



Effects of sound in plants development

Possible agricultural and biotechnical innovations



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Bibliographic research and identification of gaps of knowledge regarding the role of sound for plant development.

Studied emission sources



Test medium

Urban and agricultural environments

Rural environment

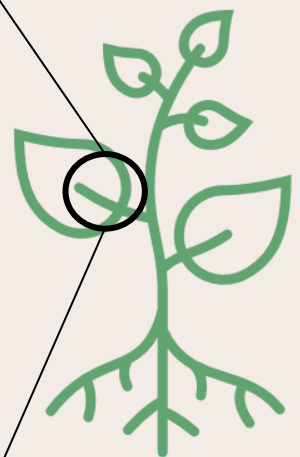
Perceiving sound from multi sources allow plants to better adapt to their environment

Mechanisms in play

For sound reception

- Mechanoreceptors in their tissues
- Changes in calcium concentration
- Flower as sound receptive organ

The mechanisms in play for the perception of sound seem to be consensual, but research to validate if plants intentionally emit sound and how remains to be carried out.



For sound emission

- Xylem cavitation
- Agitation of the organelles (cells)



Effects on...

Recipient plant

- Genes expression
- Enzyme activity
- Pollen release
- Plant growth
- Disease resistance
- Sweeter nectar



Emitting plant



Sound triggers biological mechanisms to different levels of plants, we still don't know if plants have any reasons to emit sound

Fields of application



Reoxygenation of cities
Urban planification :
Impacts of city noises on plants



Increase productivity
Alternative to pesticides
Drought control, disease resistance



Danger warnings
Better adaptation to plant environment

The use of sound on plants is a way to sustainably innovate thanks to the natural capacities of plants