

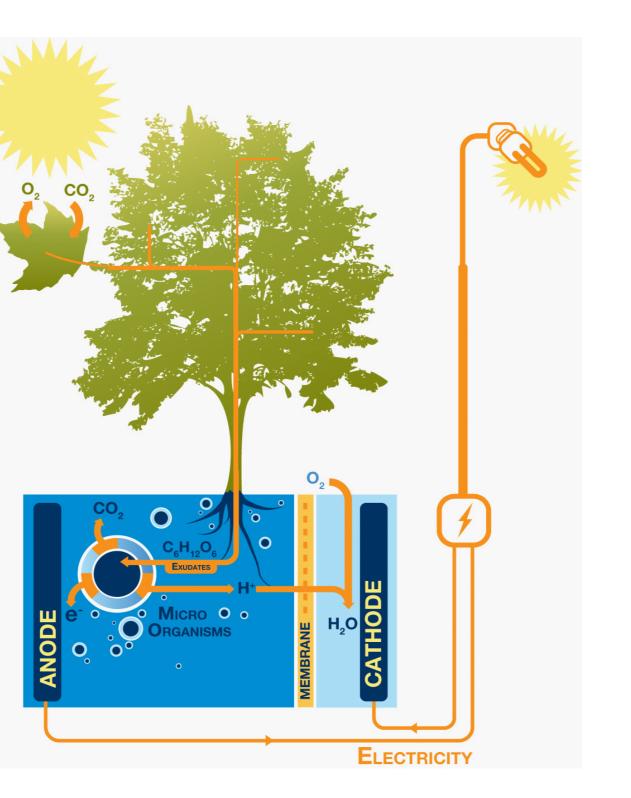


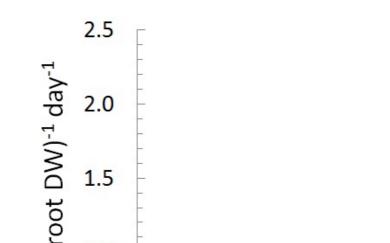
# Genetic variation in exudation in tomato

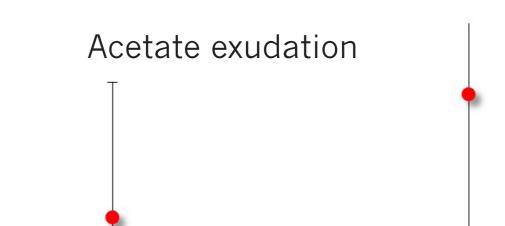
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In Plant Microbial Fuel Cells (Plant-MFC) rhizodeposits are converted





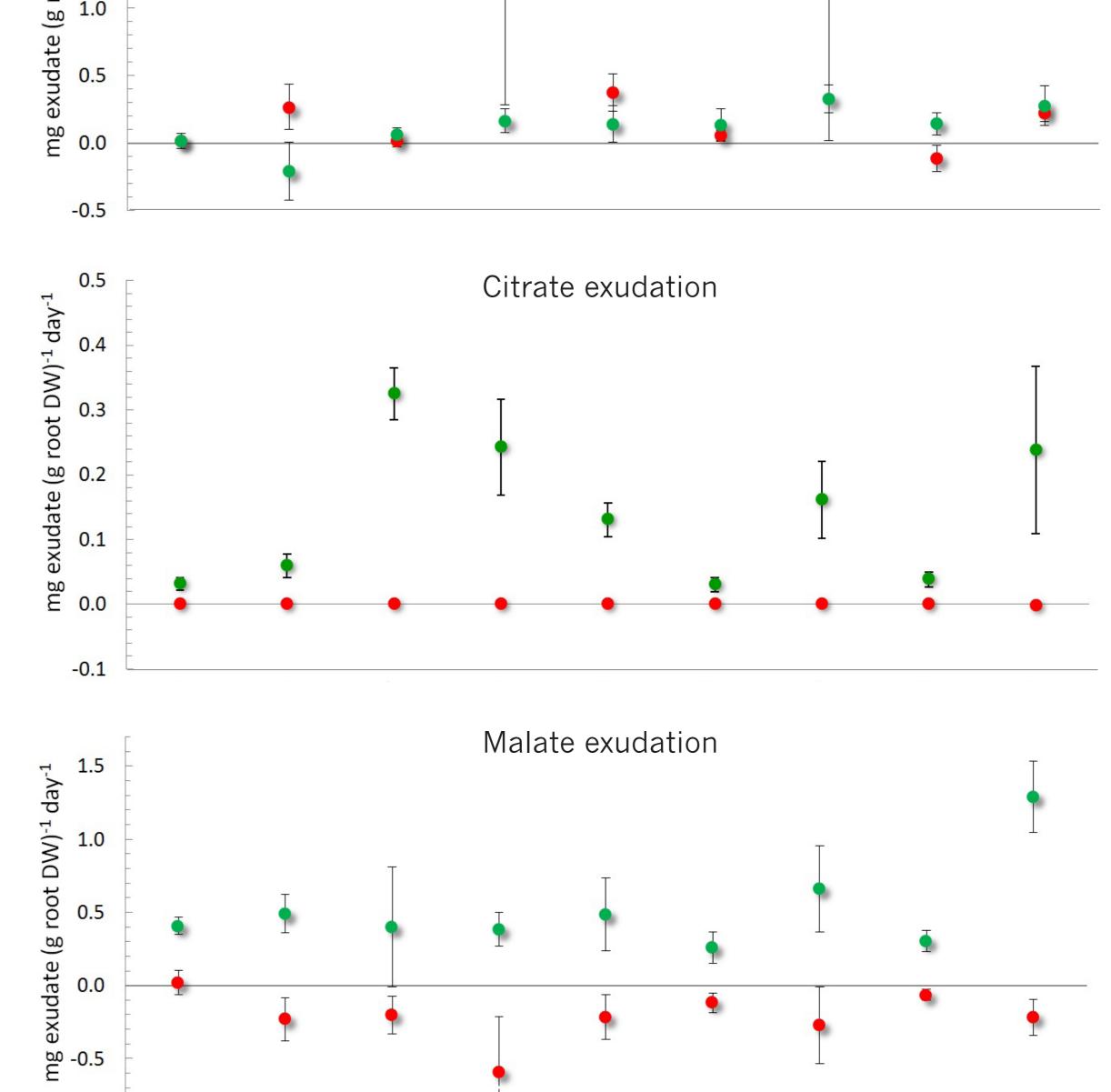


into electricity by anaerobic bacteria. Currently, root exudation is a limiting factor in Plant-MFC functioning. Exploiting genetic variation could lead to increased root exudation. Howev-

er, quantitative study of exudation is hampered by bacterial breakdown of exudates in the root zone.

#### Method

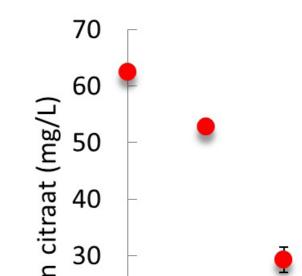
A new system was developed that allows to grow tomato and rice plants with sterile roots systems for over nine weeks, while the shoot is exposed to normal greenhouse conditions. A genetically diverse test set of five wild and three commercial tomato genotypes was screened for exudation of organ-



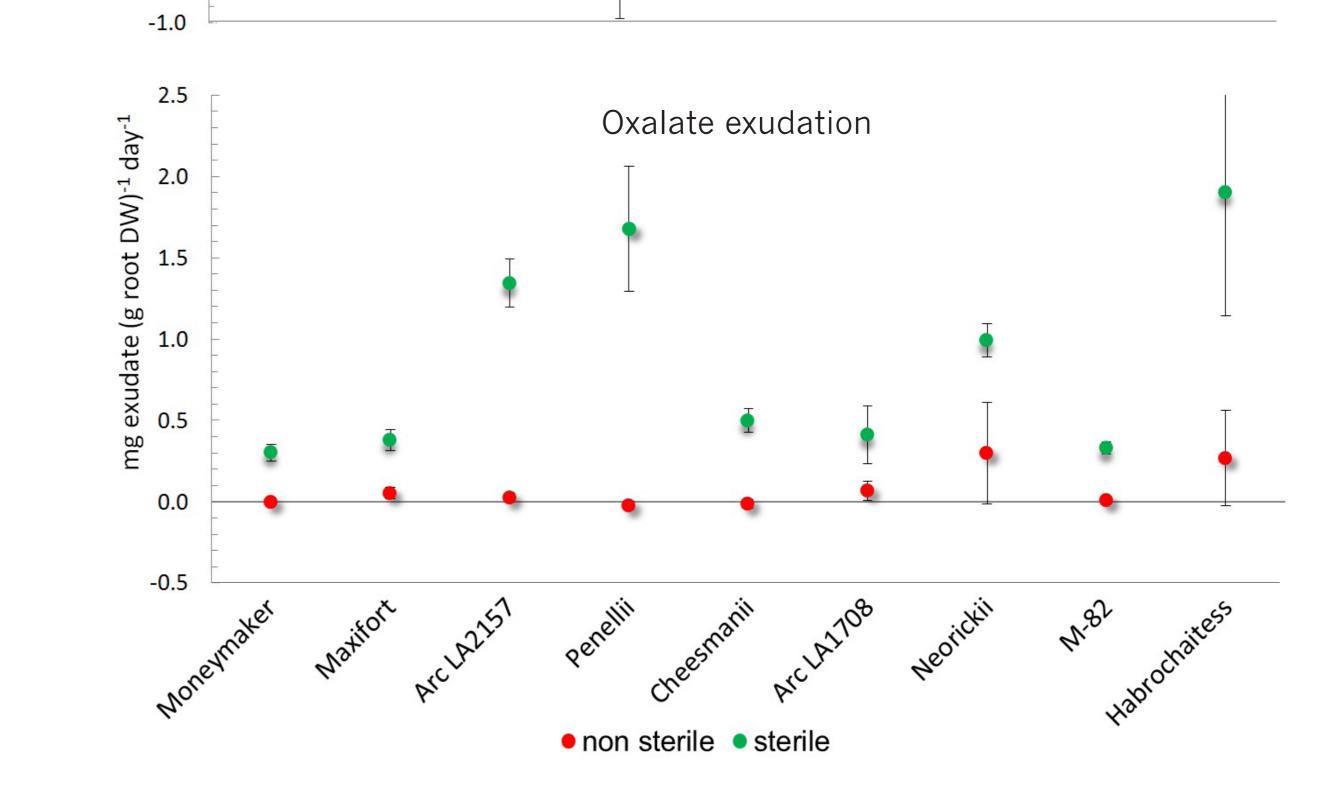
## ic acids. Exudation was measured using HPLC.



#### Results

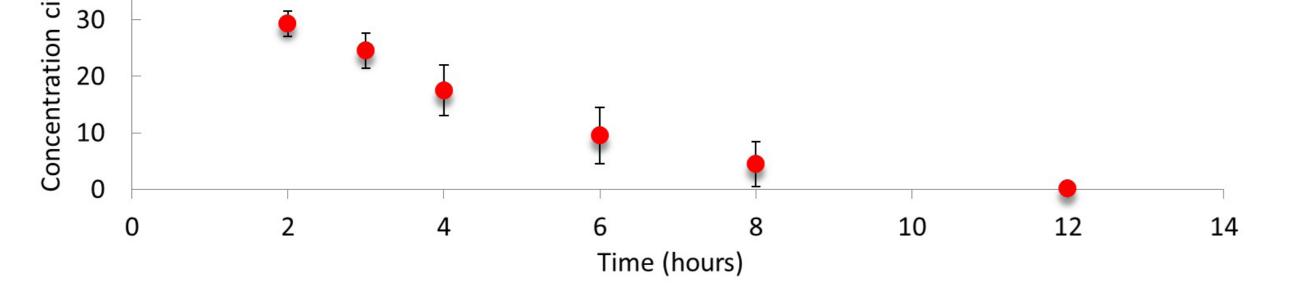


Breakdown of externally applied citrate by a non-sterile rhizosphere of tomato



### Conclusion

- In a non-sterile rhizosphere, there is rapid breakdown of exudates.
- This breakdown was minimized in the newly developed sterile system.



- We showed that there are considerable differences in exudation between tomato cultivars.
- This creates new possibilities in terms of breeding for reduced or increased exudation.

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