INDUK DOMBA**

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*High Quality Feed Supplement (HQFS)* atau tepung daun kelor (TDK) mengandung nutrien yang penting untuk reproduksi. Penelitian ini bertujuan menganalisis penggunaan *HQFS* atau TDK terhadap pencernaan, *balance* nitrogen, *average daily gain (ADG)*, *feed conversion ratio (FCR)*, metabolit plasma darah, profil hormon, kebuntingan, bobot lahir cembe, *litter size* dan ADG prasapih. Sebanyak 25 ekor induk Domba Ekor Tipis (DET) berumur 2 - 3 tahun, dengan rerata bobot badan  $25 \pm 2,2$  kg dibagi 5 kelompok perlakuan (A: kontrol, B: 10% HQFS, C: 20% HQFS, D: 10%TDK dan E: 20% TDK) diulang 5 kali dengan desain penelitian Rancangan Acak Lengkap. Data dianalisis menggunakan anova dengan uji lanjut kontras ortogonal. Penelitian terdiri dari 3 tahap. Hasil tahap I: penggunaan HQFS atau TDK pada pakan komplit induk domba meningkatkan ( $P < 0,01$ ) konsumsi nutrien, nutrien tercerna, ADG dan *balance* N dibandingkan kontrol. Konsumsi nutrien, nutrien tercerna, ADG dan *balance* nitrogen pada penggunaan HQFS lebih tinggi ( $P < 0,01$ ) dibandingkan penggunaan TDK. Kecernaan PK dan TDN pada penggunaan 10% HQFS lebih tinggi dibandingkan 20% HQFS (133 vs 124 g/ekor/hari) dan TDN (430 vs 405 g/ekor/hari). Penggunaan 10% TDK meningkatkan ( $P < 0,01$ ) konsumsi, nutrien tercerna dan ADG dibandingkan 20% TDK. Hasil tahap 2: penggunaan HQFS atau TDK meningkatkan ( $P < 0,05$ ) kadar ureum darah (36,43 vs 33,3 mg/dl) dan kolesterol darah (76,38 vs 73,8 mg/dl) dibandingkan kontrol. Kadar kolesterol pada penggunaan 10% HQFS lebih tinggi dibandingkan 20% HQFS (81,8 vs 74,5 mg/dl). Kadar Ca serum darah pada penggunaan TDK lebih tinggi ( $P < 0,01$ ) dibandingkan penggunaan HQFS (12,5 vs 10,3 mg/dl). Kadar P serum darah pada penggunaan HQFS lebih tinggi ( $P < 0,01$ ) dibandingkan penggunaan TDK (3,13 vs 2,3 mg/dl). Penggunaan HQFS atau TDK meningkatkan ( $P < 0,01$ ) kadar hormon estrogen (20,2 vs 22 pg/ml) dan progesteron (4,49 vs 6,65 ng/ml) dibandingkan kontrol. Kadar estrogen dan progesteron pada penggunaan 10% HQFS ( $P < 0,01$ ) lebih tinggi dibandingkan 20% HQFS. Kadar progesteron pada penggunaan 10% TDK ( $P < 0,01$ ) lebih tinggi dibandingkan 20% TDK. Penggunaan HQFS mempercepat ( $P < 0,01$ ) onset estrus dibandingkan TDK (22,9 vs 28,2 jam). Tingkat kebuntingan pada penggunaan TDK lebih tinggi dibandingkan penggunaan HQFS (100% vs 80%). Hasil tahap 3: penggunaan 10% TDK meningkatkan ( $P < 0,01$ ) bobot lahir dibandingkan penggunaan 20% TDK. Pada penggunaan HQFS ADG prasapih lebih tinggi ( $P < 0,01$ ) dibandingkan penggunaan TDK. Dapat disimpulkan bahwa penggunaan 10% HQFS atau 10% TDK pada pakan komplit lebih baik dari level 20% HQFS atau 20% TDK terhadap kinerja induk domba.

Kata kunci: bobot lahir, suplemen, kebuntingan, metabolit darah, tepung daun kelor

## THE USE HIGH-QUALITY FEED SUPPLEMENT OR MORINGA OLEIFERA LEAF MEAL IN COMPLETE FEEDS ON NUTRIENT DIGESTIBILITY, HORMONE PROFILE, AND REPRODUCTIVE PERFORMANCE OF EWES

### ABSTRACT

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The High-Quality Feed Supplement (HQFS) or Moringa oleifera leaf meal (MOLM) contain essential nutrients for reproductive functions. This study aimed to analyze the use of HQFS or MOLM on digestibility, nitrogen balance, average daily gain (ADG), feed conversion ratio (FCR), blood plasma metabolites, hormone profile, pregnancy rate, birth weight and pre-weaning ADG. Twenty-five Thin Tailed Ewes, aged 2-3 years with an average body weight of  $25 \pm 2.2$  kg, were allocated into five treatment groups (A: control, B: 10% HQFS, C: 20% HQFS, D: 10% MOLM, and E: 20% MOLM. Using a randomized complete block design. The data were analyzed using ANOVA and orthogonal contrast for further testing. The study was conducted in three stages. In stage one, the use of HQFS or MOLM in the complete feed for ewes increased ( $P < 0.01$ ) nutrient consumption, digested nutrients, ADG and nitrogen (N) balance compared to the control group. The use HQFS increased ( $P < 0.01$ ) nutrient consumption, digestible nutrients, ADG, and N balance compared to MOLM. The use 10% HQFS increased ( $P < 0.01$ ) in CP digestible (133 vs 124 g/head/day) and TDN (430 vs 405 g/head/day) compared to a level of 20%. Consumption, digestible nutrients, and ADG increased ( $P < 0.01$ ) with a 10% MOLM, compared to a 20% MOLM. In stage 2, the used of HQFS or MOLM increased ( $P < 0.05$ ) in blood urea levels compared to the control group (36.43 vs 33.3 mg/dl) and blood cholesterol levels (76.38 vs 73.8 mg/dl). The blood cholesterol levels increased by 10% in the HQFS group compared to the 20% group (81.8 vs 74.5 mg/dl). The use of MOLM increased ( $P < 0.01$ ) blood serum calcium levels than HQFS (12.5 mg/dl vs 10.3 mg/dl). The use of HQFS increased ( $P < 0.01$ ) blood serum phosphorus levels compared to MOLM (3.13 mg/dl vs 2.3 mg/dl). The use of HQFS or MOLM increased ( $P < 0.01$ ) in estrogen (20.2 vs 22 pg/ml) and progesterone (4.49 vs 6.65 ng/ml) compared to the control group. The concentration of estrogen and progesterone were higher a 10% of HQFS compared to a 20% levels of HQFS. The concentration progesterone obtained with a 10% levels MOLM were greater than those obtained with a 20% HQFS. The use of HQFS accelerated ( $P < 0.01$ ) the initial phase of estrus in comparison to MOLM (22.9 vs 28.2 hours). The pregnancy rate was higher with MOLM than with HQFS (100% vs 80%). In stage 3, the use of 10% TDK significantly ( $P < 0.01$ ) increased birth weight compared to the use of 20% TDK. The use of HQFS significantly ( $P < 0.01$ ) increased pre-weaning ADG compared to the use of TDK. Based on the given description, it can be concluded that use of 10% HQFS or 10% MOLM in the complete feed yielded better results compared to using a 20% HQFS or 20% MOLM for reproductive performance ewes.

Keywords: birth weight, blood metabolites, supplement, moringa oleifera leaf meal, pregnancy rate