

EARLY DEVELOPMENT AND EFFECT OF TEMPERATURE
ON INCUBATION TIME OF MARUAN,
Channa striata

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**EARLY DEVELOPMENT AND EFFECT OF TEMPERATURE
ON INCUBATION TIME OF HARUAN, *Channa striata***

BY

NG KENG GUAN

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Abstract

Early development and the effect of temperature on incubation time and hatching rate of Haruan (*Channa striatus*) was studied. Spawned eggs were spherical, slightly transparent, and buoyancy. The diameters of eggs were 1.08 ± 0.06 mm (range 1.03-1.15mm). Newly hatched embryos possess a mean length of 5.917 ± 0.16 mm. Absorption of yolk completed at two days after hatched. However, exogenous stage was evidence much earlier than the exhaustion of yolk. Schooling behavior was observed since the mix stage (endogenous and exogenous). Larvae showed the frequent surfacing, which was the first sign of aerial breathing.

Larvae entered juvenile stage at 15 days after hatched (10.477 ± 0.389 mm). Fins were well developed and rays were presented at each fin. Young stage started around 63 days after hatched (43.822 ± 4.22 mm).

The eggs were exposed to difference temperature (24°C , 26°C , 28°C , and 30°C), with the highest hatching rates was at 28°C . The longest incubation time was at 24°C (32 hours 13 minutes) with hatching rate 64.7% as observed and decreased constantly at 26°C for 27 hours 30 minutes (77.3% hatching rate), 28°C for 23 hours 26 minutes (79.3% hatching rate) and 30°C for 16 hours 18 minutes (77.3% hatching rate). ANOVA one-way test on effect of temperature on incubation time and hatching rate showed a significant difference ($P < 0.05$) in both experiments.

Abstrak

Kajian tempoh pengeraman, kadar penetasan dan perkembangan awal ikan Haruan (*Channa striatus*) dijalankan. Telur yang baru dilepaskan adalah bulat, lutcahaya dan terapung. Diameter telur adalah 1.08 ± 0.06 mm (julat antara 1.03-1.15 mm). Embrio yang baru menetas mempunyai panjang purata 5.917 ± 0.16 mm. Penyerapan yolka lengkap pada dua hari selepas menetas. Namun, peringkat 'exogenous' adalah lebih cepat berbanding kehabisan yolka. Sifat berkumpulan wujud sejak peringkat campuran (endogenous dan exogenous). Larva menunjukkan pernafasan di permukaan air dengan kerap, yang merupakan tanda pertama sifat pernafasan udara (air-breathing).

Larva mencapai peringkat juvenil pada 15 hari selepas menetas (10.477 ± 0.389 mm). Perkembangan sirip adalah lengkap dan ruji kelihatan di setiap sirip. Peringkat muda bermula selepas 63 hari menetas (43.822 ± 4.22 mm).

Telur didedahkan pada suhu berbeza (24°C , 26°C , 28°C dan 30°C) dengan kadar penetasan yang tertinggi berlaku pada 28°C . Tempoh pengeraman yang paling lama adalah pada suhu 24°C (32 jam 13 minit) dengan kadar menetas 64.7%, merosot secara konstan pada 26°C (27 jam 30 minit) dengan 77.3% kadar penetasan, 28°C (23 jam 26 minit) dengan kadar penetasan 79.3% dan 30°C (16 jam 18 minit) dengan kadar penetasan 77.3%. Ujian sehala ANOVA terhadap kesan suhu terhadap tempoh pengeraman dan kadar penetasan menunjukkan terdapat perbezaan bererti ($P < 0.05$) antara sampel.