Effect of hydroalcoholic extract of *Myristica fragrans* and white pepper *Piper nigrum* as an anesthetic agent on blood indices of Common carp (*Cyprinus carpio*)

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Abstract

The present study was done in 2019 to investigate the effect of nutmeg hydroalcoholic extract and white Piper nigrum hydroalcoholic extract in amounts of 2, 4, 6, 8 and 10 ml per liter for anesthesia 72 carp with a medium weight 34/45±3/33 grams and its effect on some blood indicators were examined. For this purpose, for each extract, 30 fish in 5 treatments and a total of 60 fish in 10 treatments and a group of 12 fish as a control were not affected by any of the extracts. Blood samples were taken from the fish's heart during anesthesia and 24 hours after the fish regained consciousness, and blood parameters including white and red blood cell counts and hemoglobin and hematocrit levels were measured in the fish's blood. The time of loss of balance (onset of anesthesia), complete anesthesia, and time of return of consciousness showed a significant difference. The average number of red blood cells, hemoglobin, and hematocrit in anesthesia with the nutmeg hydroalcoholic extract during anesthesia and 24 hours after anesthesia were not significant compared to the control group, but there was a significant difference in the amount of white blood cells 24 hours after anesthesia. In common carp fishing with white pepper hydroalcoholic extract, it was found that the mean number of red blood cells during anesthesia and 24 hours after anesthesia was not significantly different from the control group, but in the number of white blood cells 24 hours after anesthesia and Significant differences were observed in hematocrit and hemoglobin during anesthesia compared to the control. Due to less changes in blood factors in anesthesia with nutmeg extract, this substance can be used as a more suitable substance for anesthesia.

Keywords: Common carp, nutmeg hydroalcoholic extract, Pepper-white hydroalcoholic extract, anesthesia, Blood indicators.