

THE INFLUENCE OF "BROVERMECTIN GRANULATE" AND "AVESSTIM" ON PRODUCTS LEVEL OF LIPID PEROXYGENATION AND ACTIVITY OF ENZYMES OF ANTIOXIDANT SYSTEM IN HEPATOPANCREAS OF YOUNG OF THE YEAR SILVER CARP DURING DIFFERENT INVAZIES

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There is data about on influence of antiparasitic drug "Brovermectin granulate" and "Avesstim" on the level of products of lipid peroxygenation and antioxidant system in hepatopancreas of young of the year silver carp during different invazies. The research was conducted at fish state enterprise "Rybgosp Galitsky" (now the LLC "Rybgosp" Burshtynskyy") of Rogatyn region of Ivano-Frankivsk district and FF "Dobrotvirsky fish factory" of the Kamianko-Buzk region of Lviv district, located at warm waters of heat sink of Burshtyn and Dobrotvirskaya thermal electric power stations. The same year silver carp (with a body weight of 45-47 g) were selected for the studies, affected by *Dactylogyrus hypophthalmichtides*, *Gyrodactylus hypophthalmichtides* and at the same time by both parasites.

It was found tha the same year silver carp, infested by *Dactylogyrus hypophthalmichthias*, *Gyrodactylus hypophthalmichtides* and mixed invasions, after treatment "Brovermectin granulate" the level of TBC-products in hepatopancreas decreased by 20,2; 21,9 and 19,1 %, diene conjugates – by 16,5; 18,1 and 17,6 % at $P<0,001$ in all cases and hydroperoxides – by 18,3 ($P<0,001$); 18,3 and 21,4 ($P<0,01$) respectively. The same timethe use of drugs "Brovermectin granulate" and "Avesstim" decrease of the level TBC-products and diene conjugates in hepatopancreas of experimental fish in all cases also, it was reliable ($P<0,001$) and was respectively 40,0 and 28,0; 41,7 and 27,8 and 41,8 and 33,3 %. Concerning the content of lipids hydroperoxides in hepatopancreas treated fish, its decrease was probable only in fish affected by *Dactylogyrus hypophthalmichtides* (13,8 % at $P<0,05$) and in fish infected at the same time by both pathogens (35,1 % at $P<0,05$).

After use of the above-named drugs the activity of enzymes of antioxidant protection in the hepatopancreas of the same year silver carps increased. However, it should be noted that in fish affected by *Dactylogyrus hypophthalmichtides*, valid ($P<0,001$) only activity of superoxide dismutase increased by complex use of "Brovermectin granulate" and "Avesstim". In case of damage by hydroactylics, the activity of superoxide dismutase in hepatopancreas of fish, which was infected only "Brovermectin granulate", probably ($P<0,05$) increased by 6.3 %, and for the use of the complex of drugs – by 33.3 % ($P<0,001$). By mixed invasion, as well as for monoinvasia, in hepatopancreas the same year silver carp after invasion of both drugs

observed an increase in the activity of all subject enzymes, and in all cases it was reliable: the activity of superoxide dismutase – by 38,3 (P<0,001), catalase – by 11,1 (P<0,05) and glutathione peroxidase by 22,7 % (P<0,05). Thus, the use of the drug "Brovermectin-granulate" for monogeneous of the same year silver carps has a lesser impact on the biological balance in the system lipid peroxygenation and antioxidant system than it is simultaneous application with an immunomodulator "Avesstim".

Keywords: THE SAME YEAR SILVER CARP, *DACTYLOGYRUS HYPOPHthalmichtidi*, *GYRODACTYLUS HYPOPHthalmichtides*, *HEPATOPANCREAS*, TBC-PRODUCTS, DIENE CONJUGATES, HYDROPEROXIDES, LIPID PEROXYGENATION, CATALASE, GLUTATHIONE PEROXIDASE, "BROVERMECTIN GRANULATE" AND "AVESSTIM".