The Turkish Journal of Occupational / Environmental Medicine and Safety

Vol:2, No:1 (1), 2017 Web: http://www.turjoem.com ISSN : 2149-4711

# P170. COMBINED EFFECT OF SUBLETHAL CONCENTRATION OF ATRAZINE WITH THREE DIFFERENT INSECTICIDES ON *GAMMARUS KISCHINEFFENSIS* SCHELLENBERG, 1937

Özlem DEMİRCİ, Kemal GÜVEN, Dilek ASMA, Serdal ÖĞÜT

Science Faculty, Department of Biology, Dicle University, Turkey
Science Faculty, Department of Biology, Inonu University Turkey
School of Health, Department of NutritionandDietetics, Adnan Menderes University, Turkey

Today all living creatures live in "an ocean consisting of chemicals". Therefore, combined effects of insecticides and herbicides that frequently used together in natural areas are important. This study aims to investigate the toxic effects of herbicide Atrazine (ATR) with insecticides indoxacarb (IND), thiamethoxam (THI) and endosulfan (END) mixture on Gammarus kischineffensis.

Firstly, organisms were exposed to 1/100 LC50 value that have been determined during 96-h. We used Catalase (CAT), superoxide dismutase (SOD), glutathione reductase (GR) glutathione S-transferase (GST) and acetylcholinesterase (AChE) activities as biomarkers. Integrated Biomarker Response (IBR) values were calculated for combining all assayed biochemical marker responses into one general stress index.

Biochemical analysis indicated that; enzymes activities in the mixture groups of atrazine and indoxacarb reduced significantly. The combined treatment of atrazine and thiamethoxam was caused an antagonistic effect on the biomarkers. The effect of endosulfan and atrazine mixture caused an increase in enzyme activities.

*This study supported by The Scientific and Technical Research Council of Turkey (TUBITAK Proje No: 111T661) and Dicle University Research Fund (Project no:12-FF-87)*

* ozdem22@gmail.com