P-2.17 GLUTOPEAK TEST FOR PREDICTION OF WHEAT TECHNOLOGICAL QUALITY AND BAKING PERFORMANCE OF BRAZILIAN TROPICAL WHEAT SAMPLES

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The GlutoPeak is a quick and on a small-scale method, and has been proposed as an alternative to evaluate wheat and as a tool to predict the baking quality of flour. It performs a shear test to measure the aggregation of gluten. The traditional rheological tests, alveography and farinography, need more sample amount and are time-consuming. To know the end-use of wheat samples it is necessary to perform a great number of analyses, including, besides the rheological, the physicochemical and baking tests. The wheat cultivated in the central Brazil region, also known as Brazilian Tropical wheat, where the Cerrado biome (Brazilian savanna) is predominant, is characterized by its good performance for baking (high gluten strength and stability). In the last years, the Embrapa cultivar BRS 264 has been the most used for bread production, although more recent genotypes as BRS 394 and BRS 404 are also used, and new lines are tested every year within Embrapa Breeding Program. As commercial samples are a mixture of more than one cultivar, in this assay six samples were tested: BRS 264, BRS 394, BRS 404, PF 100368 line, two mixtures, BRS 264 with 30%PF 100368, and BRS 264 with 50% PF100368. The objective of this study was to investigate the relationship between GlutoPeak and traditional analyses used to evaluate technological quality (physicochemical and rheological) and baking test in Brazilian tropical wheat samples. These six samples were characterized by different methods of analyses and the data obtained were submitted to Pearson's correlation analysis ($p < 0.05$). GlutoPeak parameters showed high and significant correlations with some important parameters of wheat technological quality evaluation. The main correlations were from GlutoPeak parameters with gluten index, wet and dry gluten; with elasticity index (alveography); and water absorption (farinography). Also, this study showed promising results, suggesting that “expanded” profile (GlutoPeak rheometer) can be very useful for differentiation of wheat genotypes, showing the contrast in gluten aggregation behavior of Brazilian wheat genotypes samples.

Keywords

T. aestivum, gluten aggregation, rheology, wheat quality, baking test.