

USE OF PLANARIANS AS BIOINDICATORS OF WATER QUALITY USING SURVIVAL ANALYSIS

Edimar Izidoro NOVAES¹
Thiago Gentil RAMIRES²
Miriam Harumi TSUNEMI¹
Edwin Moises Marcos ORTEGA²

- **ABSTRACT:** *In literature the use of planarians as bioindicators of water quality is discussed, because differently by classic toxicology tests, the animals are able to capture long term exposition effects. Currently, one of techniques to verify the water quality with the use of planarians is performing the comet assay. We propose a new methodology to verify the water quality by accompany lifetime planarians on different aquatic environments. Water of in the present study we used data obtained from a petrochemical company that uses Jaguari river on its production process. Survival Analysis was used to compare the levels of toxic pollutants on different aquatic environments. We also propose a regression model about planarian lifetime at different places from which the water samples were collected. The new proposed method presented an efficient and low cost way to use planarians of *Dugesia Tigrina* specie as water quality bioindicators.*
- **KEYWORDS:** *Dugesia Tigrina; survival analysis; bioindicators.*

¹ Universidade Estadual Paulista "Júlio de Mesquita Filho" - UNESP, Instituto de Biociências, Departamento de Bioestatística, CEP: 18618-970, Botucatu, São Paulo, Brasil. E-mail: enmatematica@ibb.unesp.br, mtsunemi@ibb.unesp.br

² Universidade de São Paulo - USP, Escola Superior de Agricultura "Luiz de Queiroz" - ESALQ, Departamento de Ciências Exatas, CEP: 13418-900, Piracicaba, São Paulo, Brasil. E-mail: thiagogentil@usp.br, edwin@usp.br