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Ovarian Recrudescence in African Catfish (*Clarias gariepinus*) Fed Housefly Maggot Meal (Magmeal) Diets

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Abstract

The growth of aquaculture sector during the past two decades has been reported. It is attributed to the progressive intensification of production systems and use of quality feeds, which meet the nutritional requirements of cultured fish. Unfortunately, this trend is challenged by the global fishmeal price which is on the increase. This high cost of fishmeal which affects the cost of fish feed has become a bottleneck for most fish farmers. The need to research into alternative protein sources for the fish feed production has been advocated. It has been reported that food availability is an important factor that affects fish fecundity. Its shortage may cause low fecundity. It also affects ovarian recrudescence. Ovarian recrudescence is the re-occurance of ovulation in an animal. In fish, recrudescence can be defined as an adult female entering a subsequent cycle after induced maturation and ovulation of eggs. This can bring about reduced Inter Spawning Interval (ISI).The current study aims at evaluating the effect of Housefly maggot-meal (magmeal) in ovarian recrudescence of African catfish (*Clarias gariepinus*). A 49-day study was carried out to evaluate the ovarian recrudescence in African catfish (*Clarias gariepinus*) fed with magmeal as an alternative to fishmeal. Twenty-six (26) broodstock (*Clarias gariepinus*) were fed with four diets formulated to contain 41.97±0.23 crude protein (CP). Magmeal was included in the diets from the level of 56 % (Diet 2) to 76% (Diet4). Fishmeal content decreased in the diet with an increase in maggot meal. Six (6) catfish broodstock were fed each experimental diet at 2 % body weight in two portions per day. Results showed that no significant difference ($P < 0.05$) was observed among fish fed all experimental diets for mean weight gain (MWG) and specific growth rate (SGR). The effect of magmeal on the fish recrudescence was investigated histologically. Results suggested that gonads of *C. gariepinus* fed magmeal based diets develop to phase V and VI (spawning and depletion stage) within seven weeks. These results suggest that magmeal enhance gonad development of *Clarias gariepinus* broodstock. Therefore fish feed producers can incorporate magmeal in the production of broodstock feed for quick re-covering of eggs after stripping.

Keywords: African catfish, brood stock reproduction, fish recrudescence, ovulation of eggs

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