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Relevance, structure and analysis of ferulic acid in maize cell walls

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8

9 **Abstract**

10 Phenolic compounds in foods have been widely studied due to their health benefits. In
11 cereals, phenolic compounds are extensively linked to cell wall polysaccharides, mainly
12 arabinoxylans, which cross-link with each other and with other cell wall components.
13 In maize, ferulic acid is the phenolic acid present in the highest concentration, forming
14 ferulic acid dehydrodimers, trimers and tetramers. The cross-linking of polysaccharides
15 is important for the cell wall structure and growth, and may protect against pathogen
16 invasion. In addition to the importance for maize physiology, ferulic acid has been
17 recognized as an important chemical structure with a wide range of health benefits
18 when consumed in a diet rich in fibre. This review paper presents the different ways
19 ferulic acid can be present in maize, the importance of ferulic acid derivatives and the
20 methodologies that can be used for their analysis.

21

22 **Keywords**

23 Arabinoxylans; Cross-linking; Ferulic acid; Maize; Phenolic acids; *Zea mays*

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