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EFFECT OF TEMPERATURE ON THE WASTE PRODUCTION OF CATFISH: COMPARISON BETWEEN RUNNING AND STAGNANT WATER SYSTEM

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Abstract
The study was aimed to assess the effect of temperature on the waste production, water temperature and pH of African catfish, Clarias gariepinus (Burchell 1822). Nine months old, 50.00g African male catfish, were divided into two groups, running and stagnant water systems with 100 catfish, respectively. The water volume was constant for both tanks, 0.45m³ with the same aeration, 30 inHg. The catfish were fed twice daily with 56.72g pellet which contained 40% protein. The water samples were collected in the morning (7-8 am) with temperature ranges, 25-27°C (MT) and evening (5-6 pm) with temperature ranges, 30-32°C (ET). The samples were analyzed for ammonia nitrogen, phosphate, nitrate, water temperature and pH. The waste production analysis was done with spectrophotometers and HACH instruments. The results showed no significant difference between both MT and ET in both water systems for ammonia nitrogen, phosphate and nitrate. However, water temperature showed significantly different with higher value for ET in both running (28.61±0.11°C) and stagnant (27.39±0.14°C) water systems as compared to MT. For both MT and ET, stagnant water system showed significantly different with higher value for ammonia nitrogen (30.52±4.57 and 32.40±4.73 mg/L, respectively), phosphate (25.03±3.78 and 24.56±3.29 mg/L, respectively) and nitrate (1.74±0.20 and 2.27±0.29 mg/L, respectively) than running water system. It was concluded that waste production was higher in stagnant than running water system regardless the temperature of data collection.

Keywords: African catfish, temperature, waste products