INDUCTION OF FINAL MATURATION AND SPAWNING OF THE TROPICAL GAR, *Atractosteus tropicus*, USING HORMONAL IMPLANTS WITH GnRH-a

Sergio Hernández-García, Ulises Hernández-Vidal and Wilfrido M. Contreras-Sánchez.

Universidad Juárez Autónoma de Tabasco
División Académica de Ciencias Biológicas
Carretera Villahermosa-Cárdenas Km. 0.5
C.P. 86039, Villahermosa, Tabasco, México
contrerw@hotmail.com

Production of tropical gar fingerlings is limitited by a single spawning season and facility capacity. Therefore, we conducted two experiments to determine if final maturation and spawning can be induced during the spawning season and before it. Natural spawning occurs from July to November. The first experiment was conducted in August and the second one in April; adult fish kept in captivity in our laboratory were used in both experiments. For the first experiment, implant doses of GnRH-a were 0, 150 and 200 ug/kg (ET0; ET150, ET200). In experiment 2 each female received two implants and one final injection; the initial implant had doses of 0, 25 and 50 ug/kg of GnRH-a (EF0, EF25, EF50); the second implant had doses of 0, 12.5 and 25 ug/kg of GnRH-a; and the final injection in all treatments consisted of a resolving dose of 35 ug/kg.

Results indicate that in experiment 1, no significant differences were found among treatments in terms of time of spawning, diameter and weight of eggs, weight and TL of larvae at first feeding ($P > 0.5$). In experiment 2, we obtained three partial spawnings. Results are shown in the Table.

The use of implants with GnRH-a during and before the spawning season can accelerate maturation and induce spawning in some females. Those females that respond to the early induction can be selected for early production of fingerlings and therefore expand the time at which a facility can offer tropical gar juveniles for grow-out.

Table 1. Results obtained in experiments 1 and 2.

	ET-150	ET-200	EF-50 1st implant	EF-50 2nd Implant
Females that spawned (n)	4	5	2	1
Time to spawn (hpi)	14.62 ± 0.36	15.0 ± 0.28	23.79 ± 0.44	27.40 ± 0.0
Fertilization (%)	99.0	99.3	99.5	100
Egg diameter (mm) and weight (mg)	3.16 ± 0.019 17.37 ± 0.42	3.1 ± 0.074 17.7 ± 0.68	2.5 ± 0.8 1.6 ± 0.018	2.6 ± 0.35 1.76 ± 0.022
Eclosion (%)	80.5 (a)	74.0 (b)	85	78
Larvae length (mm) and weight (mg) at first feeding	18.17 ± 0.044 31.95 ± 0.02	18.12 ± 0.061 31.1 ± 0.02	10.7 ± 0.005 282 ± 0.17	10.6 ± 0.08 218 ± 0.22
Final length (mm) and weight (mg)	34.03 ± 0.23 181.9 ± 0.36	32.48 ± 0.20 152.6 ± 0.26	50.1 ± 0.467 350 ± 0.9	40.1 ± 0.57 240 ± 0.7
Survival (%)	62.9	52.5	69.5	93.0