**Applicability of waste-reared *Hermetia illucens* as an ingredient in the diet of Nile Tilapia, *Oreochromis niloticus***

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This study sought to define the abilities of the Black Soldier Fly Larvae (*Hermetia illucens*) (BSFL) as a nutritional aquafeed replacement for Nile Tilapia (*Oreochromis niloticus*), and to further sustainability by utilizing bioconversion of waste material. An eight-week feeding trial with Nile Tilapia was conducted to determine the nutritional applicability of BSFL reared on dried distiller’s grains with solubles (DDGS) in isonitrogenous and isocaloric aquafeed diets, consisting of partial and total replacement for fishmeal (FM), soybean meal (SBM), and oils. Three diets were formulated to contain 32% crude protein (CP) and 8% lipid, with the Control formulated to derive most of its CP and lipid from fishmeal FM, SBM, fish oil (FO) and soybean oil (SBO). The first formulated test diet (BSFLM) replaced all FM and most of the SBM in the Control with BSFL meal. The second (BSFLM+O) was formulated identically to BSFLM except for a complete replacement of FO with BSF oil (BSFLO). Diets were fed to satiation to triplicate groups of 10 juvenile Tilapia in a recirculating aquaculture system (RAS) (stock density 3.08 ± 0.2 kg/m3). Results revealed statistically significant reduction in feed efficiency, protein efficiency ratio, and hepatosomatic index for BSF-based diet groups; though specific growth rate, condition factor, and intestossomatic index of fish were unaffected. No significant dietary effects on health-related blood parameters of the fish were observed. Despite apparently lower nutritional value than FM, SBM, FO and SBO, this study demonstrated that waste reared BSFL-derived feedstuffs are suitable ingredients for the Nile Tilapia diet.