



Plantenna – Demonstrator

Sensing what the eye can't see



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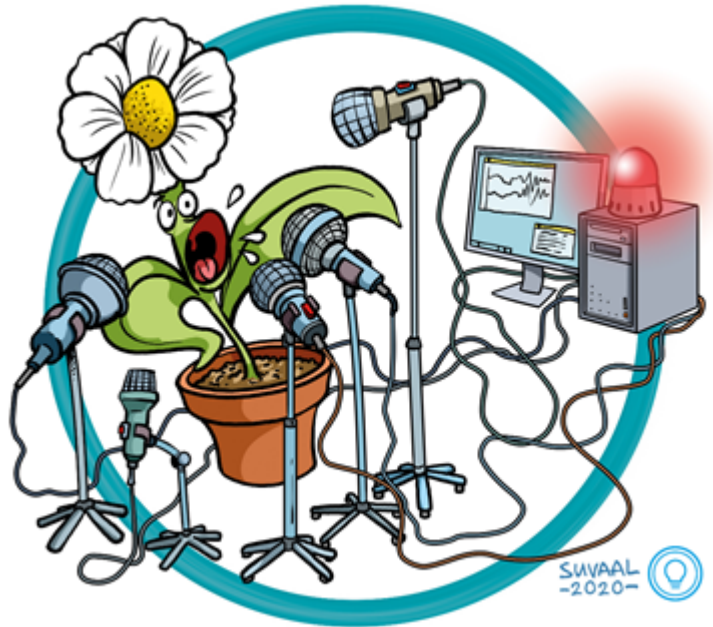


Courtesy: Peter Nelemans

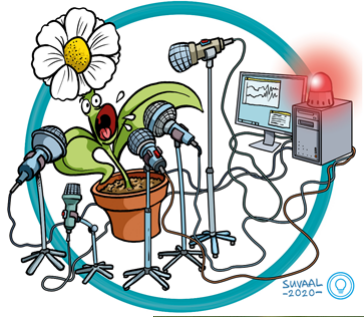


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*Sensing what the eye can't see:
new technology for early plant stress
detection*



Courtesy: Peter Nelemans



Micro radar: water content and early water stress detection



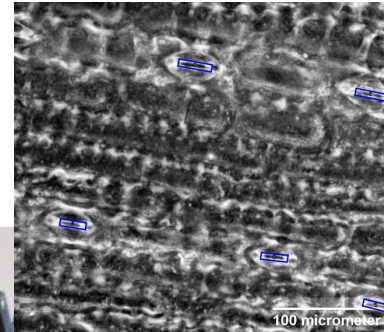
Courtesy: Natalia Hoog, Tom van den Berg

Ultrasound sensor: xylem properties and cavitation



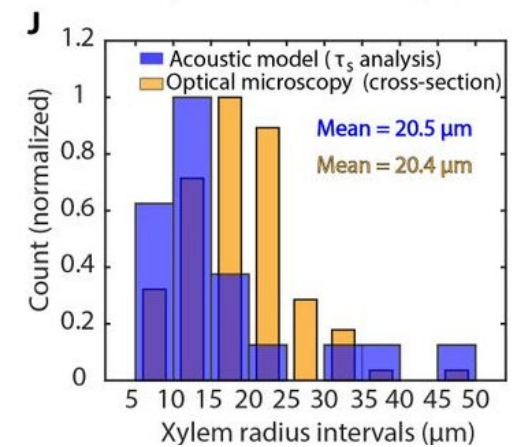
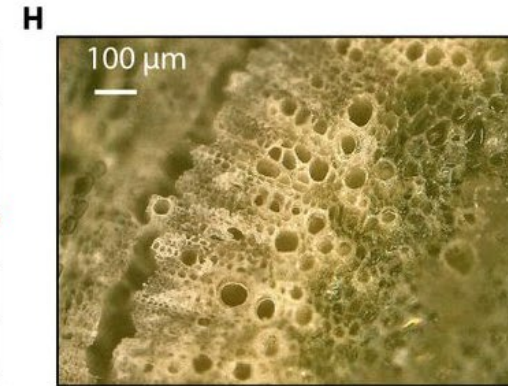
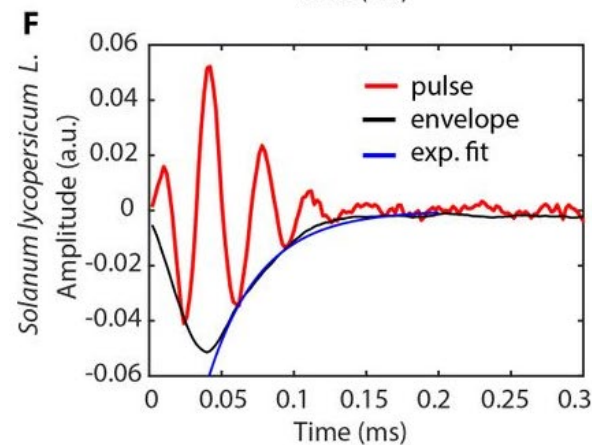
Courtesy: Gerard Verbiest

Stomatoscope: real-time stomata imaging



Courtesy: Tom van den Berg

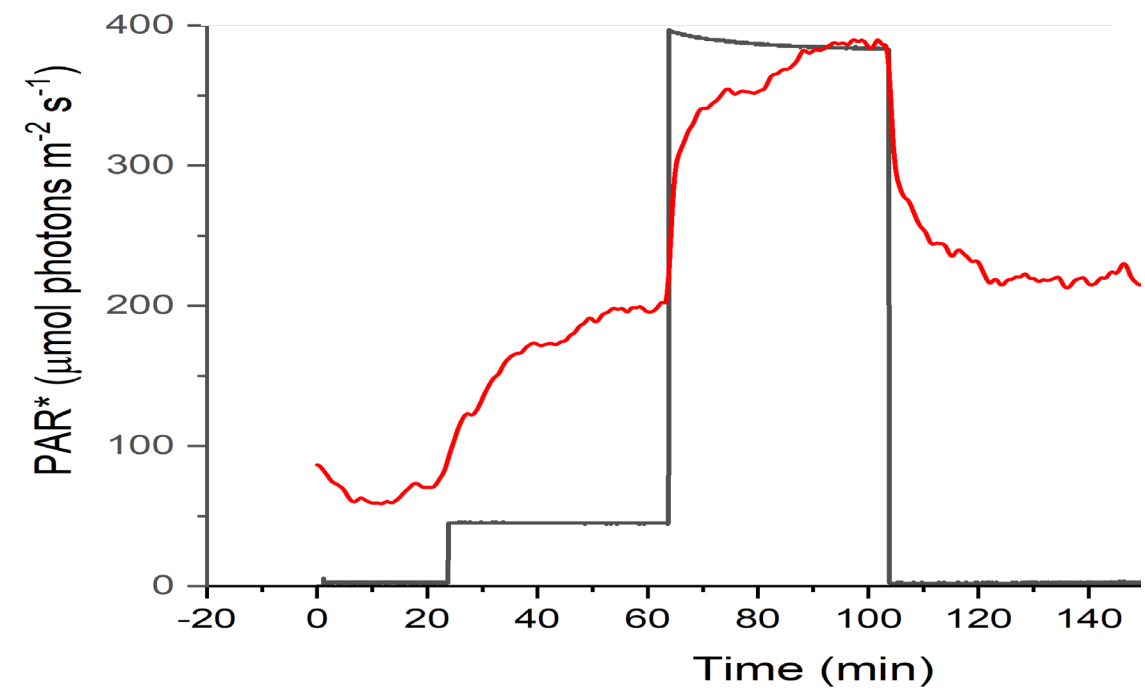
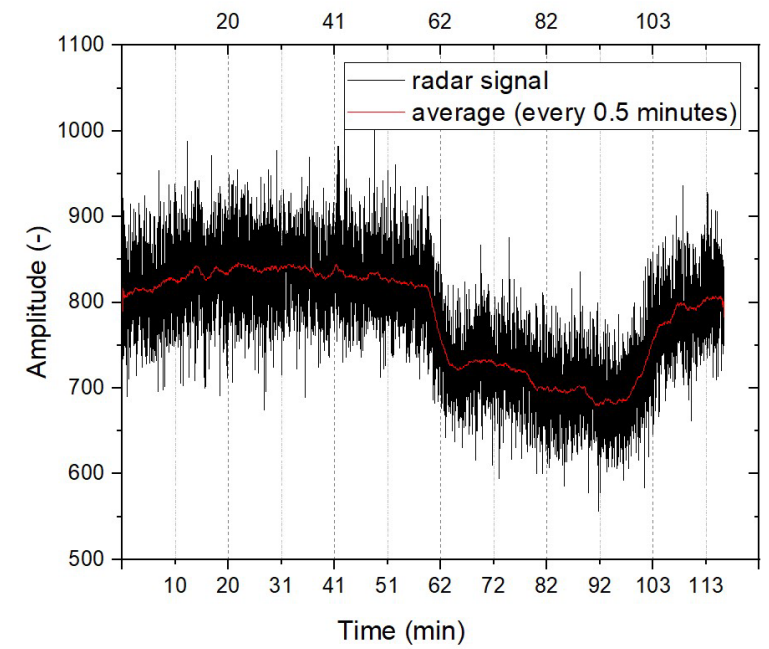
Ultrasound sensor:
xylem properties
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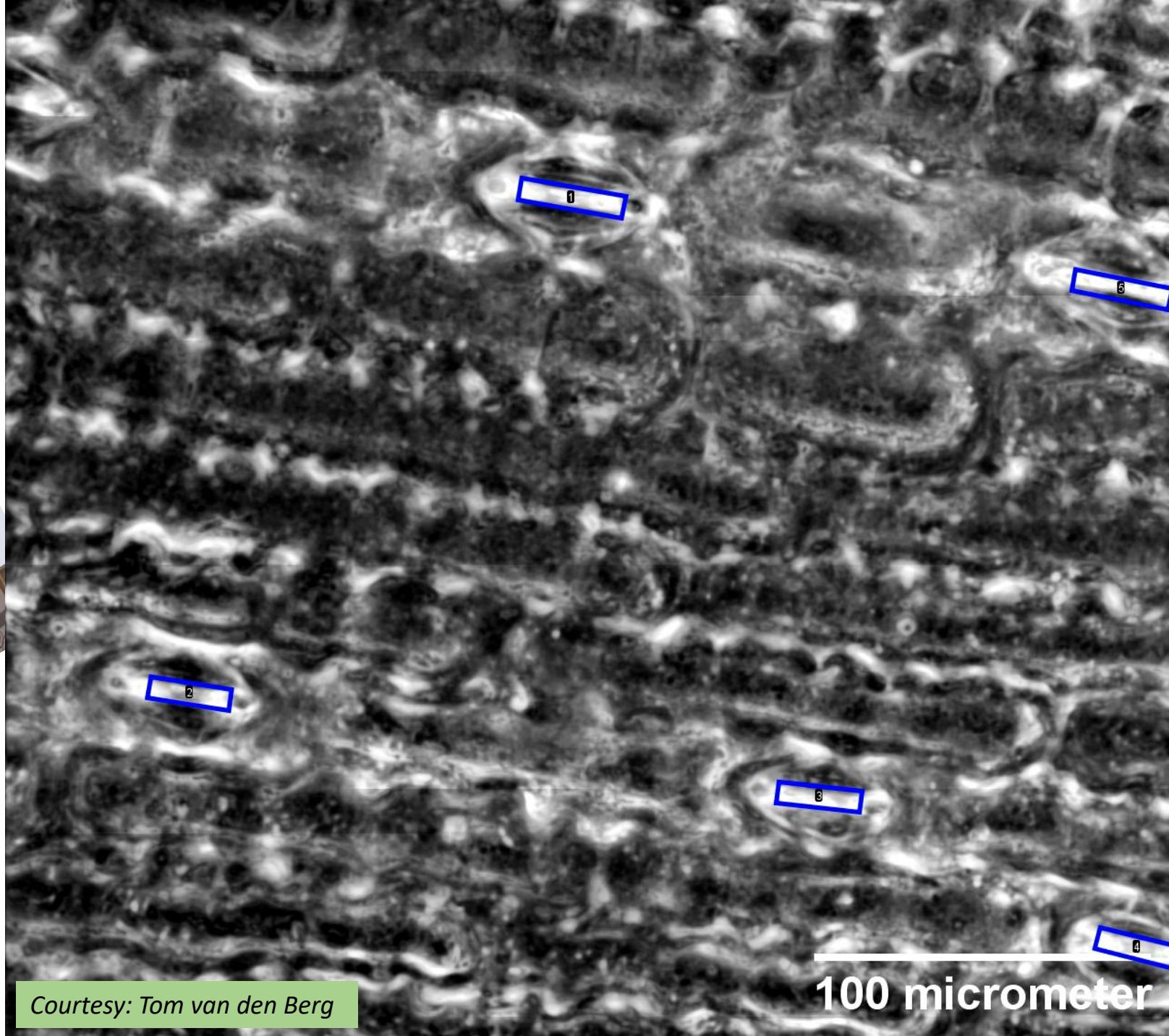
Dutta (2021). Listening to ultrasound from plants reveals xylem vessel anatomy
[<https://doi.org/10.21203/rs.3.rs-452046/v2>]



Micro radar: water content and early water stress detection



Stomatoscope:
real-time stomata
imaging



Courtesy: Tom van den Berg

100 micrometer



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This summer at Delphy Improvement Center, NL:
To prove early detection of drought stress, before current methods can.

- 4 months experiments, 150 m2 greenhouse, tomato crop
- Real-time monitoring: Plantenna sensors versus suite of conventional instruments
- Stress treatments: Drought stress and recovery
- Three Intensive Observation Periods



4TU.

TU Delft

More info: <https://www.4tu.nl/plantenna/>

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