Saftflussmessungen in der Baumforschung

Schwammstadt-Webinar, 30.5.24, Tal Hertig

VSA

zhaw Life Sciences und Facility Management
IUNR Institut für Umwelt und Natürliche Ressourcen

Saftfluss: Wieso?

Reaktion von Gehölzen an Umweltfaktoren

- Pflanzenwahl
- Systemdesign

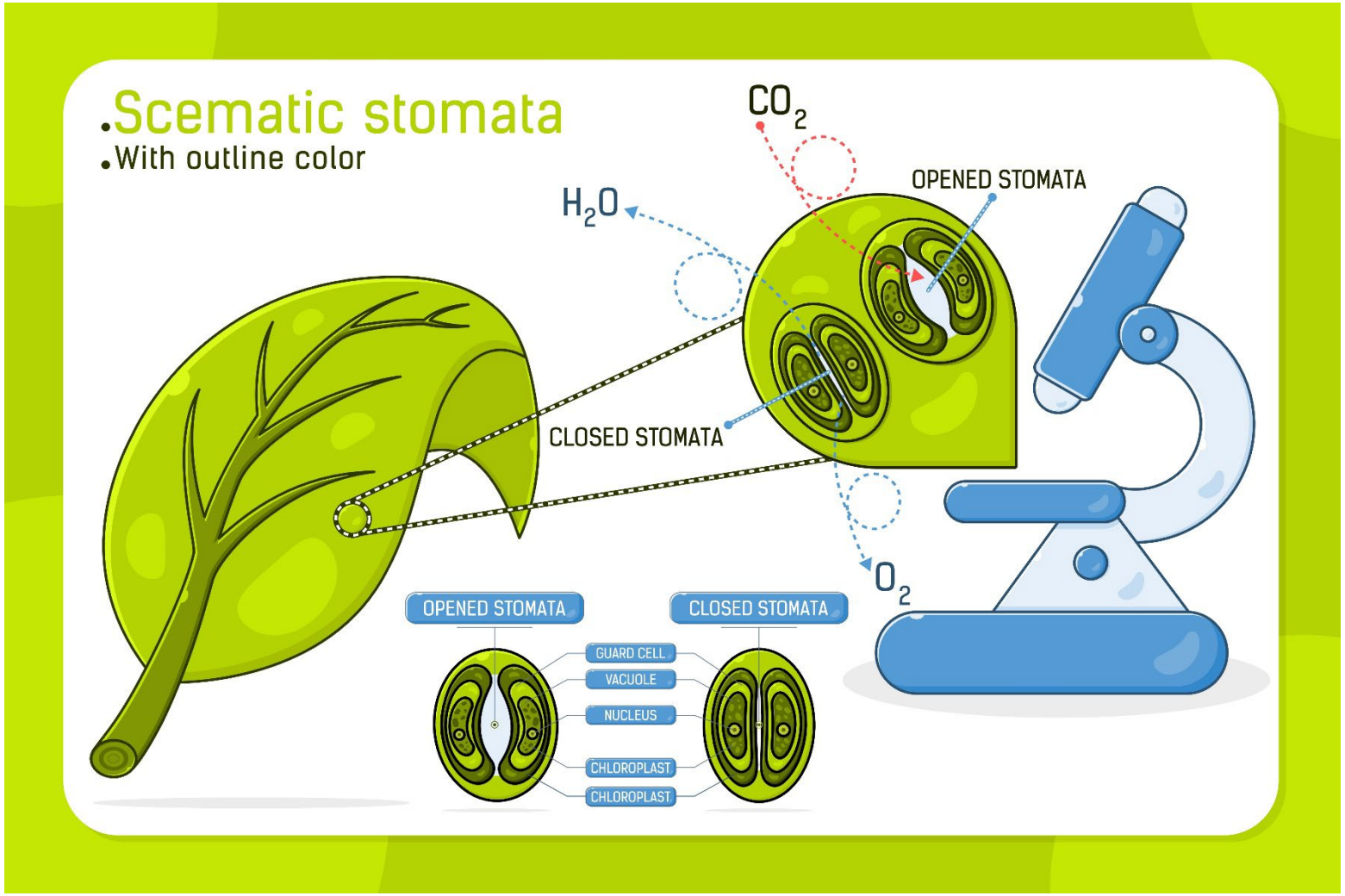
Einstellung der Bewässerungsintensität

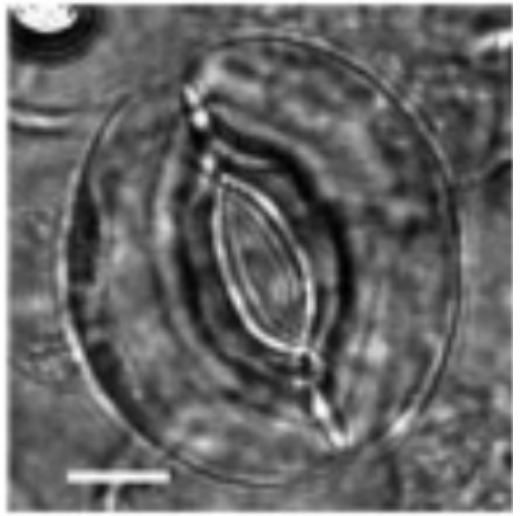
Monitoring der Pflanzengesundheit

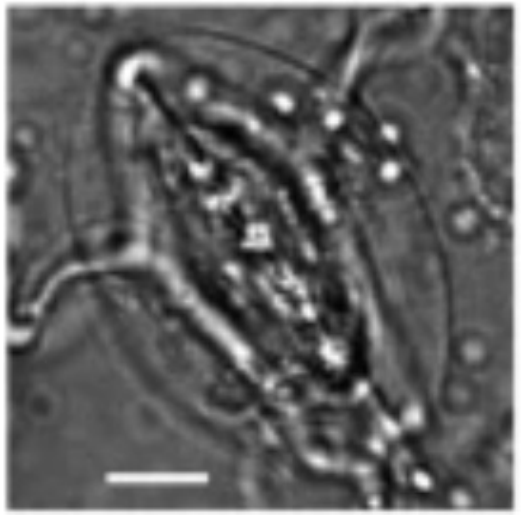
Erfassung von Ökosystemdienstleitung

- transpirative Kühlung
- Systemmodellierung

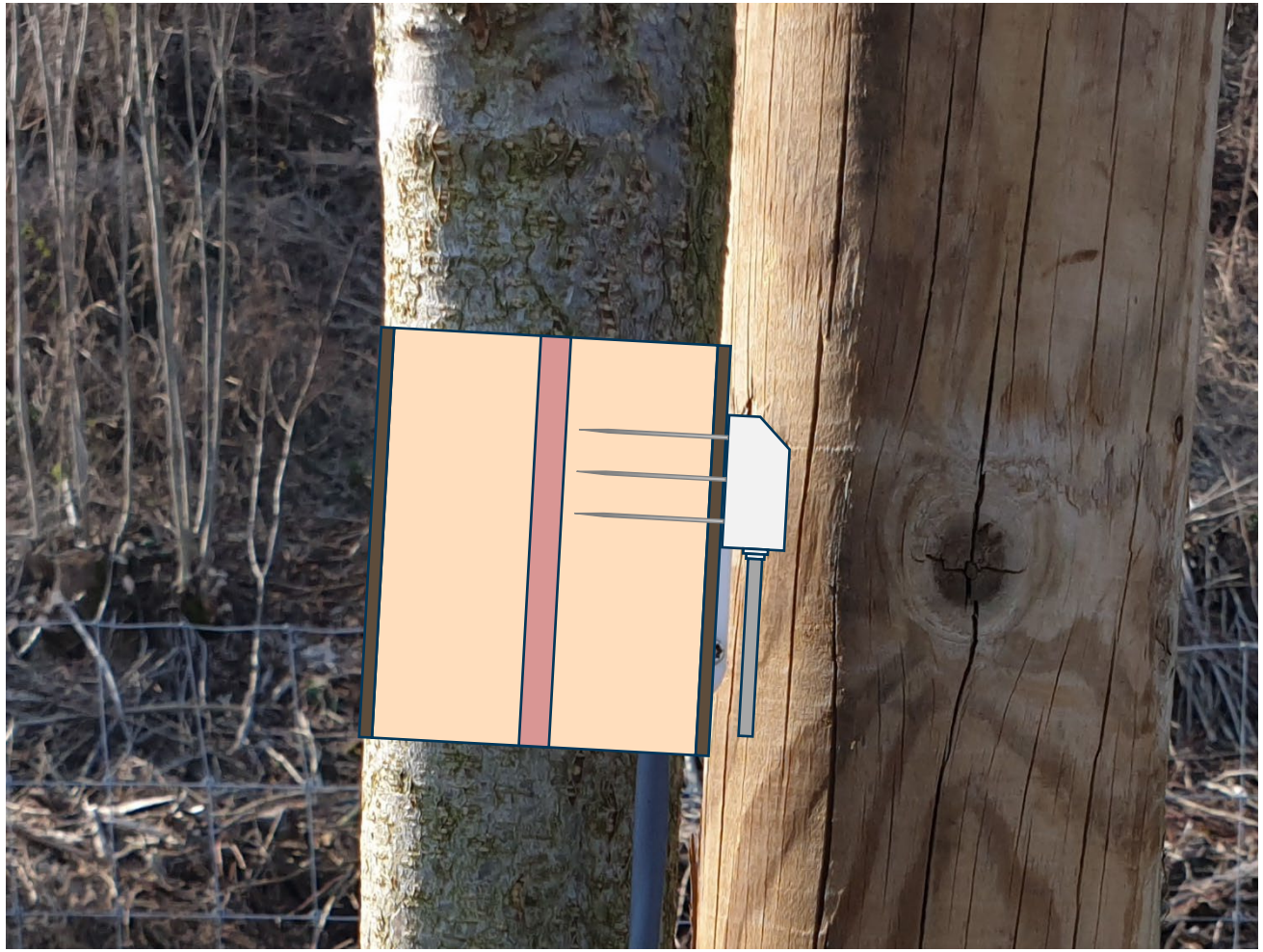
Saftfluss: Stomatäre Regulation





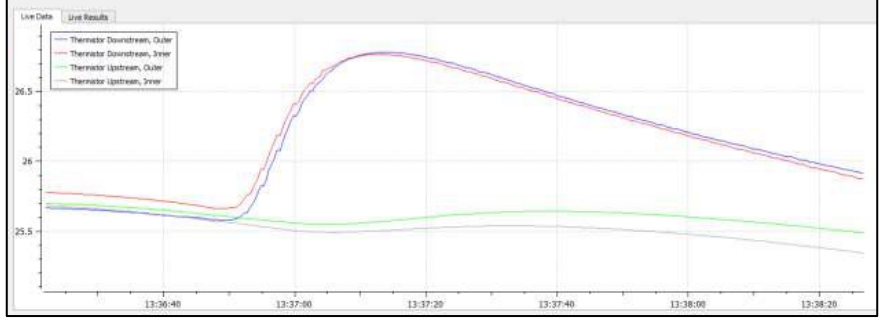


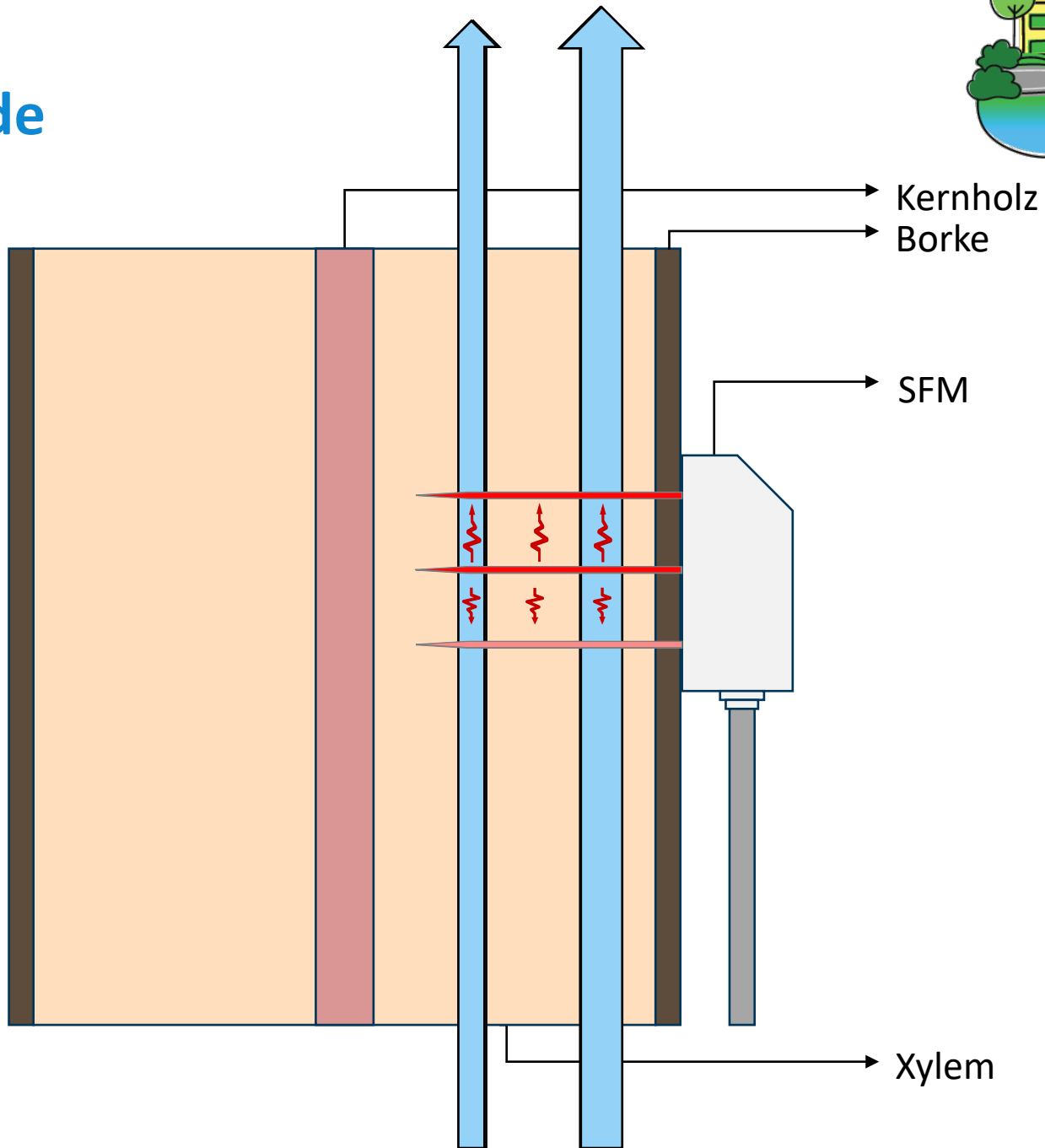
Saftfluss: Installation



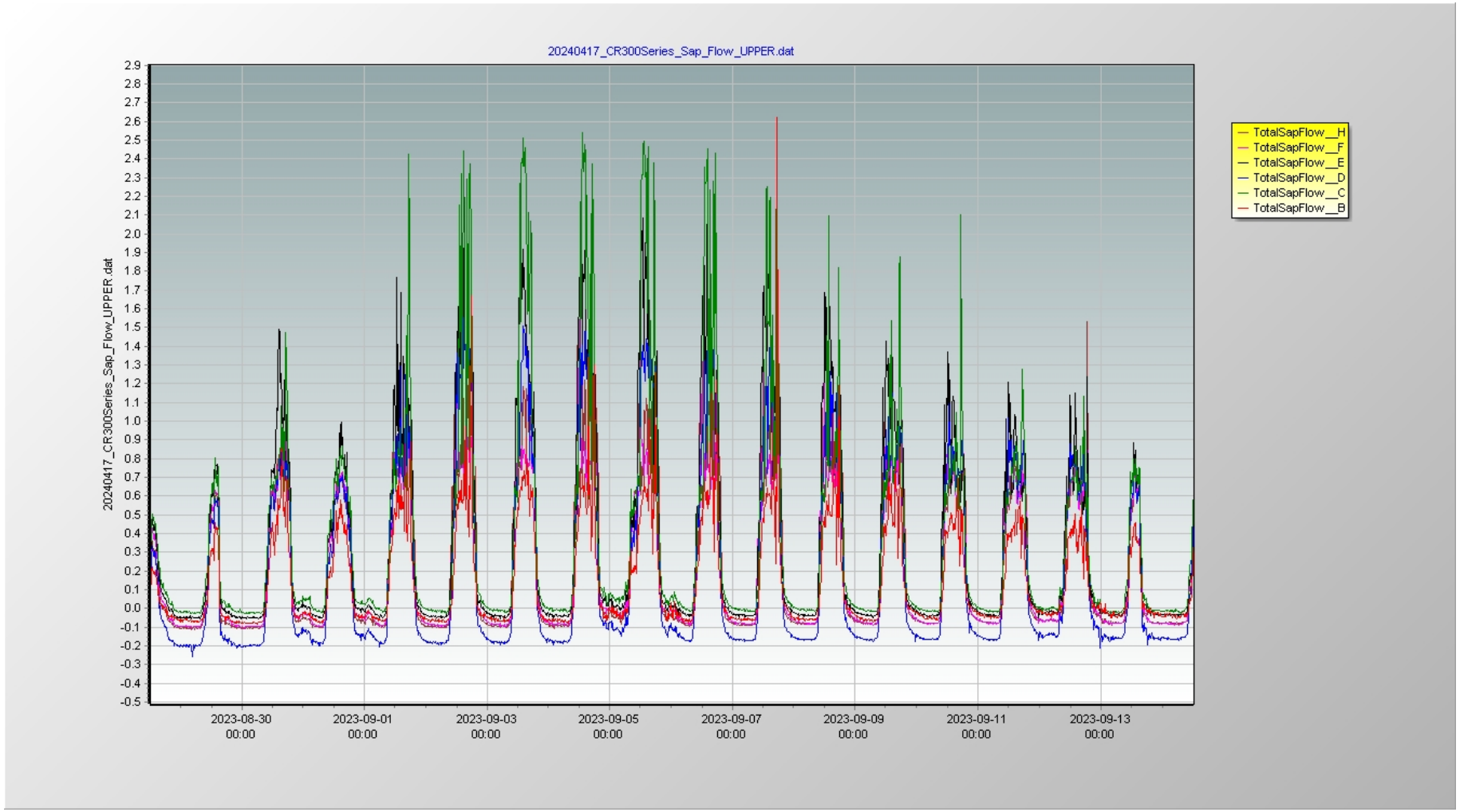
Saftfluss: Heat-Ratio-Methode

	Outer Thermistor	Inner Thermistor
Downstream Probe	25.914 deg.C	25.872 deg.C
Upstream Probe	25.487 deg.C	25.341 deg.C

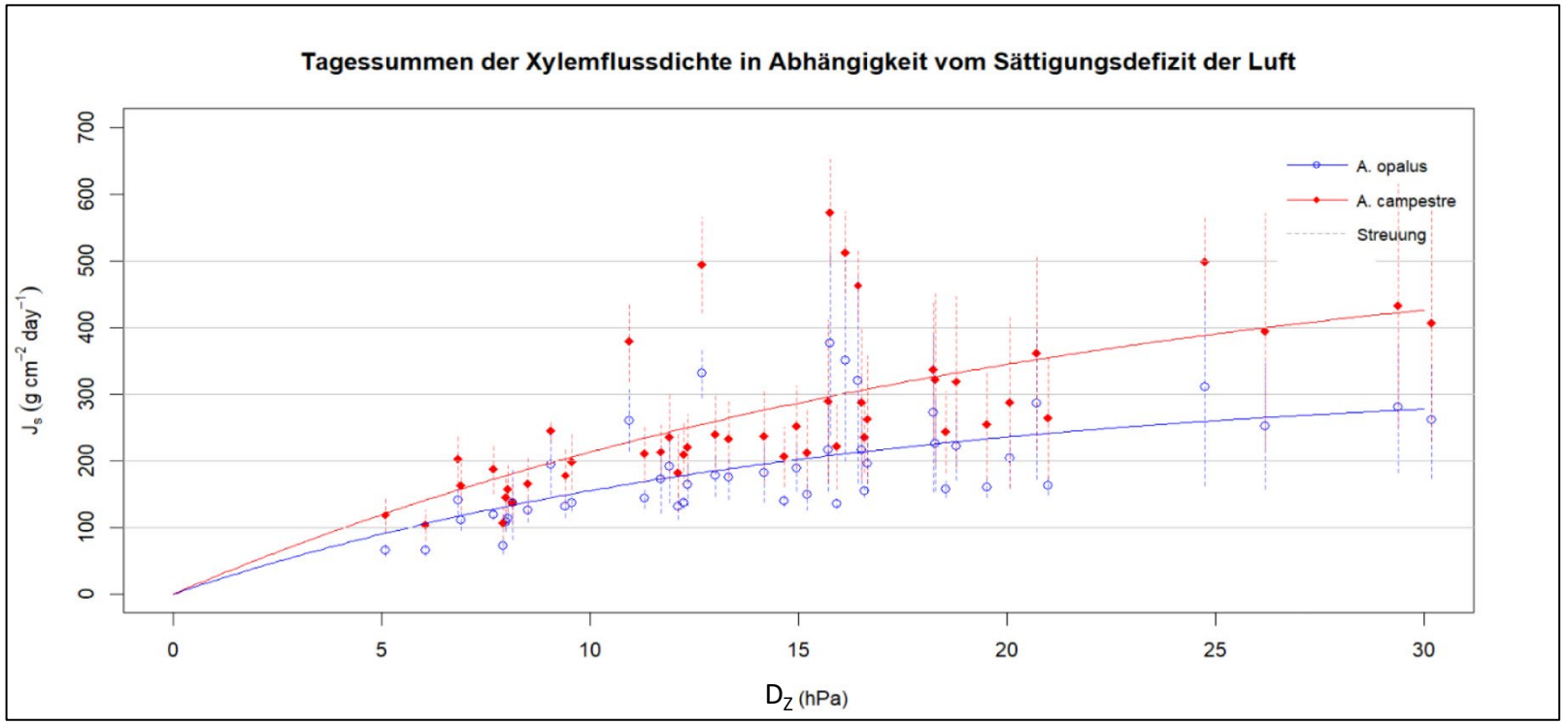




Saftfluss: Rohdaten



Saftfluss: Reaktion auf Trockenheit



$J_S = \mathbf{a}\ (1 - \exp^{(-\mathbf{b}\ Dz)})$

a → asymptotisches Maximum

b → rate der Regulation

	a	**b**
A. opalus	323.11 ml cm^{-2} d^{-1}	0.065
A. campestre	558.2 ml cm^{-2} d^{-1}	0.048

Stomata: Mirasole, F. M., Nastasi, S. P., Cubero-Font, P., & De Angeli, A. (2023). Vacuolar control of stomatal opening revealed by 3D imaging of the guard cells. *Scientific Reports*, *13*(1), 7647.