

Grain quality and end use of Kazakh wheat varieties

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Aim: The classification of Kazakh spring wheat varieties hardness, protein, end product. Commercial spring varieties of Kazakhstan represent as hard red, middle hard red and middle hard white. Above 50% varieties have 8-10 point (scale by P.Payne) of HMW glutenin. Protein content (11.4-19.8%) has determined 34.3% by genotype; 46.1% – environment; 19.6% - g x e interaction.

42% of Kazakh varieties was evaluated as high level of protein (13-16%); above 50% varieties have non stability protein content (11-16%).

Samples of different Kazakhstan wheat varieties were provided for evaluation against current Australian wheat grades. Quality evaluation completed at Agrifood Technology using the standard test milling and flour, dough and end-product tests routinely carried out on harvest samples, and those submitted for variety classification. The Kazakhstan samples were all high in wheat protein content above 13%, Kazahstanskaya rannespelaya was exceptionally high at 14,9% protein. All the Kazakhstan samples were high in protein content, the Australian samples clearly have an advantage in milling quality in the order of 2-5% corrected extraction. Low levels of flour ash and high extraction rates are so important for most Asian foods. Apart from samples Omskaya 18, the Kazakhstan samples have balanced dough properties, which were quality similar to the Australian wheat grades. Sample Omskaya 18 has very strong dough properties which could be considered unbalanced. End product test varied for all of Kazakhstan wheat varieties, however Yellow alkaline noodle test demonstrated the superiority of the Australian wheats for this product type. Apart from samples Saratovskaya 29 the Kazakhstan wheats produced poorer Straight bake results, however performance of samples Omskaya 18 and Kazahstanskaya rannespelaya was very good in the Sponge and dough test bake.