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The Viability of Sperm from Death *Clarias Cariepinus* Male Boodstock used in Induced Breeding. Short Communication

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Abstract- The aim of the research was to find an alternative way of getting sperm of *Clarias gariepinus* apart from a living fish which will reduce the cost of live catfish male broodstocks for induce breeding. Dead males broodstocks were bought from Wukari fish market at 5.30pm and were transported to Biological Sciences Fish hatchery in a Polyethene bag and were kept over night in 100litre bowl with water at a level of 80litre. The bowl was not covered in case of jump out. The dead fish sperms were removed carefully and stored in sterilized small bowls containing 0.9% Nomal saline at 7.0am the following day which were later used to fertilize the stripped eggs after a latency period of 8.00hrs (15.30hrs) from hypophysation. The fertilized eggs were spread on the kakabans in a single layer to prevent clumping of eggs in the incubator and flow-through water system was opened for availability of oxygen for the developing embryos. The result revealed that hatching started on the second day after hypophysation at 11.00am. Feeding started two days after hatching with 0.2-0.3mm blue crown feed bought from Jos. The fry survived beyond the experimental period of two weeks from hatching.

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I. Introduction

The trade and economy of a particular country grows bigger due to the availability of fish and fish products in their diets especially where malnutrition is a threat to human development. Fish essential protein contributes a lot in Nigerians populace and human population is inevitably on the increase as well as the demand for fish as source of protein is very high(Solomon and Olawale, 2018). Indeed, fisheries sector over the years have suffered neglect in terms of broodstock and hatchery management for conservation purposes (Birbu'u Kutwal *et al*., 2018). Recently, there has been tremendous increase in the development of fish farming and culture attributed to the increased need for affordable animal protein, especially in the tropics (Davies *et al.,* 2006). Therefore, catfishes of the family Clariidae are increasingly being used for freshwater aquaculture in Africa, owing to several favourable cultural characteristics that enable them survives harsh environmental conditions than other fishes. Despite this, there has been slow awareness about fisheries resources as means of sustainable wealth creation and key in stabilizing any country's economy (Beaumont and Hoare, 2003) as cited by Birbu'u Kutwal *et al*. (2018). Indeed, the increasing population of man and animals depends on the fish and fish products for provision of easily absorbable and utilizable proteins against that from other animals and plants. The sustainability of the fish resources depends on the management of fish broodstocks which in turn make the fish fingerlings availability for out growth to farmers. There used to be wanton destruction of catfish male broodstocks by sacrifizing them for sperm or milt extraction. Birbu'u Kutwal *et al*. (2018); Diyaware *et al*.(2010); Yisa *et al.(2013,* 2016) and Bhushan *et al*.(2018) made surgery operations and suturings on the male broostocks of *Clarias gariepinus*, *Clarias anguillaris*, *Clararias gariepinus, Heterobranchus bidorsalis* and *Clarias batrachus* respectively and all of them reported the successful survival rate of the catfish male broodstocks after the removal of their testes for induce breeding. This of course reduces the unnecessary destructions of the male broodstocks purposely because of breeding.

However, there could be instances where the male broodstocks may not have the sufficient milt for the fertilization, or the milt may not be matured at all after incision or even worstly the male broodstock may die due to inadequate management technicalities. In these cases, this work intend to use sperm or milt of dead fish from the market to fertilize the ripe eggs which will go a long way in salvaging that problem of lack of live catfish male broodstocks use in induce breeding.

II. Materials And Methods

Female broodstocks of *Clarias gariepinus* were bought from a reputable fish farm in Jos and were transported to the Department of Biological Sciences, Fish Hatchery(Laboratory), Federal University Wukari, Taraba State Nigeria in a 50litre jarry can with the top being perforated for easy mixing of oxygen. They were acclimatized for two weeks before the work started. Dead male broodstocks were also bought from Wukari Fish market at 17-18hrs and were also transported in polyethene bags to the same laboratory the previous day for the hypophysation of the live female broodstocks. They were kept over night in a bowl of 100litre without covering the container. The dead males

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were operated at 6.0am to remove the testes and were then kept in a sterilized small bowl with its mouth open which was containing 0.9% Normal saline. The hypophysation was administered at 7.30am the same day and a latency period of about 7-9hrs(13-15hrs) was monitored, which was depended on 29-31°C as revealed by Hogendoorn and Vismans (1980). The injected females were stripped and the eggs flowed out like a stream of water in to sterilized clean bowls and the sperms were removed, sliced with the blade and squeezed for the sperm or milt to come in contact with the eggs. Sterilized birds feather were used to mix the stripped eggs and the milt or sperm thoroughly for fertilization to take place. The Normal saline was added to ease the mixture after which ordinary water was also added to facilitate the fertilization and igniting the stickiness substances of the eggs to attach themselves on the kakabans in the hatchery or incubators for hatching. The eggs were spread gently on the kakabans carefully to prevent their clumsiness on each other where hatching can be affected. A flow-through hatchery was constructed where the eggs were incubated. The water was opened and the amount of the water going in was the exact amount that was going out. The current of the water going inside each incubator depends on the quantity or amount of eggs spread in that incubator. The higher quantity, the faster the current of the water to make dissolved oxygen available.

III. Result

Immediately the milt came in contact with the stripped eggs during mixing with birds feather, fertilization took place while the unfertilized eggs were observed to be whitish. Surprisingly Hatching started around 11.00am (20hrs from fertilization) the following day and the temperature was monitored to be between 29-32°C. Again another shocking finding was that feeding of the fry started at the end of the second day because their yolk was almost 3/4 absorbed at eye observation.

IV. Conclusion

There is an alternative source of sperm or milt of *Clarias gariepinus* from live fish species for induce breeding. Catfish breeders can now use dead male fish broodstocks bought from any market for fertilizing the eggs to be stripped. The cost of *Clarias gariepinus* fingerlings production would be cheap and of course the selling price would also be cheap to farmers and in turn the consumers alike. This will make the availability of fish protein sustained for the mass increase of the human population.

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