Toxetamol: Paracetamol Ecotoxicity Evaluation Using *Daphnia magna*

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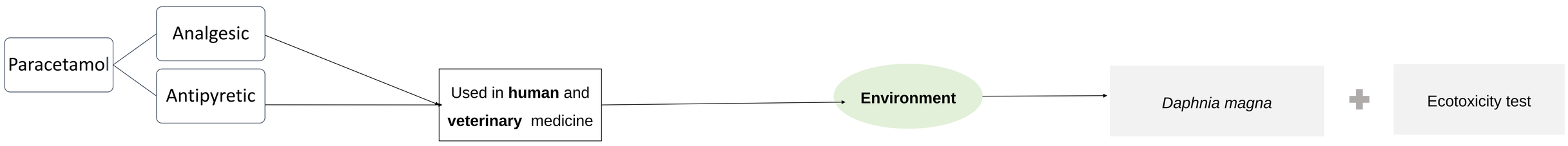
Introduction



Materials and Methods

Microalgae *Raphidocelis subcapitata* + Organic Additive → Better growth

1. Maintenance of *Daphnia magna* culture

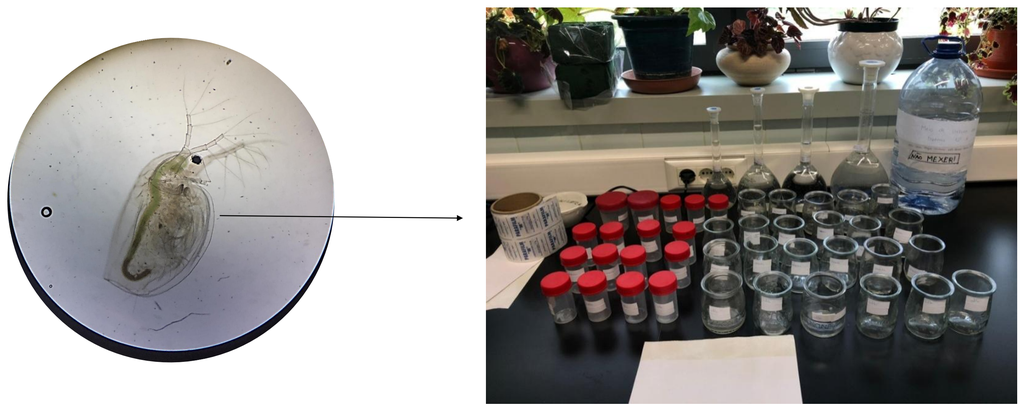


Figure 1. Culture of *Daphnia magna* per flask

2.3 Ecotoxicity Test for 21 days

2. Concentrations of Paracetamol

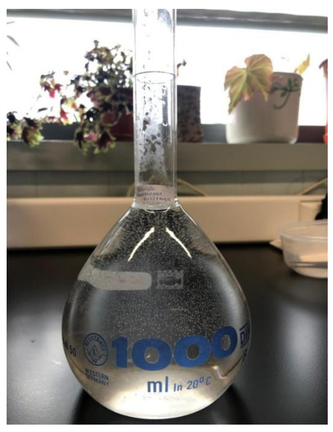


Figure 2. Stock-solution of Paracetamol

Results

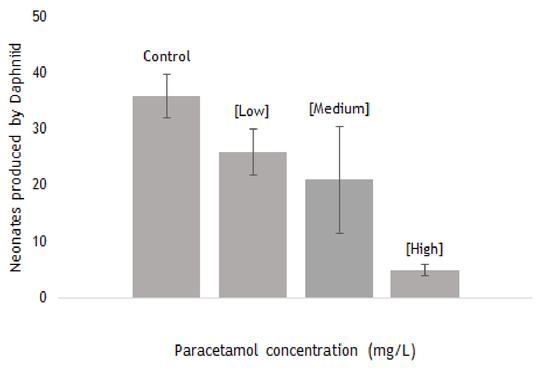


Figure 3. Representation of the number of neonates according to paracetamol concentrations. Control- No paracetamol was added; Low- 0,000484 mg/L; Medium-0,00484 mg/L; High- 0,00968 mg/L

Discussion and Conclusions

- This study demonstrated that the exposure to these concentrations of paracetamol creates a decrease in *Daphnia magna* reproduction.
- When using the higher concentration of paracetamol it is possible to observe that the number of neonates produced by Daphnia magna decreases when compared to other concentrations.
- It is shown that there is a very specific effect of Paracetamol on the reproduction rate of D. magna.
- The presence of pharmaceutical residues for human use in waters represents a serious environmental problem.
- The ability of Paracetamol to change the characteristics of many organisms can lead to the extinction of several species.
- This project evaluated the effect of the species Daphnia magna after chronic exposure to this drug.
- It was found that Daphnia magna is a species very sensitive to the presence of Paracetamol.
- In the future, it is important to give more importance to these problems since the demand for other drugs is increasing and, consequently, the contamination of aquatic environments will also increase.

References

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