

mg L⁻¹, 5.0 mg L⁻¹, 10.0 mg L⁻¹, 20.0 mg L⁻¹, 30.0 mg L⁻¹ and 50.0 mg L⁻¹ respectively, comparing to the initial concentration, while *D. tertiolecta* grew approximately 337%, 300%, 215%, 203%, 196% and 232% at the same concentrations respectively. The pigments productions followed the trend of the growth curve for both species proving that the pollutants had a significant effect on the cell density but not on the pigments production. It was observed that *T. gracilis* is more sensitive to Zn contamination than *D. tertiolecta*. The zinc possibly acts in different metabolic vias and systems in each species, with population reflex when exposed to the same Zn concentration. The results of this study are an important step toward identifying the risk of trace metals to different marine organisms and understanding of their ecological effects.

FP064 Evaluation of toxicity and color reduction of Reactive dye Yellow 160 and Red BG-3B, and textiles effluents after treatment by electron beam.

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Textile effluents are always colored due to the amount of dyes lost during dyeing processes. The low biodegradability and high solubility makes these compounds (reactive dyes) difficult to be enough removed by conventional treatment processes. The objective of the present study is to assess toxicity of Reactive dye Yellow - 160 and Red BG-3B as well as raw effluents containing such dyes. Acute toxicity tests were carried out with reference aquatic organisms: *Vibrio fischeri* bacteria and *Daphnia similis* microcrustaceans. After this, the effluent is also submitted to EBI treatment (irradiation at electron beam accelerator) for reducing color, with 0.5 kGy to 20 kGy doses. 100% of daphnids survived at 1g.L⁻¹ of RY-160, and for Red BG-3B (C=0.564 g.L⁻¹) EC 50% (48h) = 69.0 ± 0.66. Raw textile effluent with dye RY-160 resulted in EC 50% lower than 2% for both organisms (*D. similis* EC 50% (48h) = 1.74 ± 0.53 and 0.6 ± 0.29, *V. fischeri* (15 min). For raw textile with Red BG-3B: *D. similis* EC 50% (48h) = 6.73 ± 0.72. The EBI treatment was effective for color removal, efficiency superior to 90% at 10 kGy. The data demonstrated the importance of evaluating not only dyes but also the effluent, since it has several additives that contributed to the high toxicity.

FP065 Resistance of Escherichia coli strains isolated from beaches, of Santos and São Sebastião (SP)

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The disordered occupation of coastal areas generates the discharge of effluents, which can carry several pathogens, being a serious risk to public health and to the environment. Effluents from selective sites and, without appropriate treatment, can increase the distribution and the frequency of resistant bacteria. Besides, the increase of the population in coastal regions during the high season elevates the organic discharge, especially in regions of beaches, raising the risk of exposure of bathers. *Escherichia coli* are bacteria of *Enterobacteriaceae* group, and are mostly harmless. However, some can cause serious infections, being a serious risk to public health. During the last decades there was an increase in antibiotic resistance, especially in *Enterobacteriaceae* group, becoming a worldwide concern. The β-lactamic antibiotics, chiefly the carbapenem group, have been used as one of the last alternative to multidrug-resistant bacteria. Thus, bacteria resistant to them are of high concern to public health. The present study aimed to isolate and identify strains of *E. coli* isolated from waters from two sites, and verify the resistance profile of the isolated strains. Water samples were collected at 5 points near to Port of Santos (S), and 5 points at Araçá Bay (A), using sterile flasks. Was performed Membrane Filter Technique to evaluate the water quality. The samples were inoculated in MacConkey Agar and strains characteristic of *E. coli* were isolated. The following antibiotics were tested by Kirby-Bauer disc diffusion method: Ertapenem, Meropenem, Imipenem, Amoxicillin + Clavulanic Acid, Cefepime, Ampicillin, Ciprofloxacin, Tetracycline, Gentamicin and Fosfomicin. The CLSI guideline was used to the susceptibility testing. Santos samples showed a higher prevalence of resistant strains, especially when compare antibiotics commonly used, such as AMP (S: 52.6%; A: 45%) and CIP (S: 47.6%; A: 0%). Araçá Bay showed lower rates of resistance, but to AMC, were 89% of the strains were resistente. Only one strain was resistente to the carbapenems, while 3 strains were resistant to Fosfomicin. The strains had a higher resistance in Santos, probably due to anthropization and the presence of Port of Santos, that is the largest and the busiest

port of Latin America. Antibiotics that are commonly used in medicine worldwide, such as amoxicillin and ampicillin, showed a higher prevalence of resistance, showing a worrying risk to public health and environment

Neotropical Ecotoxicology and Conservation: Legacy and Emerging Pollutants in the Neotropics

FP066 A vision of Anthropocene from the evaluation of metals and others geochemical parameters in a sediment core of Santos and São Vicente Estuary

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The Anthropocene can be considered a scientific terminology that may be proper to designate the potential beginning of a new geological era dominated by the everlasting and growing impact of humanity on nature. After Industrial Revolution (18th century), was observed a strongly increase of trace metals in estuarine and coastal environments, mainly from industrial effluents, discharge of sewage and air pollution, which consequently interfere in the quality of sediments. The Santos and São Vicente Estuary, located in the central portion of the coast of São Paulo state, is a powerful example of water and atmospheric pollution caused by human activities in coastal environments. The aim of this work was to understand the anthropogenic modifications of the area along the 20th century from the evaluation of several geochemical parameters. To that end, the levels of metals (Al, As, Cr, Cu, Fe, Mn, Ni, Pb, Sc, V, e Zn) were measured by inductively coupled plasma optical emission spectrometry (ICP OES). Moreover, others geochemical parameters were determined, such as, sediment granulometry, total organic carbon (TOC), δ¹³C, δ¹⁵N, and three environmental quality indicators were obtained. The results showed that since 1950s, a majority of metals had a tendency of enrichment toward the top of the core. These highest values near the surface could be associated with the vast process of urbanization and industrialization which affects Santos and São Vicente Estuary since that decade.

FP067 Acute toxicity of glyphosate-based herbicide on the freshwater prawn Macrobrachium potiuna (Müller 1880) (Decapoda: Palaemonidae)

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Glyphosate-based herbicides (GBH), in especial the Roundup® formulation, are the most widely used herbicides in crops worldwide. Even though, glyphosate inhibits exclusively the enzyme 5-enolpyruvylshikimate-3-phosphate synthase (EPSPS) involved with the metabolism of essential amino acids in plants, is reported that can cause cell damages and mortality in aquatic animals. GBH can enter in aquatic ecosystems by direct application to control aquatic plants, drifting, leaching and surface runoff from the agricultural areas. Acute toxicity of glyphosate has already been estimated for some aquatic invertebrate and vertebrate organisms from temperate climates, but little is known about the acute effects of GBH in tropical freshwater species. *Macrobrachium potiuna* is a small tropical palaemonid with wide distribution, occurring in Brazil, from the State of Bahia to the State of Rio Grande do Sul, and is an important component in the trophic chain of freshwater environments. Thus, the aim of this study was to determinate the acute toxicity of the Roundup® WG herbicide on the freshwater prawn *M. potiuna* by calculating the 96 hours LC₅₀. The assays performed according to the USEPA guideline test 2003. Five concentrations of the herbicide and one control group (0.0, 26.5, 46.5, 66.5, 86.5, 106.5 mg/L) were used in aquaria (6 L) filled with 3 L of dechlorinated water. Six prawns (average size of 26 mm) were exposed at each Roundup® WG concentration in triplicate. Mortality of prawns was monitored daily for the period of 96 hours. The calculation of the LC₅₀ was performed in the PriProbit software. The value of the 96 hours LC₅₀ for *M. potiuna* was 85.54 mg/L of Roundup® WG with 95% confidence limits of 70.38-119.08 mg/L. There was no mortality in the control and in the 26.5 mg/L concentration. The mortality of the prawns was observed from the concentration 46.5 mg/L. To the best of our knowledge, this is the first report of acute toxicity of Roundup® WG in a species of the genus *Macrobrachium*. The present study reveals that specific concentrations of the herbicide Roundup® WG can cause mortality in non-target organisms. Despite the mortality of prawns in high herbicide concentrations, further studies are needed to evaluate the sub-acute toxicity of Roundup® WG in this species, which could be used as biomonitoring species.

FP068 Adverse effects promoted by a commercial formulation of the insecticide Fipronil in gill biomarkers of sábalo (Prochilodus lineatus)