

ABSTRAK

PERKEMBANGAN GONAD DAN INDEKS REPRODUKSI IKAN MASKOKI (*Carassius auratus*) BETINA DENGAN SUPLEMENTASI TEPUNG MAGGOT (*Hermetia illucens*) PADA PAKAN KOMERSIAL

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Ikan maskoki (*Carassius auratus*) memiliki nilai ekonomi tinggi, namun proses maturasi gonadnya tergolong lambat, sehingga ketersediaan benih tidak selalu kontinyu. Peningkatan kualitas pakan melalui suplementasi tepung maggot (*Hermetia illucens*) yang kaya protein dan asam lemak esensial, diharapkan dapat mempercepat pematangan gonad dan meningkatkan indeks reproduksi. Penelitian ini bertujuan mengevaluasi pengaruh suplementasi tepung maggot pada pakan komersial terhadap perkembangan gonad dan indeks reproduksi ikan maskoki betina, serta menentukan dosis terbaiknya. Penelitian dilakukan menggunakan rancangan acak lengkap (RAL) dengan 4 perlakuan, yaitu kontrol (suplementasi tepung maggot 0 g/kg pakan), P1 (suplementasi tepung maggot 50 g/kg pakan), P2 (suplementasi tepung maggot 100 g/kg pakan), dan P3 (suplementasi tepung maggot 150 g/kg pakan) dengan 3 ulangan. Parameter yang diamati meliputi tingkat kematangan gonad (TKG), indeks kematangan gonad (IKG), diameter telur, dan kualitas air (suhu, pH, dan DO). Pengambilan sampel dilakukan setiap 10 hari sekali selama 30 hari pemeliharaan. Data kuantitatif dianalisis menggunakan Anova dan uji lanjut Duncan, sedangkan data kualitatif dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa selama 30 hari pemeliharaan, pemberian suplementasi tepung maggot pada pakan komersial mampu mempercepat kematangan gonad ikan maskoki betina yang sebelumnya *immature* (TKG I) mencapai tahap *regenerating* (TKG VI), serta meningkatkan indeks kematangan gonad tertinggi yaitu 18,90%, dan meningkatkan nilai diameter telur terbesar yaitu 0.89 mm. Kualitas air selama penelitian yaitu suhu, pH, dan DO berada pada kisaran optimal sesuai SNI 9076:2022. Dosis terbaik untuk meningkatkan perkembangan gonad dan indeks reproduksi ikan maskoki betina adalah P3 yaitu suplementasi tepung maggot 150 g/kg pakan.

Kata kunci: Indeks Kematangan Gonad, Maggot, Maskoki, Perkembangan Gonad

ABSTRACT

GONADAL DEVELOPMENT AND REPRODUCTIVE INDEX OF FEMALE GOLDFISH (*Carassius auratus*) WITH MAGGOT MEAL (*Hermetia illucens*) SUPPLEMENTATION IN COMMERCIAL FEED

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Goldfish (*Carassius auratus*) has high economic value, however its gonadal maturation process is relatively slow, resulting in inconsistent larvae availability. Improving feed quality through supplementation with maggot meal (*Hermetia illucens*), which is rich in protein and essential fatty acids, is expected to accelerate gonadal maturation and enhance reproductive index. This study aimed to evaluate the effect of maggot meal supplementation in commercial feed on gonadal development and reproductive index of female goldfish, as well as to determine the optimal dosage. The experiment was conducted using a completely randomized design with four treatments, namely control (maggot meal supplementation 0 g/kg feed), P1 (maggot meal supplementation 50 g/kg feed), P2 (maggot meal supplementation 100 g/kg feed), and P3 (maggot meal supplementation 150 g/kg feed) with three replications. Parameters observed included gonad maturity rate (GMR), gonadosomatic index (GSI), egg diameter, and water quality (temperature, pH, and DO). Sampling was carried out every 10 days for 30 days of rearing. Quantitative data were analyzed using Anova followed by Duncan's test, while qualitative data were analyzed descriptively. The results showed that during the 30-day rearing period, supplementation of maggot meal in the commercial diet was able to accelerate gonadal maturation in female goldfish, which initially were in the immature stage (GMR I) and progressed to the regenerating stage (GMR VI). It also increased the highest gonadosomatic index to 18.90% and produced the largest egg diameter value of 0.89 mm. Water quality parameters, including temperature, pH, and DO, remained within optimal ranges according to SNI 9076:2022. The best dosage to improve gonadal development and reproductive index of female goldfish was P3 (supplementation of 150 g/kg feed).

Keywords: Goldfish, Gonadal Development, Gonadal Maturity Index, Maggot Meal