# Olive husks biochar application in microbial remediation of pyrene polluted soil: a possible win-win solution

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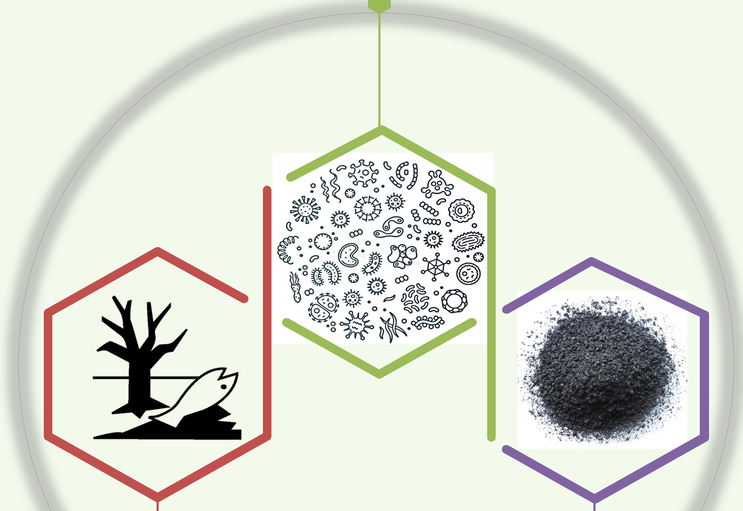
Bioremediation technologies are efficient in situ soil remediation processes, widely considered as a cost-effective and eco-friendly approach.



Polycyclic aromatic hydrocarbons are a large group of pollutants, widespread in the environment, soil included, and extremely toxicity for human and environmental health.

Biochar is currently considered an excellent soil conditioner and its incorporation into soil seems to promote PAHs adsorption and to interact positively with soil microorganisms.

**In this study we assess the efficacy of biochar as promoting substrate for microbial remediation techniques**

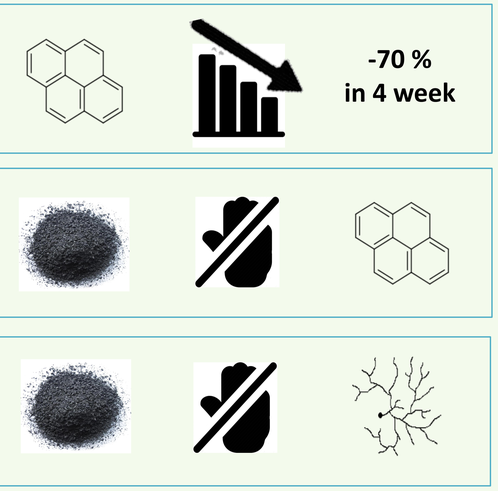
## BIOAUGMENTATION TEST

pyrene is the model molecule for the family PAHs

biochar from slow pyrolysis from olive pomace

*Trichoderma harzianum* exogenous microorganisms

Biochar was able to stimulate the *T. harzianum* growth;
*T. harzianum* does not display a distinctive ability in degrading pyrene.



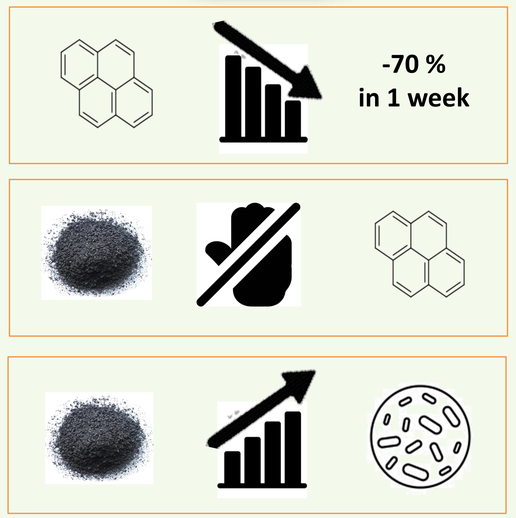

soil endogenous microbial community

pyrene is the model molecule for the family PAHs

biochar from slow pyrolysis from olive pomace

## BIOSTIMULATION TEST

In both the tests biochar does not interfere in Pyrene adsorption




Biochar was able to stimulate the soil endogenous microbial community growth; Pyrene concentration was reduced of about 70% in 1 week.