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Investigations on the Nutrient and Antinutrient Content of Typical Plant Ingredients Used as Fish Feed in Small Scale Aquaculture in Yen Chau, Son La Province, Northern Viet Nam

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Abstract

In Yen Chau, Son La Province in Northern Viet Nam, fish farming is a commonly practised activity. In that region the aquaculture products significantly contribute to the supply of animal protein to households. The main cultured fish species in this region is grass carp, which is usually produced in polyculture together with common carp, mud carp, silver carp, silver barb and tilapia. The culture system which prevails here can be classified as semi-intensive.

Plant leaves are the main feed input to the ponds in small-scale fish farming in Yen Chau where the farmers normally feed crop residues, such as leaves from cassava (*Manihot esculenta*), banana (*Musa nana*), maize (*Zea mays*) and bamboo plants. Different grasses and duckweed, both collected from the paddy fields, as well as rice bran and cassava peels are also frequently fed to fish. So far, the nutritional potential of these plant feeds for fish has not been investigated.

Samples of feed items commonly used over the year by six representative fish farmers in Yen Chau were regularly collected and analysed for their chemical composition. Crude protein, fat, moisture, ash, crude fibre and neutral detergent fibre (NDF) content were measured. The gross energy content, as well as the content of antinutrients, such as phenolic substances, tannin, saponin, trypsin inhibitors, cyanogens, and phytase were also determined. The aim of the study was to assess the suitability of these plant ingredients as fish feed and evaluate any possible temporal changes in their nutrient, energy and antinutrient contents during the course of the year.

The results of this study will allow us to get a better understanding of the nutritional quality of the collected plant materials as fish feed. The results of the ongoing analyses will be presented in the full paper.

Keywords: Antinutrient, fish feed, plant composition