

SUTURING AS AN ALTERNATIVE TO SACRIFICING MALE CATFISH IN ARTIFICIAL FISH BREEDING: SHORT COMMUNICATION

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ABSTRACT: *In artificial catfish breeding, unlike other fin fish, as a result of the presence of the convoluted vas deferens attached to the testis, spontaneous release of semen does not occur and hand stripping of the male does not yield any result. Since neither natural nor hormone induced breeding of catfish is capable of mass producing fingerlings needed by large scale fish farms that are progressively emerging in Nigeria, the only alternative for mass production of fish seeds is via artificial propagation. If this option is to be adopted, then male catfish should continually be sacrificed in each hatchery operation involving the catfish. This could drive male catfish into danger of depletion and this would indirectly affect the female population. Usually the male fish is killed and abdomen ripped open to extract the paired testes needed for egg fertilization. At times the fish breeder finds the paired testes not properly ripe to provide milt for fertilization. By the time this discovery is made, the male fish is already dead. In an attempt to prevent this wanton destruction of male catfish, a research that simulated what obtains in human surgery was carried out. In human surgery, the patient is carefully opened up and any vital organ can be extracted or implanted, then sutured back and the patient survives. In this research, 3 x 1 kg male *Clarias gariepinus* brood stock were each incised with a clean razor and the left testis was extracted for egg fertilization and each of the fish sutured back. They were returned to the brood stock pond where the wounds healed and the fish resumed active life without any medication. No casualty was recorded within six weeks of observation.*

KEYWORDS: Catfish, Fish Farm, Catfish Breeding, Fin Fish

INTRODUCTION

Since neither natural nor hormone induced breeding of catfish is capable of mass producing fingerlings needed by large scale fish farms that are progressively emerging in Nigeria, the only alternative for mass production of fish seeds is via artificial propagation. If this option is to be adopted, then male catfish should continually be sacrificed in each hatchery operation involving the catfish. This could drive male catfish into danger of depletion and this would indirectly affect the female population. Usually the male fish is killed and abdomen ripped open to extract the paired testes needed for egg fertilization. At times the fish breeder finds the paired testes not properly ripe to provide milt for fertilization. By the time this discovery is made, the male fish is already dead. In an attempt to prevent this wanton destruction of male catfish, a research that simulated what obtains in human surgery was carried out. In human surgery, the patient is carefully opened up and any vital organ can be extracted or implanted, then sutured back and the patient survives.

FINDINGS

Research Hypothesis

In human surgery the patient is operated on and his vital organ extracted or implanted and the patient survives. The male *Clarias gariepinus* can equally be dissected to extract one of its testes, sutured back and survive.

METHODOLOGY

Three mature male *Clarias gariepinus* each weighing one (1) kg were harvested from a 2 M X 1 M X 1 homestead tarpaulin pond and acclimatized in separate 70 l plastic ponds at Dr. P.C. Egwui's private Homestead Experimentation Center inside Phase II AHOCOL Estate, GRA, Awka, Anambra State, South – East of Nigeria. (Show Plate) After acclimation each of the male *C. gariepinus* was laid upside down on a dissecting table and held tightly by an assistant. The belly was cleaned with cotton wool soaked in spirit. A clean, sharp, unused razor was used for each of them to make a fine longitudinal slit along the position of the right testis. (Show plate). Gently lifting the wall of the stomach with a pair of forceps, a deeper cut was made, while avoiding damaging any of the internal organs. A finger was inserted into the visceral cavity to locate the testis. The finger was used to free the testis from connective tissues that held it and the testis pulled out from the visceral cavity after assuring that it was ripe for egg fertilization. The testis was dried in-between a filter paper and stored for use in artificial fertilization of fish eggs.

By means of a tailor's sewing needle attached to a cotton thread, the horizontal slit made on the fish belly was carefully sutured back (Plates to be shown). The needle with the attached cotton thread was used to pierce one side of the slit and into the other half and the thread pulled across leaving a short length of the thread dangling at the first point of piercing. (Show Plate) This needle was returned to the first half of the slit and the wall of the stomach was again pierced close (about 5 mm apart) to the first point of piercing and into the second half of the slit and the thread was pulled tightly as before. This operation continued progressively until at the end of the slit. As soon as the entire slit had been sutured, the thread was freed by means of a razor leaving the thread dangling at the two ends. The dangling thread at both ends was tightly knotted close to the wall of the stomach to avoid the thread pulling off after releasing the fish to the pond. Cotton was soaked in spirit and used to clean the whole length of the suture. Each fish was gently returned to a separate brood pond. All the study fish were so treated and kept under close observation for six weeks.

RESULTS

First, the treated fish when released to the separate brood stock pond immediately started swimming actively around. However, they refused to accept any feed. When brought out on the second day and examined, each showed serious evidence of healing (Show Plate). On the fifth day, they were returned to the common brood pond where other untreated brood fish were. Surprisingly, both the treated and untreated fish started struggling for feed. It was no longer easy to distinguish the treated from the untreated stock. On the sixth week, the pond was

completely drained to isolate the treated fish. Again it was surprising to observe that the sutured wound had completely healed and the cotton thread completely melted away.

CONCLUSION

From the above findings, there would be no need to sacrifice male catfish in artificial breeding. Rather the same male catfish can live active life to donate its paired testes separately. It could be tried out whether small portions of the testis can be cut off and used in fertilization at reasonable intervals and the fish sutured back. What we tried out was to cut out half of one testis for egg fertilization and sutured it back. Two weeks later we opened the same male and extracted the remaining half and found it very good for another successful breeding exercise.