Effectiveness of 2,4-D phytoremediation

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INTRODUCTION[1]

Plectranthus neochilus

Traditional medicine uses

Phytoremediation

→ **Tea**

Aqueous waste: water + 2,4-D
(2,4-dichlorophenoxyacetic acid of Aminol formulation)

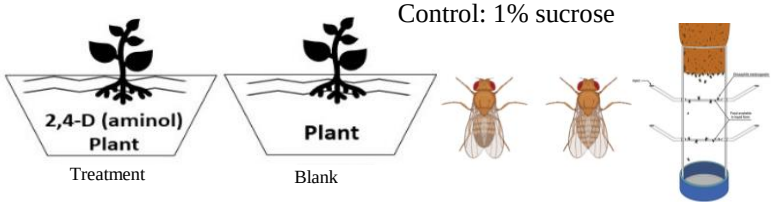
OBJETCTIVE

This study aimed to verify the *P. neochilus* tea toxicity and water toxicity (aqueous waste) after 2,4-D phytoremediation.

METHODOLOGY

Drosophila melanogaster group (n=20) – **tea toxicity**

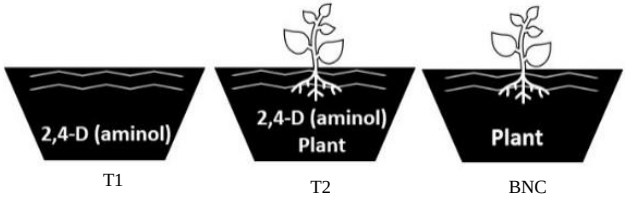
Control: 1% sucrose



Allium cepa – roots growth (cm)
Aqueous waste

Controls:
PCG - glyphosate
PC2,4-D - 2,4-D 0.604 g/mL
NC – distilled water

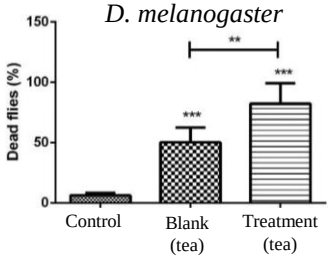
Artemia salina (n=30) LD_{50}
(0.1; 1; 10; 100; 500 µg/mL of **2,4-D**)



RESULTS AND DISCUSSION

Tea

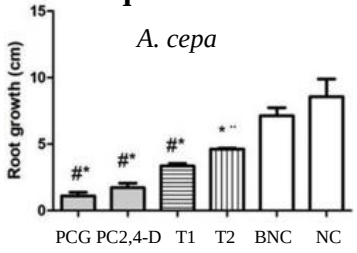
D. melanogaster



* significance concerning the control group and between the blank and treatment groups.

Aqueous waste

A. cepa



\# significance concerning the BNC;
* significance concerning the NC;
¨ significance concerning the PCG.

A. salina LD_{50}
5.6 µg/mL

2,4-D detection (aqueous waste)

T1: 5.18 µg/mL
T2: 4.42 µg/mL

CONCLUSION

❖Tea consumption after phytoremediation is not safe. However, phytoremediation proved its efficiency by decreasing the toxicity of the aqueous medium.

REFERENCE

[1]Ramborger, BP. Goularte, CAO. Rodrigues, DT. Gayer, MC. Carriço, MRS. Bianchini, CM. Puntel, RL. Denardin, ELG. Roehrs, R. The phytoremediation potential of Plectranthus neochilus on 2,4- dichlorophenoxyacetic acid and the role of antioxidant capacity in herbicide tolerance, Chemosphere 188 (2017) Pages: 231-240