

Abstract

With capture fisheries output being threatened by overfishing and dwindling stocks, a long term vision for the supply of fish to the worlds growing population is aquaculture. However, the issue of fish feeds remains one of the challenges facing the aquaculture sector where the sources for most of the ingredients used for fish feed formulation are the same as those used for human consumption. Hence, a strategic focus for aquaculture must be to derive new sources, primarily taken from outside the human food chain, and to derive them mainly from primary producers for example marine algae (seaweeds). However, the use of seaweeds as animal feed is, among others, determined by their heavy metal status. *U. rigida* and *H. opuntia* are some of the seaweed species primarily used in artisanal fishery at the south coast of Kenya as fishing baits and have the potential for use as supplement ingredients in the formulation of fish feed for the widely farmed Nile tilapia. For purposes of determining their safety for use in fish feeds, a study was carried out to determine the concentration levels of Arsenic, Cadmium, Lead and Mercury. The heavy metals were investigated with respect to seasonal and site variations. Seaweed sample analysis was done following Atomic Absorption Spectroscopy. The values obtained were compared to the World health Organization (WHO) recommended levels for heavy metals in food and feed supplements. The concentration levels were significantly different (p