Alkyl- and Alkenylresorcinols of Wheat Grains and their Chemotaxonomic Significance

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Resorcinolic lipid contents and homologue compositions in extracts isolated from soft winter, soft spring and hard (durum) wheat grains were evaluated by both instrumental and chromatography means. Resorcinol concentrations determined in wheat were diverse and varied in samples harvested within two consecutive vegetative years, whereas their homologue profiles were found to be rather invariable. The predominant alkylresorcinols identified in wheat grains were saturated 1,3-dihydroxy-5-*n*-heneicosylbenzene and 1,3-dihydroxy-5-*n*-nonadecylbenzene. 1,3-Dihydroxy-5-*n*-heptadecylbenzene and 1,3-dihydroxy-5-*n*-tricosylbenzene were also determined, whereas 1,3-dihydroxy-5-*n*-pentadecylbenzene and 1,3-dihydroxy-5-*n*-pentacosylbenzene were present in these extracts only in spurious amounts. Furthermore, our results show that alk(en)ylresorcinols may be useful as chemotaxonomic markers for a distinction between soft and hard wheat plants. Cluster analysis with Ward's amalgamation algorithm and five different distance linkage types clearly discriminated particular wheats into species- and cultivar-specific clusters, whereas the use of principal component analysis allowed us to specify, which of the variables analysed were decisive. This approach may be useful for both plant breeders and taxonomists to classify wheat species/cultivars.

Key words: Resorcinolic Lipids, Phenols, Cereals