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## Proposition Poster

### **<sup>1</sup>H-NMR profiling of tomato samples with benchtop spectrometer**

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Metabolic phenotyping or metabolomics of tomato fruit is well documented and easily monitored for fruit sampling at a given stage of development especially for whole fruit or for pericarp tissue. A detailed characterization of fruit development by quantitative NMR metabolomics of cultivated tomato fruit tissue<sup>1</sup> and pericarp of tomato fruit mutant lines<sup>2</sup> has been published recently at high field NMR. To widen the interest of such an NMR-based approach, decreasing the analytical cost and increasing the analytical throughput are of interest. Therefore, the main objective of this work was to test the ability of benchtop NMR to discriminate two tissues of tomato fruit (pericarp and locular tissue) at four stages (Mature-green, Breaker, Orange and Red-ripe) and to quantify the major soluble sugars and organic acids.

<sup>1</sup>H-NMR spectra of the same tomato hydromethanolic extracts were acquired with water presaturation at 80 MHz (Magritek, Aachen, Germany) and at 500 MHz (Bruker, Wissembourg, France). They were processed with NMRProcFlow<sup>3</sup> ([nmrprocflow.org](http://nmrprocflow.org)) for targeted and untargeted analysis (ERVA<sup>4</sup> method), and the data were analyzed with univariate or multivariate statistical analyses.

We report on our first results of these comparisons of tomato tissue profiling by <sup>1</sup>H-NMR spectroscopy at 80 and 500 MHz. Benchtop NMR analysis of fruit tissue extracts could be proposed to biologists studying tomato or other fleshy fruits, to characterize fruit development of wild-types and mutants in a greenhouse, or to phenotype large series of genotypes.

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#### References

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