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METABOLOMICS PROFILING AND THE DECIPHERING OF FRUCTANS METABOLISM IN PLANT TISSUES

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With more than 400,000 plant and 1,000,000 estimated metabolites, metabolomics is an emerging technology that profiles the complete set of small naturally or induced metabolites. The recent progress of metabolomics has led to a comprehensive and global analysis of metabolites and metabolic pathways. Recent development and results have shown that metabolomics approach could be used to decipher the carbohydrates metabolism and determine the structures of specific metabolites. However, very few works have been reporting on the fructans metabolome during biosynthesis, translocation and accumulation, as well as the source-sink relation. Therefore,

broader use of metabolomics will provide comprehensive data sets necessary to model metabolic networks related to fructans metabolism. The goal of this study was to profile the metabolome of fructan biosynthesis in onion plant as model using GC-MS and chemometrics. Results showed that besides conventional sugars, other minor and even one rare sugar was detected during the biosynthesis, accumulation and translocation of sugars. These results indicate that other minor sugars play a role in the biosynthetic and translocation processes of fructans.

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