



T. Telfer

Feed distribution using automatic feeder for cage culture of Atlantic salmon near Bodo, Norway

On-Farm Feeding And Feed Management In Aquaculture

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in collaboration with the Aquaculture
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It is generally accepted that the highest recurring cost in aquaculture comes from feeds. Alone, feed accounts for about 60-80 percent of operational costs in intensive aquaculture, while feed and fertilizers represent about 30-60 percent of the total cost of aquaculture production in semi-intensive aquaculture system. A recent study (Rola and Hasan, 2007¹) carried out in Viet Nam and Thailand in 2006 showed that proportion of the break-even price with the actual price on catfish farms are 85 percent and 69 percent, respectively, while the respective feed costs are about 86 and 81 percent, respectively, of total production costs.

Cultured fish are often overfed because of farmers' perception that more feed will produce more fish without looking at its proper utilization. In many instances, these wrong perceptions are created by feed manufacturers inducing use of more feed than needed. Often high quality feeds (high protein content) are provided to aquaculture system without

assessing the real need and eventually these practices lead to feed wastage. Factors affecting poor utilization of feed resulting in high food conversion ratios (FCR) include the inappropriate selection of feed quality and the feeding strategy. The quality of the dry feeds is influenced by the digestibility of the ingredients, suitability of the formulation to individual cultured species and season, stability of the feed in water, storage and handling of the feed and whether the feed is extruded or pelleted. However, the most important factor that may lead to the wastage of feed is through poor feeding strategy by the farmer leading to overfeeding. The farmer can improve FCR by providing the appropriate amount of feed, maintaining the proper feeding duration, feeding frequency and timing of the feeds. Further, farmers are often influenced by commercial feed manufacturers to use the high quality extruded floating feed without assessing the need and economics of their use. There has been inclination by farmers to use extruded floating pellet probably without attempting to use other management options to best utilize the sinking pellet or farm-made aquafeed. Appropriate feed management techniques and/or improving feed quality may contribute to the appropriate utilization of feed without increasing the cost of production. There has been many studies which indicated that high quality feed may not necessarily provide high return; better feed management does. It has been reported that better feed management can reduce the feed cost to the extent of 15-20 percent.

With the above considerations, the Aquaculture Service (FIRA) have initiated a work programme "On-farm feeding and feed management in aquaculture". The objectives of this work programme is to evaluate the mechanisms available for introducing cost- and ingredient-saving feed management strategies for finfish and crustacean

aquaculture and to develop suitable guidelines for their dissemination to farmers with an ultimate objective of overall reduction in feed use through better feed management. The following activities have been proposed under this work programme: a) a desk study on available scientific information and concepts related to on-farm feeding and feed management, and a synthesis outlining strategies that could lead to feed costs and ingredient saving; b) reviews and country-specific case studies on feed management in selected species/species-groups that are widely cultured; c) an expert workshop to discuss the findings of a and b; and d) technical manuals/guidelines and a regional workshop to disseminate the manuals/guidelines. The species/species-group included in the work programme are Nile tilapia, Indian major carps, striped catfish, whiteleg shrimp, tiger shrimp and freshwater prawn. Country coverage for the case studies are Bangladesh, China, India, Philippines, Thailand and Viet Nam from Asia and Egypt and Ghana from Africa with the anticipation that country coverage may be expanded as appropriate.

In support of the above work programme, FIRA is organizing an expert workshop “On-farm feeding and feed management in aquaculture”, to be held in Manila, the Philippines, from 13-15 September 2010, in collaboration with the Aquaculture Department of Southeast Asian Fisheries Development Center (SEAFDEC/AQD). Experts from FAO member countries, regional organizations and FAO



Feeding striped catfish (Pangasianodon hypophthalmus) with farm-made aquafeed, Mekong Delta, Viet Nam

headquarters and regional offices are expected to participate. The results of the country case studies, invited review papers and synthesis of case studies will be presented at the workshop. Results drawn from these presentations will be examined as basis for drawing future course of action. The workshop will also attempt to review and analyze how lessons from successful feed management practices in salmonid aquaculture may be taken up in tropical aquaculture. Broad thematic areas to be addressed are: a) current feed use and feed management practices; b) selection/choice of feed including information on feed procurement, transportation and storage; c) review of existing feeding strategies; and d) overall assessment of feed management and utilization including identification of research needs and needs for regulatory and legal frameworks. It is expected that workshop proceedings, country case studies, invited review papers, synthesis of the case studies will be published as an FAO Fisheries and Aquaculture Technical Paper “On-farm feeding and feed management in aquaculture”.

Further details of the workshop can be obtained from the author. ■



Preparation of farm-made supplemental feed using locally available feed ingredients, Mymensingh, Bangladesh

¹Rola, W.R. & Hasan, M.R. 2007. Economics of aquaculture feeding practices: a synthesis of case studies undertaken in six Asian countries, pp. 1-31. In M.R. Hasan (ed.). *Economics of aquaculture feeding practices in selected Asian countries*. FAO Fisheries Technical Paper No. 505. Rome, FAO. 205 pp.