Abstract

An experiment was conducted to evaluate the effects of addition protease, phytase and their combination (protease+phytase) on growth, body composition and nutrient digestibility in soybean meal based diet for rainbow trout. Seven diets were formulated by adding protease and phytase enzyme and mix enzyme (1 g kg⁻¹, 2 g kg⁻¹) at two different levels to diets including soybean meal. At the start of the experiment, 45 rainbow trout, *Oncorhynchus mykiss*, (initial mean body weight 88 g) were stocked into each of 21 fiber glass tanks. After 90 days, the highest final weight, specific growth rate and weight gain was recorded in the group fed by adding 1 g kg⁻¹ phytase enzyme to rainbow trout diet. However, there were no significant differences between any of the groups in the growth (*P*<0.05). FCR and PER were not significantly affected by protease, phytase and their combination pretreatment. The addition of 1 g kg⁻¹ protease, phytase and their combination to the soybean meal based diet had no significant improvement on the protein and dry matter digestibility. In addition, none of the supplemented enzymes affected body composition.

**Key Words:** Rainbow trout, Soybean meal, Growth, Protease, Phytase