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### Use of NMR for metabolic profiling in plant systems

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#### Abstract:

The review deals with the applications of solution state <sup>1</sup>H NMR to the metabolic profiling of plant tissue extracts. NMR is introduced as one of several measurement techniques that are being used in metabolomics. Samples are measured as extract mixtures without any chromatographic separation of individual compounds. Although a limited quantitative measurement of individual components is feasible, the data analysis generally relies on the application of multivariate statistical methods to the whole spectral traces. Design of experiments and sample preparation and measurement procedures are discussed. Applications are grouped under three major headings: classification and taxonomy; genetically modified plants; chemical treatments, environmental influences and pathogens. The final section introduces some of the newer technologies that will extend the scope of NMR metabolic profiling, including the hyphenation of HPLC with UV, MS and NMR detection.

#### Keywords:

NMR, metabolic profiling, plant metabolomics



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