

Varietal differences in degree of polymerization of fructan and classification by cluster analysis

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## Abstract:

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Varietal differences in degree of polymerization (DP) of fructan in basal stem including leaf sheath of 29 wheat varieties relating on pedigree of breeding were investigated. Most of the varieties contained a large amount of short-chain fructan in comparison with long-chain fructan. Varietal differences in DP distribution changed largely in accordance with the changes in short-chain fructan. In order to clarify the profiles of DP distribution of fructan in varieties, cluster analysis based on the contents of mono- and disaccharides, short-and long-chain fructan was applied. The varieties were grouped into 4 clusters, namely high and low fructan groups, Velvet and Hon-iku 49. Velvet and Hon-iku 49 are unique in that they contained a lot of long-chain fructan, implying that they are available as genetic resources to increase the fructan contents which is a key factor for wintering ability.

## Keywords:

Cluster analysis, Degree of polymerization, Fructan, Gel filtration chromatography, Molecular weight, Nonstructural carbohydrate, Pedigree, Wheat

[Full-text PDF (653K)][References]

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