INTISARI

Pengaruh Aerasi terhadap Kualitas Air dan
Pertumbuhan Udang Vaname (*Litopenaeus vannamei* Boone, 1931) pada
Tambak Intensif Di Kalurahan Karangsewu, Kapanewon Galur, Kabupaten Kulonprogo

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Penelitian ini bertujuan untuk mengetahui pengaruh aerasi terhadap kualitas air dan pertumbuhan udang vaname (*Litopenaeus vannamei*, Boone 1931) pada tambak intensif di Kalurahan Karangsewu, Kapanewon Galur, Kabupaten Kulonprogo. Penelitian ini dilaksanakan pada bulan Desember 2022 sampai Februari 2023. Penelitian dilakukan dengan metode pengamatan langsung terhadap empat tambak yaitu K1, K2, B1, dan B2. Tambak K1 dan K2 memiliki luas ±960 m^2, padat tebar 253 ekor/m^2, yang beraerasi kincir 2 HP; sedangkan tambak B1 dan B2 memiliki luas ±450 m^2, padat tebar 239 ekor/m^2, yang beraerasi *blower*. Pengamatan kualitas air dan pertumbuhan udang vaname dilakukan pada pemeliharaan hari ke 30-68. Parameter yang diamati meliputi bahan organik; kecerahan; suhu; salinitas; pH; oksigen terlarut; alkalinitas; karbondioksida bebas; amonia total; nitrit; dan berat udang vaname yang dianalisis secara deskriptif. Hasil penelitian menunjukkan kualitas air tambak beraerasi kincir 2 HP (K1 dan K2) dan *blower* (B1 dan B2) tidak memberikan hasil yang jauh berbeda. Kualitas air tambak beraerasi kincir 2 HP dan beraerasi *blower* selama pemeliharaan udang hari ke 30 s.d 68 menunjukkan hasil bahan organik berkisar antara 58,1-89,2 mg/l; kecerahan 22-49 cm; suhu 26,9-32,3 ºC; pH 7,23-8,37, dan alkalinitas 119-163 mg/l yang termasuk optimal (sesuai) untuk budidaya udang vaname, sedangkan salinitas 9,8-14,4 ppt; oksigen terlarut 2,64-3,19 mg/l, karbondioksida bebas 0-26 mg/l; amonia total 0,27-3,40 mg/l, dan nitrit 0,04-1,60 mg/l termasuk kurang optimal (kurang sesuai) untuk budidaya udang vaname. Berat, pertumbuhan berat mutlak, dan laju pertumbuhan harian berat udang selama pemeliharaan hari ke 30-68 tambak beraerasi kincir 2 HP memberikan hasil lebih rendah berturut-turut sebesar 3,53 g; 3,87 g; dan 0,10 g/hari dibandingkan tambak beraerasi *blower* yang berturut-turut sebesar 5,11 g; 4,76 g; dan 0,13 g/hari.

Kata kunci : intensif, kualitas air, pertumbuhan,udang vaname

ABSTRACT

The Effect of Aeration on Water Quality and
White Shrimp (*Litopenaeus vannamei* Boone, 1931) Growth of
Intensive Pond at Karangsewu Village, Galur Districts, Kulonprogo Regency

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This research aims to determine the effect of aeration on water quality and white shrimp (*Litopenaeus vannamei*, Boone 1931) growth of intensive ponds at Karangsewu Village, Galur Districts, Kulonprogo Regency. This research was conducted from December 2022 to February 2023. The research was conducted by direct observation of four ponds which are K1, K2, B1, and B2. Ponds K1 and K2 have an area of ± 960 m^2, stocking density of 253 fishes/m^2, which is aerated by a 2 HP paddle wheel, while ponds B1 and B2 have an area of ± 450 m^2, stocking density of 239 fishes/m^2, which is aerated by a blower. Observations of water quality and growth of white shrimp were conducted on the 30th to 68 st day of culture. The observed parameters including organic matter; brightness; temperature; salinity; pH; dissolved oxygen; alkalinity; free carbon dioxide; total ammonia; nitrite; and white shrimp weight were analysed descriptively. The results showed that the water quality of ponds aerated by 2 HP paddle wheel (K1 and K2) and blower (B1 and B2) did not give significantly different results. Water quality of ponds aerated paddle wheel 2 HP and *blower* during shrimp rearing days 30th to 68 th showed the results of organic matter ranged from 58,1-89,2 mg/l; brightness 22-49 cm; temperature 26,9-32,3 ºC; pH 7,23-8,37, and alkalinity 119-163 mg/l which includes optimal (suitable) for white shrimp culture, while salinity 9,8-14,4 ppt; dissolved oxygen 2,64-3,19 mg/l, free carbon dioxide 0-26 mg/l; total ammonia 0,27-3,40 mg/l, and nitrite 0,04-1,60 mg/l including less optimal (less suitable) for white shrimp culture. Weight, absolute weight growth, and daily growth rate of weight shrimp during the 30th to 68 st day of culture of 2 HP paddle wheel aerated ponds were lower at 3,53 g; 3,87 g; and 0,10 g/day respectively than blower aerated ponds at 5,11 g; 4,76 g; and 0,13 g/day respectively.

Key word : intensive, pond, water quality, white shrimp