

RINGKASAN

Ikan lunjar (*Rasbora lateristriata*) menjadi salah satu komoditas yang banyak digemari masyarakat dan memiliki potensi nilai ekonomi yang tinggi, namun pemenuhan kebutuhan ikan lunjar masih mengandalkan penangkapan dari alam. Keterbatasan benih dalam budidaya ikan lunjar menjadi masalah utama karena tingginya tingkat kematian pada fase larva. Salah satu faktor penting yang mempengaruhi adalah faktor pakan yang berkualitas dan sesuai dengan bukaan mulut larva. Pemberian pakan dalam bentuk mikrokapsul menggunakan maggot *Black Soldier Fly* dapat menjadi alternatif yang dapat diberikan. Penelitian ini bertujuan untuk mengetahui pertumbuhan dan perkembangan larva *R.lateristriata* yang diberi pakan mikrokapsul maggot *Black Soldier Fly*.

Penelitian telah dilaksanakan pada bulan Februari-Agustus 2024 menggunakan metode eksperimental dengan rancangan percobaan berupa Rancangan Acak Lengkap (RAL) yang terdiri dari lima perlakuan dan setiap perlakuan terdiri dari lima ulangan. Perlakuan terdiri dari (P0) : pakan D0, (P1) : pakan D0 mikrokapsul, (P2) : pakan mikrokapsul maggot instar 4, (P3) : pakan mikrokapsul maggot instar 5, dan (P4) pakan mikrokapsul maggot instar 6. Variabel meliputi pertumbuhan dan perkembangan morfoanatomi larva ikan. Data yang diperoleh berupa penambahan bobot dan panjang larva, laju pertumbuhan spesifik (SGR), laju pertumbuhan relatif (RGR), *Food Conversion Ratio* (FCR), *Survival Rate* (SR), penambahan panjang sirip, dan penambahan lebar bukaan mulut dianalisis ragam *One Way Anova* pada tingkat signifikansi 95%. Hasil berbeda nyata dilakukan uji lanjut Tukey. Data hubungan panjang tubuh dan CFRE dianalisis uji korelasi. Data mengenai perkembangan morfoanatomi bukaan mulut dan sirip meliputi pigmentasi dan bentuk dianalisis secara deskriptif

Hasil penelitian menunjukkan bahwa pemberian pakan mikrokapsul maggot BSF instar 6 (P4) memberikan pengaruh paling baik terhadap penambahan bobot, panjang, SGR, RGR, lebar bukaan mulut, panjang sirip caudal, dorsal, pectoral, dan ventral. Pemberian pakan mikrokapsul instar 6 (P4) menghasilkan penambahan bobot sebesar $0,033 \pm 0,012$ g, penambahan panjang sebesar $9,58 \pm 0,25$ mm, RGR $1,109 \pm 943,1\%$, SGR $8,10 \pm 2,29\%$, lebar bukaan mulut sebesar $0,15 \pm 0,05$ mm, penambahan panjang sirip caudal sebesar $3,42 \pm 0,29$ mm, sirip dorsal sebesar $1,68 \pm 0,29$ mm, sirip pectoral sebesar $1,93 \pm 0,31$ mm, dan sirip ventral sebesar $1,27 \pm 0,35$ mm. Pertambahan panjang sirip anal paling baik yaitu perlakuan pakan mikrokapsul instar 5 (P3) sebesar $1,57 \pm 0,16$ mm. Uji korelasi menunjukkan jumlah CFRE berhubungan positif ($R=0,9970$) dengan panjang tubuh larva, dengan CFRE berjumlah 10-13 pada minggu ke-4. Pemberian pakan mikrokapsul maggot BSF tidak berpengaruh nyata terhadap FCR dan SR. Ditemukan adanya pigmentasi melanofor dan xantofor pada larva. Pemberian pakan mikrokapsul maggot *Black Soldier Fly* instar 6 menghasilkan pertumbuhan dan perkembangan larva ikan lunjar (*Rasbora lateristriata*) paling optimal dibandingkan pakan mikrokapsul maggot BSF instar lainnya dan pakan komersil. Dengan demikian, penggunaan mikrokapsul maggot BSF dapat digunakan sebagai substitusi pakan komersial selama pemeliharaan larva ikan *R.lateristriata*.

Kata kunci : *Maggot BSF, Mikrokapsul, Pertumbuhan, Perkembangan, R.lateristriata.*

SUMMARY

Rasbora lateristriata (lunjar fish) had become one of the popular commodities with high economic potential, but the supply of lunjar fish still relied on wild capture. One of the main issues in the breeding of *R. lateristriata* was the limited availability of larvae, due to the high mortality rate during the larval phase. One of the important factors affecting this is the quality of feed suitable for the mouth opening of the larvae. A potential solution to overcome this problem is using *Black Soldier Fly* (BSF) maggot microcapsule feed. This study aimed to investigate the growth and development of *R. lateristriata* larvae that were fed with BSF maggot microcapsules.

The research was conducted in February-August 2024 using an experimental method with a Completely Randomized Design (CRD) experimental design consisting of five treatments and each treatment consisted of five replicates. The treatments consisted of (P0) which is D0 feed; (P1) which is microcapsule D0 feed; (P2) which is fourth instar maggot microcapsule feed; (P3): which is fifth instar maggot microcapsule feed, and (P4) which is sixth instar maggot microcapsule feed. Variables include the growth and development of morphoanatomy of fish larvae. The obtained data were larvae body weight and length growth, Specific Growth Rate (SGR), Relative Growth Rate (RGR), Food Conversion Ratio (FCR), Survival Rate (SR), fins length increase, and mouth opening width increase were analyzed by One Way Anova at the 95% significance level. This research result were significantly different, Tukey's further test was conducted. Data on the relationship between body length and CFRE were analyzed by correlation tests. Data on the development of morphoanatomy of mouth openings and fins including pigmentation and shape were analyzed descriptively.

The results showed that sixth instar maggot microcapsule feeding (P4) gave the best effect on the growth of weight, length, SGR, RGR, mouth opening, caudal, dorsal, pectoral, and ventral fin length. Sixth instar maggot microcapsule feeding (P4) resulted in weight gain of 0.033 ± 0.012 g, length gain of 9.58 ± 0.25 mm, RGR of $1,109 \pm 943.1\%$, SGR $8.10 \pm 2.29\%$, mouth opening of 0.15 ± 0.05 mm, caudal fin length increase of 3.42 ± 0.29 mm, dorsal fin of 1.68 ± 0.29 mm, pectoral fin of 1.93 ± 0.31 mm, and ventral fin of 1.27 ± 0.35 mm. Best increase in anal fin length is the treatment fifth instar maggot microcapsule feed (P3) amounting to 1.57 ± 0.16 mm. The correlation test showed that the number of CFRE was positively correlated ($R=0.9970$) with larvae body length, with CFRE numbering 10-13 at week 4. Feeding of maggot BSF microcapsules has no significant effect on FCR and SR. It was found that there was melanophore and xanthophore pigmentation in the larvae. Feeding Black Soldier Fly maggot resulted in better growth and development of lunjar fish larvae (*Rasbora lateristriata*) compared to others instar and commercial feed with the optimal treatment of maggot microcapsule feed instar 6. Thus, the use of BSF maggot microcapsules can be used as a substitute for commercial feed during the rearing of *R. lateristriata* fish larvae.

Keywords : *BSF Maggot, Development, Growth, Microcapsules, R.lateristriata.*