An efficient method for the quantification of hydroxamic acids from wheat by thin layer chromatography-densitometry

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A new method is described for the quantification of 2,4-dihydroxy-7-methoxy-1,4-benzoxazin-3-one (DIMBOA) and 2,4-dihydroxy-1,4-benzoxazin-3-one (DIBOA), the main hydroxamic acids in wheat and rye extracts, respectively, in cereal extracts based on densitometry of scanned thin layer chromatographic plates. The method allows the simultaneous quantification of up to five samples, and is linear between 0.5-7 ?g and 10-30 ?g for DIMBOA and between 0.5-3.0 ?g and 10-30 ?g for DIBOA. Quantification of DIMBOA by this method generates a linear correlation with results obtained following analysis by high performance liquid chromatography. The possibility of applying this methodology to mixtures of DIBOA and DIMBOA is discussed.