

1. Introduction

Farmed fish and crustaceans are no different from terrestrial livestock in that their nutritional well-being and health is based on the ingestion and digestion of food containing 40 or so essential dietary nutrients; depending on the species and developmental status, these nutrients may include specific proteins and amino acids, lipids and fatty acids, carbohydrates and sugars, minerals and vitamins. The form in which the essential nutrients are supplied to the cultured species in turn depends upon its feeding habit and position in the aquatic food chain, with filter feeding species usually only requiring the fertilization of the water body for the *in situ* production of live planktonic food organisms; herbivorous species usually consuming plant-based food items; omnivorous species usually consuming a mixture of plant and animal-based food items; and carnivorous species usually only consuming animal or fish-based food items.

Although the above statement may appear very simplistic, the importance of considering and understanding the natural feeding habits and position of the species in the aquatic food chain cannot be understated; the metabolism and physiology of the target species in the wild having been fine-tuned over millennia to a particular dietary food and nutrient pattern. It follows therefore that the natural food preferences of a species will usually point the way to indicating those food items which are most nutritious and preferred by the cultured species – and open the door for the aquaculture nutritionist to better understand and elucidate the dietary nutrient requirements and feeding preferences of the target species, and by so doing, formulate aquaculture diets or compound aquafeeds, targeted to species needs, which are nutritionally sound, palatable, digestible, elicit maximum growth with minimum wastage, and are cost-effective.

The present technical paper presents an up-to-date overview of the major conventional feed ingredient sources and feed additives commonly used within industrially compounded aquafeeds, including feed ingredient sources commonly used within farm-made aquafeeds, and major fertilizers and manures used in aquaculture for live food production. Information will also be provided on the nutrient composition of common feed ingredient sources, as well as reported usage within industrially compounded and farm-made aquafeeds, and relative nutritional merits and limitations if any. For other useful scientific reviews on aquaculture feed ingredient sources and composition, see Galano, Villarreal-Colmenares and Fenucci (2007), Hasan *et al.* (2007) and Hertrampf and Pascual (2000).