

HORMONE INDUCED SPAWNING  
AND EMBRYONIC DEVELOPMENT OF THE  
RABBITFISH, SIGANUS VERMICULATUS (PISCES: SIGANIDAE)

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A Thesis

Presented to the  
Faculty of the Graduate School  
University of San Carlos  
Cebu City

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In

Partial Fulfillment  
Of the Requirements of the Degree  
Master of Science in Biology

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By

Enrique M. Avila

May 1980

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This thesis entitled, HORMONE INDUCED SPAWNING AND EMBRYONIC DEVELOPMENT OF THE RABBITFISH, SIGANUS VERMICULATUS (PISCES: SEGANIDAE), prepared and submitted by Mr. Enrique M. Avila in partial fulfillment of the requirements for the degree of Master of Science in Biology has been examined and is recommended for acceptance and approval for oral examination.

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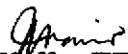
  
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## ABSTRACT

An adult stock of Siganus vermiculatus, captured at sea during early 1977 was maintained in a rubberized canvass holding tank at the laboratory site located at Mag-aba, Pandan, Antique. In September 1977 samples of this brood were isolated to carry out induced spawning experiments with the use of human chorionic gonadotropin (hCG). HCG was administered intramuscularly into each experimental fish. With reference to hormonal treatment, the intra-ovarian oocyte development and milt conditions of both groups were monitored by in vivo methods. Likewise, the spawning behavior and embryonic progression were observed and documented.

Spontaneous spawnings and fertilization of the eggs occurred following ovulation in the fish treated with 500 IU HCG between 17 and 18 hours after the last of a series of injections administered at 24-hour interval. Accelerated gonadal maturation was indicated by progressive changes in the gross morphological characters of the eggs and further thinning of milt. Dominant and aggressive behavior of the female characterized the spawning activities which commenced in the mornings. The experimental fish accumulated 1000 IU HCG.

Newly fertilized demersal eggs measured  $0.52 \pm 0.01$  mm in diameter and each had a narrow perivitelline space and the yolk containing several centrally located oil globules of various sizes. Embryonic development was basically similar to that exhibited in most bony fishes. Atretic eggs retained in the body cavity averaged  $0.57 \pm 0.01$  mm in diameter. Yolk sac larvae averaged  $1.75 \pm 0.14$  mm in standard length, hatched 23 and 24 hours after fertilization in 25-26 ppt sea water at ambient temperature ( $25.9$ - $28.1^{\circ}\text{C}$ ).



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