

The effect of repeated anesthesia by clove oil on some enzymes and organs of Common Carp(*Cyprinus carpio*)

The need for anesthesia in many research studies is quite tangible particularly about aquaculture. Anesthesia is used for no move, long transitions and surgery in small fish. The medications that used for animal anesthesia as anesthetic in these centers currently, Often expensive and cannot be used in all animals also. MS222 is the only safe composition for use in fish and one of the most comprehensive fish anesthetic for anesthetic drugs. But these drugs are too expensive unfortunately. Therefore clove oil is considered cheap for the fish. In the present study were investigated the effects of repeated anesthesia by used clove oil on enzyme and organs common carp (*Cyprinus carpio*). This study was in aquatic Recirculation system of Hamoon international wetlands institute of Zabol University in spring 2010. For this, 160 juvenile fish common carp were divided into four groups with weighted average 35 ± 1 and length total 14 ± 1 for investigated the effects of repeated anesthesia with clove oil. Groups included a control group, the group of one time anesthesia, the group of tow time anesthesia, the group of three time anesthesia were anesthetized with 100 parts per million doses. Fish for hematology and histology testing were sampled at twice (24 hours after anesthesia and the first 168 hours after anesthesia). With a sampling of brain tissue was examined gills and liver of fish, the fish stage before and after anesthesia and also to measure ASL and ALT in blood serum samples of treated effects of repeated anesthesia with clove oil. Once anesthetied with clove oil vasodilatation gill filaments, the only way typical histopathologic picture of gill sections that this phenomenon is considered physiological conditions and for compatibility fish respiratory center depression occurred. After once anesthesia were not observed any pathological changes in liver, gills and brain. But after anesthesia of the second and third turns, histopathological and enzyme changes were observed significant. Although the plant extract and parse it easily takes place and also to be negligible once the anesthetic effects on the tissue and blood factors, but repeated 100 parts per million minimum anesthetic concentration for 48 hours is not recommended.

Keywords: Clove oil, Repeated anesthesia, Common carp, Histology, Enzyme



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