ABSTRACT

This study was conducted to determine the potential use of *Salvinia molesta* D.Mitch. as partial replaced ingredient of fish feed. For this purpose, its phytochemical screening and antioxidant potential was determined. Growth parameters were observed in terms of oxidative stress and histological studies of intestine. For the phytochemical screening it was resulted that the methanolic extract has highest ratio of phytochemicals and devoid of amino acids. Tanins were present in all the four extracts (n-hexane, chloroform, aqueous and methanol). Two types of antioxidant test Total Phenolic Content (TPC) and 2-2-diphenyl-1-picrylhydrazyl radical scavenging activity (DPPH) was conducted. For TPC highest GAE value was of chloroform fraction that was 27.37±0.0003 mg/ml and lowest was observed in methanol and aqueous which was 24.03±0.0006mg/ml. DPPH scavenging activity resulted that at the concentration of 250µl, the aqueous extract of the *Salvinia molesta* displayed maximum value 84.45±0.001 as compared to BHT and lowest was observed in 50µl n-hexane that was 14.47±0.001. An eight weeks trial was conducted in floating cages to evaluate the effects of replacing *Salvinia* in fish diet. To replace the plant-based ingredient in fish feed, proximate analysis was conducted and evaluated that it had a reasonable range of crude protein which can be utilize as fish feed component that was 24.20. After feeding trial growth parameters were calculated based on length and weight and concluded that fish feed with 50% replaced Salvinia showed significant results in terms of percentage weight gain, final weight gain, specific growth rate and percentage survival. Dissection carried out prior to investigate its histology of intestine and found significant results in villi length, villi width and muscle thickness that increased normally. From the all observations, *Salvinia molesta* is highly recommended to use as cheap ingredient of fish feed and also as a source of antioxidants.