Abstract:

Anesthesia is an effective management tool in aquaculture, therefore obtaining an appropriate anesthetic drug for rapid anesthesia with long term and safe recovery has always been the concern of fisheries science researchers. The aim of this study is to ingestivate the anesthetic strength of *Lavendula officinalis* essence oil in *Hypophthalmichthys molitrix* in histopathological and blood biochemical factors. This study was carried out in Hamoun International Wetland Research Institute in the University of Zabol in Spring 2015. To this aim, 260 juvenile of silver carp were divided into four groups including a control group and 3 groups with concentrations of 200, 300 and 400 ppm *Lavander* essence oil with a mean weight and length of about 23.55±1.5 g and 15.6±1 cm, respectively and then were anesthetized using the immersion method. The means of temperature, pH and water hardness were recorded as 24±1˚C, 7.6±1.6 and 170m/l respectively. After preparation, the times needed to reach to different stages of anesthesia were recorded in all groups including loss of equilibrium, light anesthesia, regaining equilibrium and complete recovery. In order to determine the possible effects of *Lavander* essence from concentrations at two times (0and 24h after anesthesia), hematology tests were conducted, anzymes of ALP, AST and ALT and histological (sampling of liver, kidney and gills) were treated and after preparing microscopic sections and staining them, these sections were examined by light microscopy. Data analysis showed that the optimal concentration required to induce aneasthesia by *lavander* essence was 300 ppm in silver carp fish at recommended time (maximum time for induce anesthesia 3 minutes). On the other hand, the time for complete recovery of anesthetized fish with this concentration was about 3 minutes. Therefore, it can be concluded that time of anesthesia induction is faster as concentration of anethetic induction increases and complete recovery enhances from anesthesia. also, it did not affect anesthesia with different concentrations of *lavander* on hematological profile and no significant changes in the AST, ALT and ALP was observed ($p<0.05$). Histopathological analysis showed the optimum concentration of 300 ppm with no side effects and indicated that the concentration power of essences can be used without fear of damage.

Keywords:*Lavander* essential oil, Anesthesia, *Hypophthalmichthys molitrix*, Histopathology

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Effect of Lavander (*Lavendula officinalis*) essential oil anesthetic on histopathological and blood hepatic enzymes of Silver Carp (*Hypophthalmichthys molitrix*)

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