

**3.23P.7 Physiological performances of common carp (*Cyprinus carpio*) are more impacted by tertiary Cu/Cd/Zn metal mixture at high temperature** M. Pillet, La Rochelle Université / Littoral ENvironnement et Sociétés; G. Castaldo, University of Antwerp / Biology; E. Rodgers, The Australian National University / Research School of Biology; V. Poleksic, University of Belgrade / Faculty of Agriculture; B. Raskovic, University of Belgrade / Institute of Animal Science; L. Bervoets, R. Blust, University of Antwerp / Biology; G. De Boeck, Systemic Physiological and Ecotoxicological Research (SPHERE), University of Antwerp / Department of Biology (SPHERE Research Group). Metal contamination of the aquatic environment is problematic due to the bioaccumulative, non-biodegradable and toxic properties of these elements. Several studies have demonstrated the impact of single metal exposures on the physiological performance of fish but their results are sometimes contradictory, with metals showing different effects according to the concentration used and/or the duration of exposure. Moreover, these experiments were done on single metal exposures and rarely looked at the impact of combined factors. In our study, we investigated the combined impact of tertiary metal mixture (Cu/Cd/Zn) and temperature on the physiological performances of a fish model species, the common carp *Cyprinus carpio*. At 10°C and 20°C, fish were subjected to Cu/Zn/Cd mixture exposure at concentrations representing 10% of their 96 h LC<sub>50</sub> (Cu = 4.8 µg.L<sup>-1</sup>; Cd = 2.9 µg.L<sup>-1</sup> and Zn = 206.8 µg.L<sup>-1</sup>) for 12 hours, 1 day, 3 days and one week. Their standard (SMR) and maximum metabolic rate (MMR) were measured, aerobic scope (AS) was calculated and hematocrit, metal accumulation (Cu, Cd and Zn) and tissue damage in the gills were analyzed. Our results prove that temperature has a more profound effect than the metal mixture on the fish performance, especially at this sublethal concentration. Aerobic scope, MMR and SMR are elevated at 20 °C. Standard metabolic rate and hematocrit content were the only parameters affected by the metal mixture treatment and increased after 3 days of exposure at 20°C, demonstrating that the fish are more impacted by the metal mixture at the higher temperature. Finally, the accumulation of metal (especially Cu and Cd) in the gills during the exposure to the metal mixture reflect the variation of the SMR observed at 20 °C. To conclude, these results, and the absence of lactate accumulation, indicated that common carp can cope with these levels of metal pollution during short-term exposure.