Improving crop resilience through plant microbiome

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SOILS: WHERE FOOD BEGINS

Global Symposium on Soils for Nutrition | 26-29 July 2022

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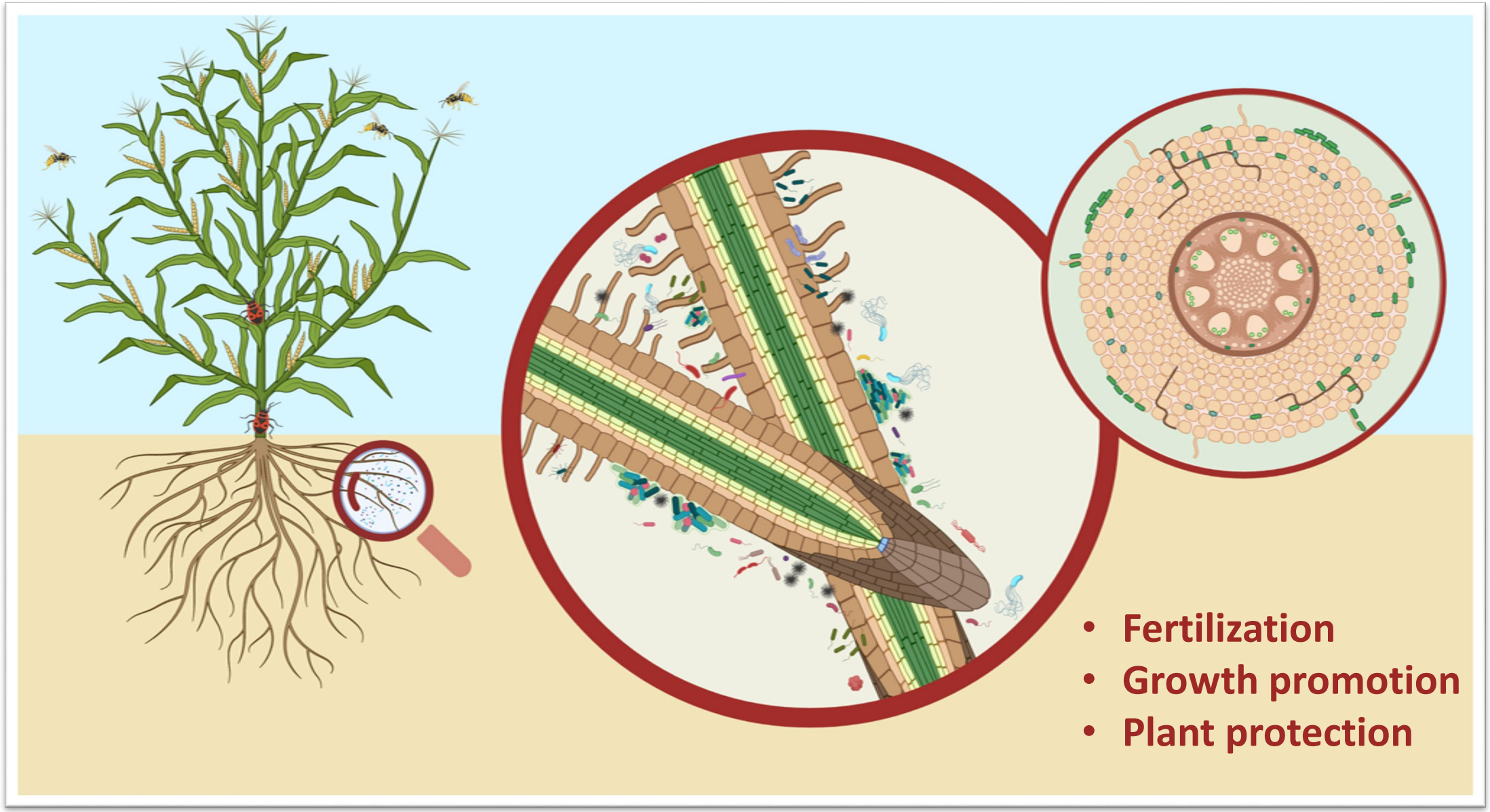
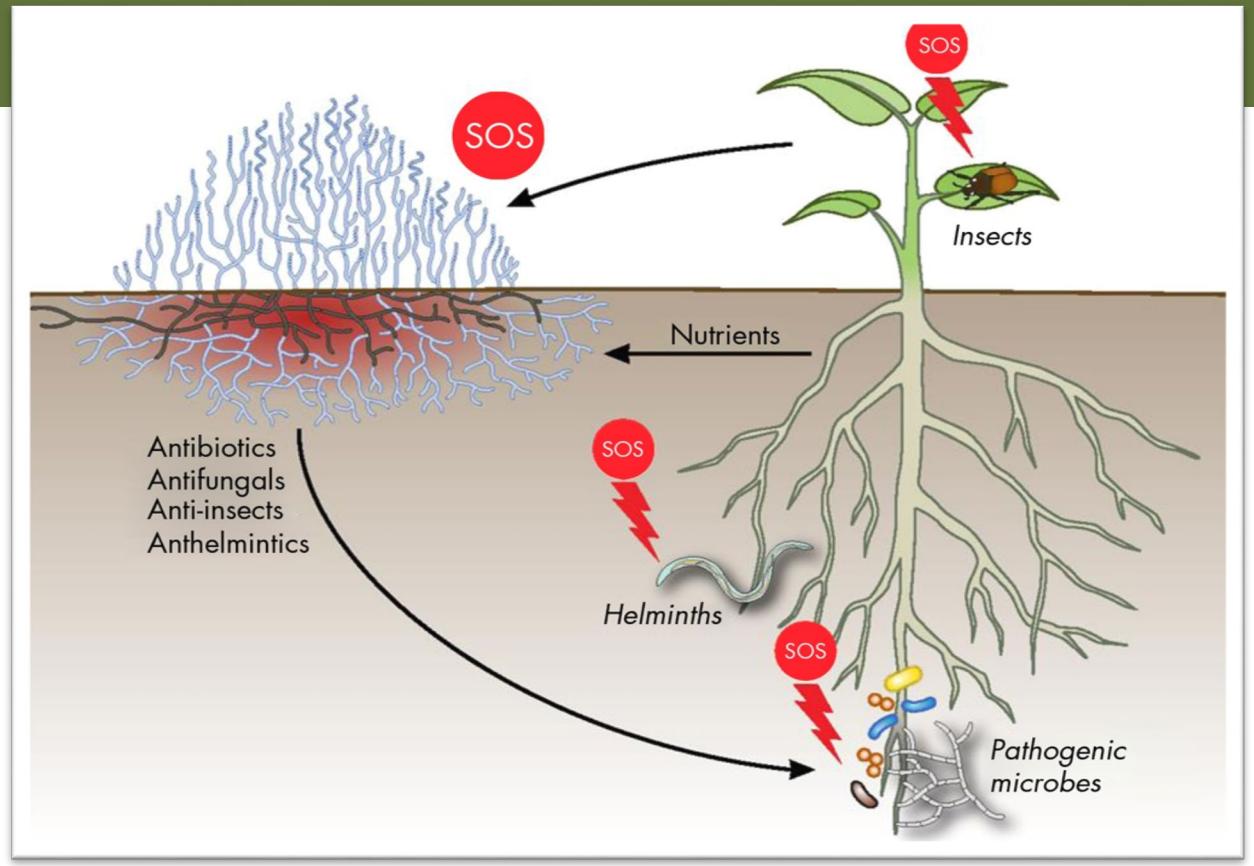

• Fertilization
• Growth promotion
• Plant protection

Plants 'cry for help'

Plant signals elicit the microbiome to produce bioactive compounds

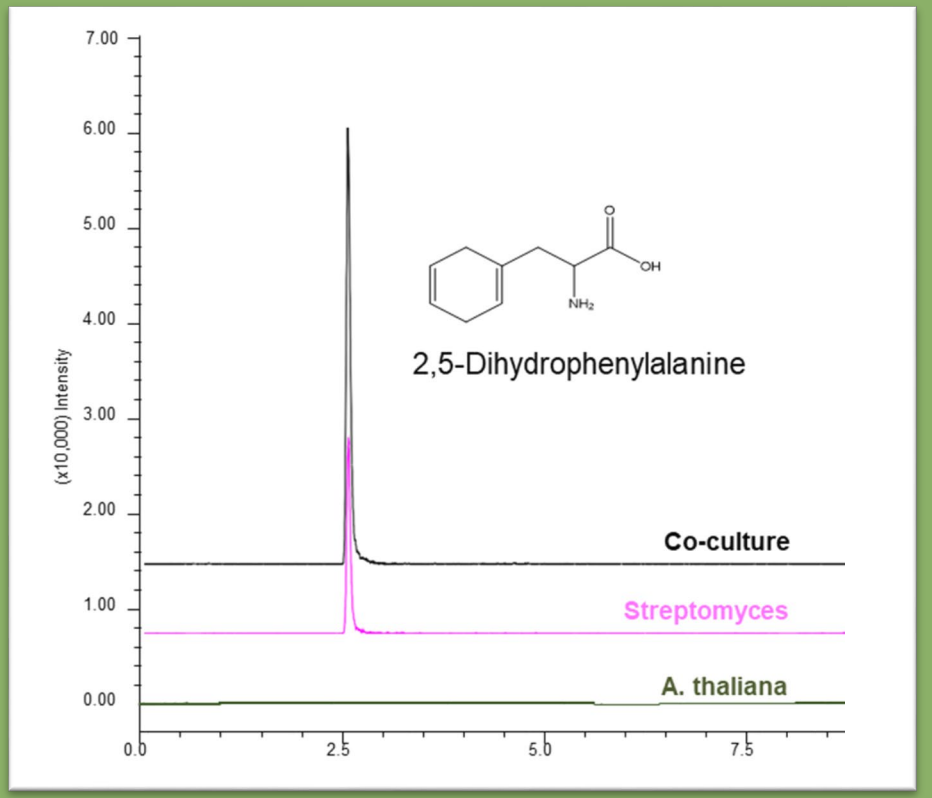
Antimicrobials where & when needed!



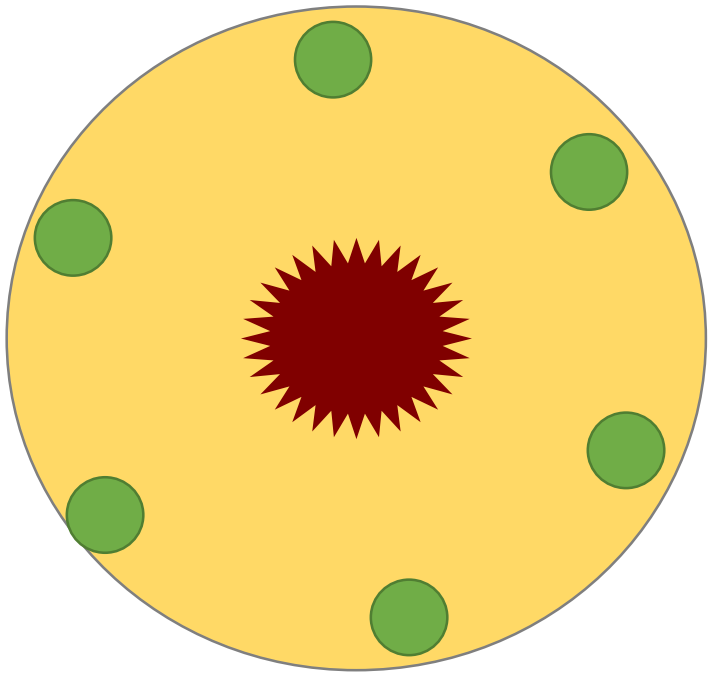
Antifungal effect upon plant-microbe interaction *in vivo*

We found the antifungal molecule!

- ✓ *R. solani* is sensitive to an antimicrobial by *Streptomyces*
- ✓ It is produced upon plant signals: the plant 'cries for help'
- ✓ Plant and microbiome fight the pathogen together!

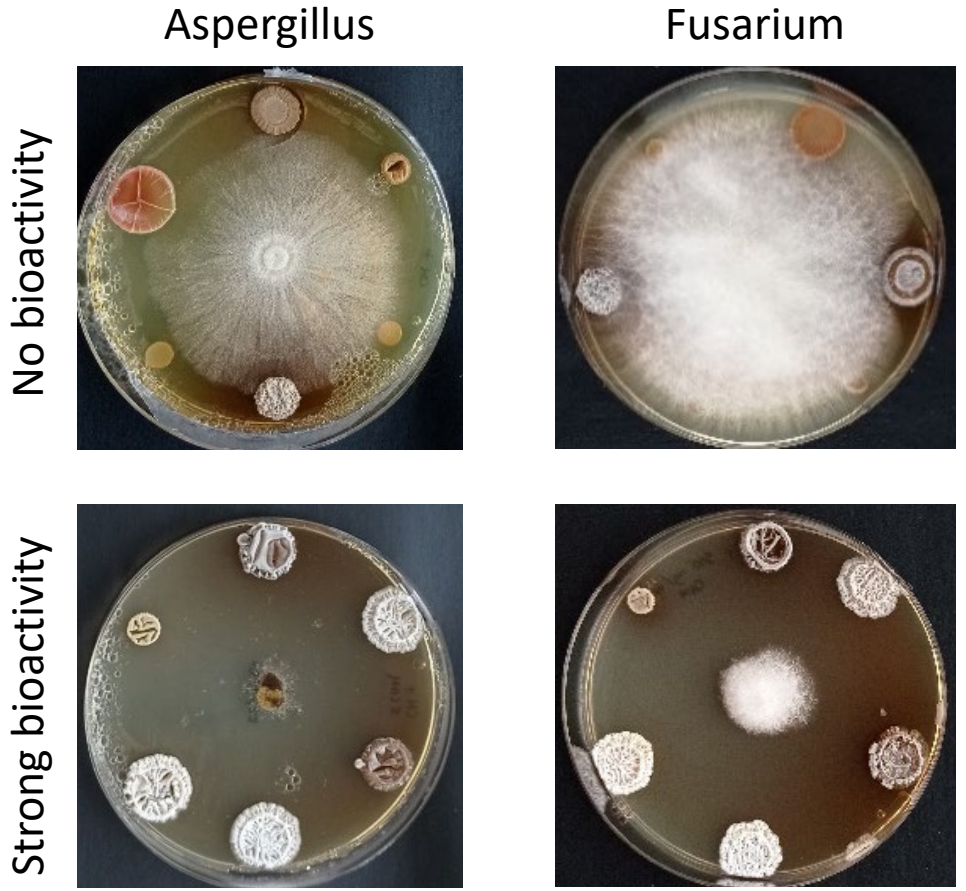


Streptomyces

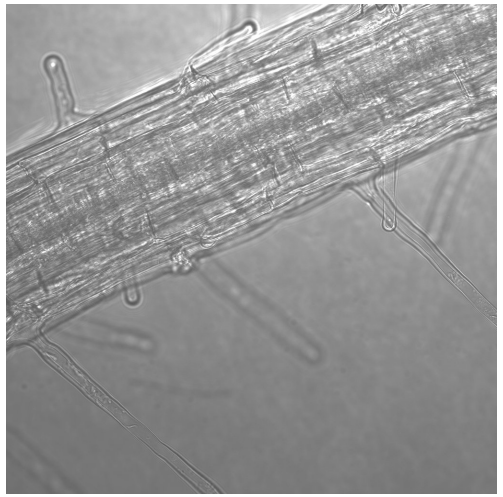


Beneficial *Streptomyces*

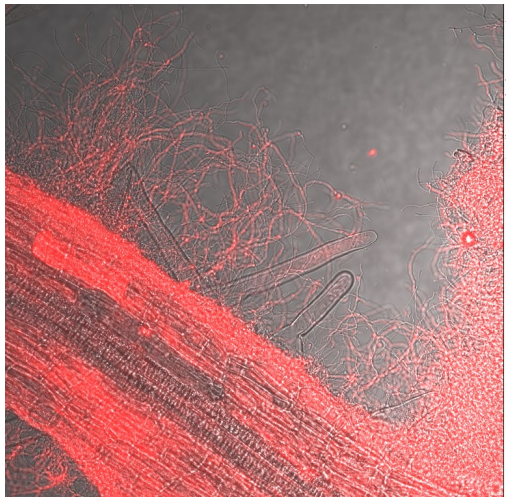
Pathogen



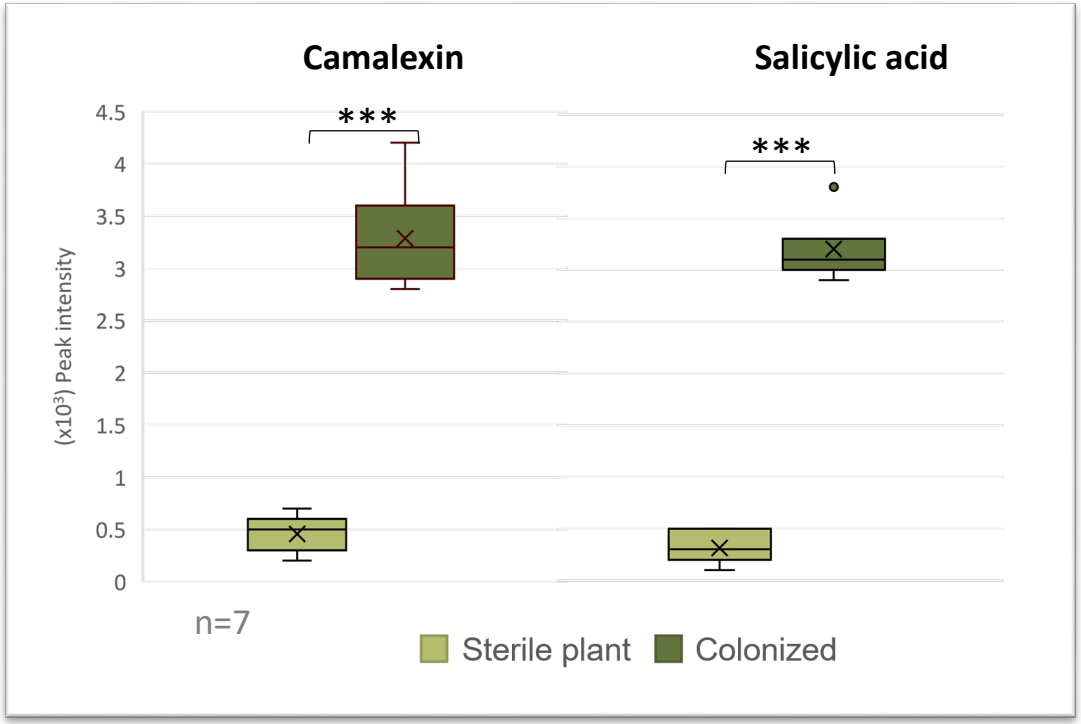
Streptomyces enhance the plant immune response



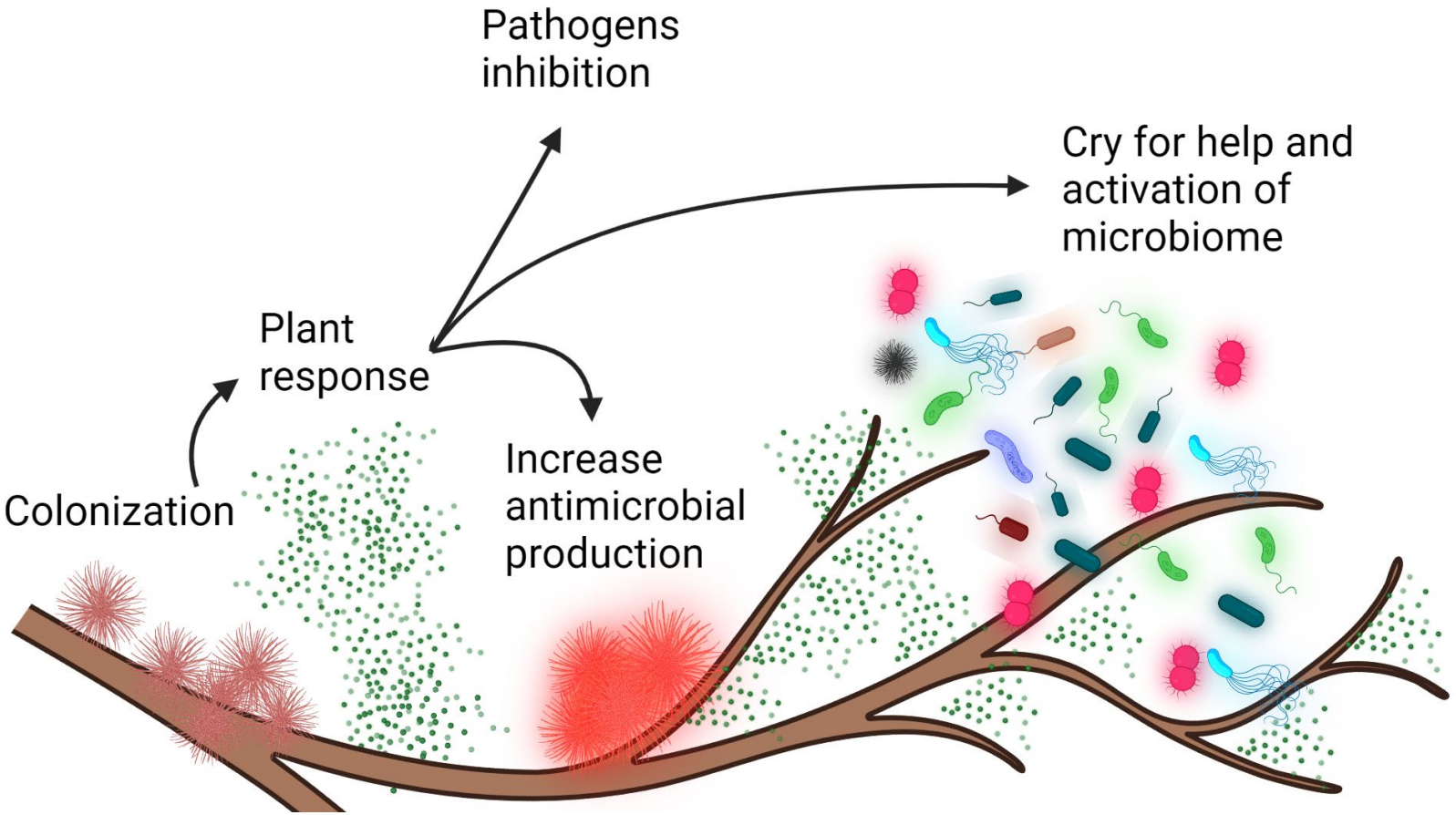
Sterile plant



Colonized plant



Take-home messages ☺



- Microbiome is a key player in plant protection
- Antimicrobials on demand, just when and where needed
- No chemicals!
- We need to work together!

Life did not take over the world by combat, but by networking.
- Lynn Margulis
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Thank you!

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