# PEMANFAATAN *Spirulina* sp. dan *Chlorella* sp. DALAM REKAYASA PAKAN TERHADAP PERTUMBUHAN, FEKUNDITAS, WARNA DAGING, DAN KADAR SERUM LIPID PADA PUYUH (*Coturnix coturnix* Linnaeus, 1758)

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## INTISARI

Puyuh (*Coturnix coturnix*) merupakan salah satu komoditas unggas potensial di Indonesia. Puyuh mempunyai potensi yang baik untuk diternakan karena memiliki beberapa keuntungan yaitu dapat dimanfaatkan daging dan telurnya. Salah satu upaya dalam peningkatan produktivitas puyuh yaitu dengan menggunakan *growth promote agent* (GPA). Salah satu alternatif GPA adalah mikroalga. Mikroalga mengandung berbagai suplemen makanan yang potensial seperti asam lemak omega-3, EPA, DHA, dan klorofil. Penelitian ini bertujuan untuk mempelajari pengaruh penambahan *Spirulina* sp. dan *Chlorella* sp. pada formulasi pakan terhadap performa pertumbuhan, fekunditas, warna daging, dan kadar serum lipid. Penelitian ini dilakukan di Laboratorium Fisiologi Hewan pada bulan Juli hingga September 2016. Pada penelitian ini digunakan 23 ekor puyuh betina dan dikelompokan menjadi 5 kelompok dengan perlakuan kadar mikroalga pada ransum pakan yaitu 0%, 3%, 6%, 9%, dan 12%. Perlakuan dilakukan selama 28 hari dan dicatat *feed intake*, berat badan mingguan dan morfometri mingguan. Pada hari ke 29, 3 ekor puyuh dari setiap kelompok dieutanasi, kemudian berat *carcass*, berat ovarium, dan jumlah folikel ovarium dicatat. Penentuan warna menggunakan otot pektoral dengan bantuan software Photoshop CS4. Pengukuran kadar serum lipid meliputi kadar kolesterol total, LDL, HDL, dan trigliserida, dilakukan dengan menggunakan spektrofotometri. Berdasarkan analisis didapatkan bahwa penambahan mikroalga 3%, 6%, 9% dan 12% dapat meningkatkan pertumbuhan pada puyuh namun belum dapat meningkatkan fekuditas puyuh, penambahan mikroalga dalam ransum dapat menurunkan *fat abdominal* pada semua kelompok; meningkatkan *lightness* dan *yellowness* pada daging puyuh kelompok 6%; menaikan pH daging pada perlakuan 3%; serta dapat menurunkan kadar kolesterol total, LDL, dan trigliserida.

Kata kunci: *Chlorella* sp., *Spirulina* sp., fekuditas, pertumbuhan, puyuh, lipid

# THE UTILIZATION OF *Spirulina* sp. AND *Chlorella* sp. IN FEED ADDITIVE ON GROWTH, FECUNDITY, MEAT COLOUR, AND LIPID SERUM LEVEL IN QUAIL (*Coturnix coturnix* Linnaeus, 1758)

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## ABSTRACT

Quail (*Coturnix coturnix*) is one of potential poultry commodity in Indonesia. Quail has a good potential as a livestock because it has many benefits, such as its meat and eggs. One of the efforts for increasing productivity of poultry is using Growth Promote Agent (GPA). The alternative GPA is microalgae. Microalgae contains many potential food supplements such as omega-3 fatty acid, EPA, DHA, and chlorophyll. The aim of this research was to study the influence of *Spirulina* sp. and *Chlorella* sp. addition in feed on growth, fecundity, meat colour, and lipid serum level. This research was done in Animal Physiology Laboratory, Faculty of Biology, Universitas Gadjah Mada on July until September 2016. We used 23 seven days old female quails and divided into five treatment groups with different levels of microalgae in feed (0%, 3%, 6%, 9%, and 12%). The treatments were conducted during 28 days. Feed intake, weekly body weight and weekly morphometry were recorded. At day-29, 3 random quails from each group were euthanized for analizing carcass weight; ovary weight; and total follicles of ovary. Determination of meat colour (pectoral muscle) was analized using Photoshop CS4. Lipid serum level, including total cholesterol, LDL, HDL, and triglycerides levels were measured using spectrophotometry method. Based on the analysis, the addition of microalgae 3%, 6%, 9% and 12% could increase growth of quails but it could not increase fecundity in quails. The addition of microalgae in feed could decrease fat abdominal in all groups; increase lightness and yellowness in quails meat at group 6%; increase pH of meat in treatment 3%; and decrease the level of total cholesterol, LDL, and triglycerides in all groups.

Key words: *Chlorella* sp., *Spirulina* sp., fecundity, microalgae, growth, quail, lipid