

RELATIONSHIP BETWEEN RAPID FLOUR CHECK METHOD AND TRADITIONAL ANALYSES FOR WHEAT GLUTEN QUALITY EVALUATION TO BRAZILIAN WHEAT GENOTYPES: A PRELIMINARY STUDY

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Wheat (*Triticum* spp.) quality correct evaluation is the key to know the flour performance for suitable end-use indication, and it is critical in breeding programs where a small amount of grains is available. The objective of this study was to investigate the relationship between rapid, flour saving samples check method (GlutoPeak) and traditional analyses used to evaluate technological quality, including wheat protein quality/quantity evaluation (protein, gluten, alveography and farinography). One hundred-seven wheat flour samples obtained from cultivars and lines from Embrapa essays, carried out in the Central Brazil region (41), Parana state (25) and Rio Grande do Sul state (41), were evaluated. The analysis in GlutoPeak, using 9 g wheat flour/350 sec, was performed in duplicates (Parameters: MT, maximum torque; PMT, peak maximum time); being the results evaluated considering the first peak, 1PK (in strong flour cases, the software detects a second maximum peak/peak time what demands a manual change). The other additional tests performed according to official methods of analysis were: HW, hectoliter weight; TKW, thousand kernel weight; GPC, grain protein content; GFN, grain falling number; TFY, total flour yield; flour color (Parameters: L*, lightness; a* and b* coordinates, red-green and yellow-blue, respectively); gluten content (Parameters: GI, gluten index; WG, wet gluten; and DG, dry gluten); alveography (Parameters: P, tenacity; L, dough extensibility; P/L ratio; G, swelling index; W, flour gluten strength; P/G ratio; and E, elasticity index – the last one predicts the rheological behavior of dough used in baking); and farinography (Parameters: WA, water absorption; DDT= dough development time, STB= stability, and MTI= mixture tolerance index). In the sample set considered, significant correlations between GlutoPeak parameters and the other analyses/parameters studied were observed. The significant correlations ($r \geq 0.50$) noted related with GlutoPeak evaluation points were: MT-1PK with P ($r=0.51$), P/L ($r=0.53$), P/G ($r=0.54$), and WA ($r=0.79$); and PMT-1PK with GI ($r=0.53$), E ($r=0.56$); WA ($r=-0.66$) and STB ($r=0.51$). These preliminary results look promising, suggesting that screening in breeding programs, using rapid flour check method (with GlutoPeak rheometer), can be useful for wheat early generation selection.