

CHEMICAL ANALYSIS OF SELECTED INDUSTRIAL BY-PRODUCTS AND WASTE MATTER FOR FISH FEED PREPARATION

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Fish meal is the major protein source used in fish feed preparation. However, the limited supply and high demand increase the price of fish meal which in turn raises the cost of production of fish feed. The present study was carried out to evaluate the potential of using industrial by-products and waste matter as alternative ingredients in fish feed in place of fish meal. Ten industrial by-products and waste materials; namely, sweepings of rice flour, “kurakkan” mixture, “kurakkan dosa” mixture, “ulundu” flour and damaged “papadam”, soy meat products, wheat flour noodles, red rice noodles, palm and coconut poonac, were subjected to proximate, mineral and anti-nutrient analyses in order to find out their suitability as fish feed. All selected ingredients were market rejects due to damages during processing or packaging. Proximate and anti-nutrient analyses were carried out using standard methods. Values of crude protein (g/100 g) ranged from 7.69 in “kurakkan” sweepings to 60.91 in damaged soy bean products. The moisture content (g/100 g) ranged from 1.8 in damaged wheat flour noodles to 44.70 in “kurakkan” sweepings and ash content (g/100 g) ranged from 0.45 (damaged red rice noodles) to 11.06 (damaged “papadam”). Crude lipids and crude fibre (g/100 g) ranged from 0.38 (damaged “papadam”) to 9.05 (coconut poonac) and from 0.05 (damaged wheat flour noodles) to 6.47 (coconut poonac) respectively. The values of anti-nutrient factors ranged as follows: saponin 0.06 - 4.41 g/100 g, phytic acid 0.06 - 1.19 g/100 g, tannin 0.38 - 5.62 g/100 g and cyanide 7.42 - 20.93 mg/100 g. The analysed ingredients had trace amounts of Na (0.10 - 0.73 g/100 g), P (0.23 - 0.46 g/100 g) and K (0.00 - 0.12 g/100g). The present study revealed that some of the selected ingredients contain nutrients in sufficient amounts for use in fish feed preparation. The suitability of these ingredients should be further evaluated by carrying out growth trials for fish, due to the presence of anti-nutrient factors in the tested industrial by-products.

Financial assistance from the Project of Transforming University of Ruhuna into international Status (TURIS Grant No. RU/DVC/Pro 149) is acknowledged.