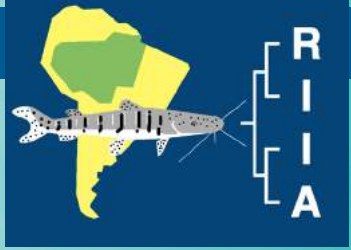


Reproductive Biology and Aquaculture of Pirarucu, *Arapaima gigas*: a review

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This paper reviews the available data on the biology of *Arapaima gigas*, and presents the actual knowledge on the aquaculture of this species. This species has been studied in the early 50's principally for its reproduction and growth characteristics in captivity. *Arapaima* as its close related African *Heterotis* is an air-breathing fish with a lung-like organ derived from the transformed swim bladder. Male and female have unpaired gonads located on left side of the posterodorsal part of the body cavity. The reproductive period takes place during the rainy season and *Arapaima* has a very sophisticated reproductive behavior with courtship, coupling, nest building and parental care to the offspring for more than one month. Female spawns a few times during the reproductive season as oocyte growth is group synchronous. Each reproductive event consists of 10 000 to 20 000 eggs directly laid on the bottom of the nest and 8 days later the fry comes for the first time to the surface to start aerial breathing and feeding on zooplankton, moving constantly in a shoal under constant parental care. During this period the fry is extremely exposed to other fish and bird predation. The most amazing characteristic is the growth performance of this species reaching 10 to 12 kg of weight gain in only 12 months of culture. Nevertheless, aquaculture development of the species is still limited since reproduction and fry production are difficult to manage in captivity and no artificial breeding technique has yet been developed for this species. Despite these difficulties, *Arapaima* aquaculture is progressively growing in Brazil and Peru where feed conversion factors are close to 2 allowing an economically sustainable production. Nevertheless more work is needed to fully understand reproductive behavior and feeding needs to improve and foster *Arapaima* aquaculture.



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