

## Effect of Formic acid, Potassium Di format and Formic acid Nano-Chitosan Solution on survival, growth Indices and body composition of Common carp (*Cyprinus carpio*)

Payvand Maktabi<sup>1</sup>

Hamid Mohammadiazarm<sup>2\*</sup>

Rahim Peyghan<sup>3</sup>

Seied Mohammad Mousavi<sup>4</sup>

Mehdi Zarei<sup>5</sup>

1. PhD student of fisheries, Pardis Campus, Khorramshahr University of Marine Science and Technology, Khuzestan province, Iran

2. Department of Fisheries, Faculty of Marine Natural Resources, Khorramshahr University of Marine Science and Technology Khuzestan province, Iran

3. Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Khuzestan province, Iran

4. Department of Fisheries, Faculty of Marine Natural Resources, Khorramshahr University of Marine Science and Technology, Khuzestan province, Iran

5. Department of Food Hygiene, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Khuzestan province, Iran

\*Corresponding author:

azarmhamid@gmail.com

Received date: 2018/05/19

Reception date: 2018/10/09

### Abstract

This study was conducted to evaluate the effects of formic acid, potassium Di format and formic acid nano-chitosan solution application on different growth factors and body composition of common carp. The experiment was conducted in a randomized complete design with 10 treatments and three replications. In total, 450 common carp fingerlings (10 treatment × 15 fish in each tank × 3 replication) with an initial average body weight (BW) of 16.5±0.5 g were studied. The treatments were included i) three diets supplemented with formic acid nano-chitosan solution levels, ii) three formic acid levels, iii) three potassium Di format levels using commercial feed as 0.25, 0.5, 0.75% of diet and also one treatment as control that were fed with commercial feed without additive. Fish in the experimental treatments were fed for 8 weeks ad libitum. Effects of the treatments on growth performance, and body composition of common carp (*Cyprinus carpio* fingerlings) were evaluated. Results showed that formic acid, potassium Di format and nano-chitosan acidifier as 0.75% level had negative effects on final fish weight and special growth rate compared with control group (P<0.05). On the other hand, the highest amount of food conversion ratio was observed in formic acid, potassium Di format and nano-chitosan acidifier treatments as 0.75% level of diets compared with control group (P<0.05). In this study, the protein and fat contents of the whole body were significantly different among treatments (P<0.05) and the beneficial effect of the diets was observed in the level of 0.25% formic acid nano-chitosan Solution. The results showed that survival rate was not significantly different between the treatments and control group (P>0.05). Therefore, in order to improve the biochemical composition of the body, it is recommended to use 0.25% Formic acid Nano-Chitosan Solution in common diets of common carp.

**Keywords:** Common carp, Formic acid, Potassium Di format, Nano-chitosan, *Cyprinus carpio*.