

Abstract

Today to increase fish resistance against diseases proposed several methods that One of the most efficient of them use of plant material is to stimulate the immune system. This study has been carried out to determine the effect of dietary Sumac powder on growth, survival and gene expression of IL-10, IL-1 β , TNF- α in Rainbow trout (*Oncorhynchus mykiss*) javanailes. 84 individuals of fish with initial average weight of 38 ± 2.65 % were stocked in 12 tanks (300L). Four dietary treatments included treatment 1 (control) that feeding with basal commercial diet without Sumac powder and the other treatments from 2 to 4 were feed with doses containing 0.5, 2 and 5 % Sumac powder of diets, respectively. The experimental trail was carried out in triplicate per treatment for a period of 7 weeks. Fish were feeding (3% body wet weight) as daily at 8:00 and 17:00 hrs. The results of the present study demonstrated that different dietary Sumac powder no effect on growth factors (weight gain, specific growth rate and feed conversion ratio). To measure gene expression levels of fish liver was being sampled and the relative gene expression were evaluated by real-time PCR techniqae. Sumac at all levels was resulted in a significant increase in the expression of TNF- α , IL-10, IL-1 β . According to the results, could be used from sumac as a secretion stimulants TNF- α , IL-10, IL-1 β in the feeding rainbow trout.

Keywords: Gene experession, Cytokine, Immunostimulants, Real time-PCR



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**Effect of dietary Sumac (*Rhus coriaria*) on
survival, growth parameters and gene
expression of IL-10, IL-1 β , TNF- α of Rainbow
trout (*Oncorhynchus mykiss*)**

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