

**PENENTUAN KEBUTUHAN NUTRIEN AYAM KAMPUNG
FASE PERTUMBUHAN YANG DIPELIHARA SECARA
INTENSIF DENGAN METODE KAFETARIA**

INTISARI

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Penelitian ini bertujuan mengetahui kebutuhan nutrisi ayam kampung fase pertumbuhan yang dipelihara secara intensif dengan metode kafetaria. Penelitian dilaksanakan di Laboratorium Ilmu Ternak Unggas Fakultas Peternakan UGM, Yogyakarta. Pelaksanaan penelitian selama 40 minggu sejak bulan Februari sampai November 2016. Ayam kampung yang digunakan pada penelitian tahap pertama sebanyak 100 ekor dan 288 ekor pada penelitian tahap kedua berumur 1 hari. Masing-masing tahap penelitian dipelihara dalam 3 fase yaitu *starter*, *grower* dan *pullet*. Pada penelitian pertama terdiri dari 4 kelompok, masing-masing 25 ekor dengan pemberian pakan secara kafetaria. Penelitian kedua menggunakan 4 perlakuan dan 4 ulangan. Masing-masing ulangan terdiri dari 18 ekor ayam kampung. Perlakuan yang diberikan adalah P₀: Pakan standar kafetaria, P₁: Pakan standar protein kasar National Research Council (NRC), P₂: Pakan dengan penambahan asam amino metionin dan lisin 50% dari standar NRC P₃: Pakan dengan penambahan asam amino metionin dan lisin 100% dari standar NRC untuk setiap fase pemeliharaan. Penelitian tahap kedua menggunakan Rancangan Acak Lengkap pola searah. Data penelitian pertama dianalisis secara diskriptif dan penelitian kedua dianalisis dengan analisis variansi dilanjutkan dengan uji Duncan. Hasil penelitian tahap pertama fase *starter*, *grower* dan *pullet* menunjukkan bahwa konsumsi pakan ayam kampung adalah 800,10, g/ekor/6 minggu, 2684,36 g/ekor/8 minggu dan 4001,55 g/ekor/6 minggu, energi termetabolis 2965,35, 2990,55 dan 2988,76 kcal/kg, protein kasar 22,47, 52,11 dan 88,35 g/ekor/minggu, metionin 0,04, 0,07 dan 0,09 g/ekor/minggu, lisin 0,08, 0,18 dan 0,22 g/ekor/minggu, kalsium 2,35, 5,39 dan 8,87 g/ekor/minggu, fosfor 0,79, 1,97 dan 4,12 g/ekor/minggu dan serat kasar 9,40, 24,49 dan 49,14 g/ekor/minggu. Berat badan ayam kampung pada umur 6, 14 dan 20 minggu adalah 222,28 g/ekor, 659,23 g/ekor dan 1252,16 g/ekor, persentase karkas 55,69, 57,57 dan 63,69% dan konversi pakan 4,23, 6,14 dan 6,78. Hasil penelitian tahap kedua menunjukkan bahwa suplementasi 0,27% metionin dan 0,79% lisin pada fase *starter* meningkatkan konsumsi pakan, berat badan, pertambahan berat badan, konversi pakan, berat karkas, berat hati dan empedu, berat pankreas, tinggi vili, kedalaman kriptas dan lebar vili usus dibanding pakan standar kafetaria dan standar protein NRC (P<0,05). Pada fase *grower* suplementasi 0,23% metionin dan 0,55% lisin juga meningkatkan konsumsi pakan, berat badan, pertambahan berat badan, konversi pakan, berat karkas, berat hati dan empedu, berat pankreas, berat *gizzard*, tinggi vili, kedalaman kriptas dan lebar vili usus (P<0,05). Pada fase *pullet*, suplementasi 0,19% metionin dan 0,42% lisin menurunkan konsumsi pakan tetapi meningkatkan berat badan, berat karkas, berat hati dan empedu, berat pankreas, berat dan volume testis dan berat ovarium (P<0,05). Berat *gizzard*, lemak abdominal, ukuran morfologi usus, kadar eritrosit, hemoglobin, leukosit, hematokrit dan total protein plasma darah ayam kampung pada akhir fase *pullet*

tidak dipengaruhi oleh suplementasi metionin dan lisin. Disimpulkan bahwa ayam kampung yang dipelihara secara kafetaria mampu memenuhi kebutuhan energi, kalsium dan fosfor pada fase *starter*, *grower* maupun *pullet*. Suplementasi asam amino metionin dan lisin pada setiap fase dalam pakan standar kafetaria mempercepat dan meningkatkan konsumsi pakan, pertumbuhan, ukuran organ dalam tubuh, organ reproduksi dan ukuran morfologi usus ayam kampung.

Kata kunci: Kebutuhan nutrisi, Metode kafetaria, Pertumbuhan ayam kampung

**DETERMINATION OF NUTRIENT REQUIREMENT OF NATIVE
CHICKENS AT GROWING PHASE REARED INTENSIVELY
BY FREE CHOICE FEEDING METHOD**

ABSTRACT

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The research was conducted to investigate nutrient requirement of native chicken at grower phase which was reared intensively using free choice feeding method. This study was held in Laboratory of Poultry Science, Faculty of Animal Science, UGM, Yogyakarta during 40 weeks since February to November 2016. A hundred of native chickens were used in the first stage of study then 288 birds of day old chicks were used in the second stage of study. The chicken from each stage of study were kept in three phase of starter, grower, and pullet. At the first stage of study there were 4 groups which consisted of 25 birds each using free choice feeding method. At the second stage there were 4 groups replicate 4 times which consisted of 18 birds each. The treatment given to each phase was P0: standard feed of free choice feeding, P1: standard feed of National Research Council's (NRC) crude protein, P2: feed with supplementation of amino acid methionine and lysine 50% from NRC standard, P3: feed with supplementation of amino acid methionine and lysine 100% from NRC standard. The second stage of study used One Way-Completely Randomized Design. The data resulted from the first stage of study was analyzed descriptively and the second stage of study was analyzed by analysis of variance followed by Duncan test. The result from the first stage of study at starter, grower, and pullet phase respectively showed that feed consumption of native chicken were 800.10 g/bird/6 weeks, 2684.36 g/bird/8 weeks and 4001.55 g/bird/6 weeks, metabolizable energy were 2965.35, 2990.55 and 2988.76 kcal/kg, crude protein were 22.47, 52.11 and 88.35 g/bird/week, methionine were 0.04, 0.07 and 0.09 g/bird/week, lysine were 0.08, 0.18 and 0.22 g/bird/week, calcium were 2.35, 5.39 and 8.87 g/bird/week, phosphorus were 0.79, 1.97 and 4.12 g/bird/week and crude fiber were 9.40, 24.49 and 49.14 g/bird/week. The body weight of native chickens aged 6, 14 and 20 weeks were 222.28 g/bird, 659.23 g/bird and 1252.16 g/bird, percentage of carcass were 55.69, 57.57 and 63.69% and feed conversion were 4.23, 6.14 and 6.78 respectively. The result of the second study showed that supplementation of 0.27% methionine and 0.79% lysine at starter phase gave significantly effect ($P < 0.05$) than free choice feeding treatment and NRC protein feed treatment upon feed consumption, body weight, body weight gain, feed conversion ratio, carcass weight, liver and bile weight, pancreas weight, villi height, crypt depth, and villi width of intestinal. At grower phase, supplementation of 0.23% methionine and 0.55% lysine significantly affected ($P < 0.05$) to feed consumption, body weight, body weight gain, feed conversion ratio, carcass weight, liver and bile weight, pancreas weight, gizzard weight, villi height, crypt depth, and villi width of intestinal. At pullet phase, the addition of 0.19% methionine and 0.42% lysine decreased feed consumption but in the other hand increased body weight, carcass weight, liver and bile weight, pancreas weight, the weight and volume of testis, and the weight of ovary ($P < 0.05$). Gizzard weight, abdominal fat, intestinal morphology size, the level of erythrocyte, hemoglobin, leukocyte, hematocrit, and

blood plasma protein total of native chicken at the end of pullet phase didn't affect by supplementation of methionine and lysine. It can be concluded that native chicken raised using free choice feeding method were able to fulfil their feed requirement of energy, calcium, phosphorus at starter, grower, and pullet phase. The addition of amino acid methionine and lysine on standard feed of free choice feeding in every growth phase accelerated and increased feed consumption, chicken growth, the size of organ, reproductive organ, and intestinal morphology size of native chickens.

Keywords: Nutrient requirement, Free-choice feeding, Native chicken growth