

TECHNOLOGICAL QUALITY AND PHENOLIC COMPOUNDS CONTENT OF EMBRAPA WHEAT CULTIVARS

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Wheat is fourth largest produced cereal in Brazil. Brazilian wheat cultivars have specific technological properties that define their aptitude for baking. The aim of this study was to characterize the technological quality and phenolic composition of Brazilian wheat cultivars with hard or soft grain texture. Wheat (*Triticum aestivum* L.) grains of the cultivars BRS Guaraim and BRS Marcante were provided by Embrapa Trigo (Passo Fundo/RS). For technological quality characterization was considered the parameters of normative instruction of MAPA (nº 38/2010), whereas phenolic compounds were quantified by HPLC-PDA after extraction of free phenolic compounds (FPC), or hydrolysis of matrix-bound phenolics (BPC) using alkaline (K) or acid (C) hydrolysis. BRS Guaraim and BRS Marcante had different values for grain hardness index, being BRS Guaraim a soft grain texture cultivar (35.3±0.6) and BRS Marcante hard grain texture cultivar (74.5±0.6). Besides, BRS Guaraim had lower falling number (FN), gluten strength (W) and dough stability (STB) than BRS Marcante. BRS Guaraim was indicated to produce cakes and cookies and BRS Marcante for bread. BRS Marcante showed higher FPC content than BRS Guaraim (26.24±2.29 vs. 16.55±2.51 mg/100 g DW). FPC and BPC-C were mostly composed of hydroxybenzoate or tannin-derived compounds (77% and 98%, respectively), while BPC-K was mostly composed by hydroxycinnamate derivatives (96%). FPC amounted to 10% of total phenolic compounds, while BPC accounted to most phenolic compounds in wheat cultivars (20% BPC-K and 70% BPC-C). It was concluded that most phenolic compounds of wheat cultivars were associated linked to the grain matrix by ester/ether bounds (BPC-C). In addition, the hard-textured BRS Marcante cultivar, which has higher FN, W and STB, also had higher content of FPC than BRS Guaraim. This study presents for the first time the quantification of wheat phenolic compounds for these Brazilian wheat cultivars of Embrapa.

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