

INTAKE OF NATURAL FOOD AND SUPPLEMENTAL FEED IN MILKFISH *Chanos chanos* (FORSSKÅL) IN COMMERCIALY MANAGED PONDS IN PANAY ISLAND, PHILIPPINES

Christian Lückstädt¹*, Ulfert Focken, & Relicardo Coloso

*University of Hohenheim, Institute for Animal Production in the Tropics and Subtropics, Aquaculture Systems and Animal Nutrition, Fruwirthstr. 12, 70599 Stuttgart, Germany, inst480@uni-hohenheim.de

¹present address: Biomin Innovative Animal Nutrition – Biomin Deutschland GmbH, Gartenstrasse 17, 73119 Zell u. A., Germany, christian.lueckstaedt@biomin.net

The milkfish (*Chanos chanos* Forsskål) is the most important cultured fish species in the Philippines. In terms of quantity, it makes up over 60% of the total aquaculture production (excluding seaweeds) of the country. In 2000, more than 204,000 t milkfish were produced here, nearly 89% of this in brackishwater ponds. A significant part of this production is achieved semi-intensively in commercial fish farms of 1 to 30 ha total pond area. An aquaculture system is defined as semi-intensive if the growth of natural food from the pond is enhanced by fertilization and/or supplemental feed is given. In aquaculture, the quantification of the actual feed intake, especially in the semi-intensive production systems, becomes increasingly important in order to make optimal use of a given feed. These feeds are expensive and, in the case of the fish meal are a limited resource. Researchers from the Philippines suggest daily rates of supplemental feeding of up to 4% BME (body mass equivalent) in semi-intensive milkfish grow-out. However, investigations on the intake of supplemental feed and natural food by milkfish in small experimental ponds suggested that only a part of the supplemental feed was immediately ingested by the fish.

This study evaluated the feed intake of the milkfish (*Chanos chanos* Forsskål) in commercial brackishwater ponds under different management regimes because such data were not available in the literature. Feed intake and growth were compared between a rather intensive culture system in a fish farm of 1 ha pond size and a semi-intensive one, with a total pond area of 30 ha. The feed intake and daily ration of fish were estimated using a mathematical model from Elliott & Persson, used mainly for filter feeders and grazers showing a distinct diel feeding periodicity.

Pond monitoring was conducted on Panay Island (Visayas), Philippines. Fish size and gut content of milkfish in the two milkfish farms were monitored on 3 occasions (Oct. 1996, Mar. 1998, Jun. 1998). A total of 132 milkfish were sampled on both stations during initial and final monitoring (avg. final weight in the intensively managed farm: 334±82 g; semi-intensive farm: 233±88 g). The data indicate a daily ration of 0.71% BME in the intensive farm, corresponding to a direct consumption of only 9% of the supplemental feed. This led to a wastage of fish feed and a lower specific growth rate than in the semi-intensive system where fish were not supplemented and relied only on natural food through fertilization of the pond (specific growth rate SGR: 1.0 for the intensive system vs. SGR: 2.1 for the semi-intensive system).

These results recommend a heavy reduction and optimization, or even abandonment of the use of supplemental feed for milkfish culture, since comparable growth rates can be achieved without any pelleted diets. The reduction in supplemental feeding can reduce the economic costs of milkfish production and may save feed resources for additional animal production. Finally, the complex interactions taking place in milkfish pond farming demand further investigations into alternative culture strategies which should take into account the low intake of supplemental feed observed in these systems.