Review of: "Technological quality of wheat grains and flour as affected by nitrogen fertilization and weather conditions"

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The article evaluates the technological quality of wheat grain and flour due to influence of genetics, crop management, and the environment. Interaction among genotype, nitrogen (N) fertilization and weather conditions in different regions were assessed in detail. Increasing N rates from 40 to 120 kg ha $^{-1}$ enhanced the concentrations of grain protein and wet gluten, but they did not influence dough gluten strength and the commercial classification of the flour. Nitrogen fertilization also influenced the flour yield, dough tenacity and elasticity index, depending on the genotype × environment interaction.

The article is well written and can provide beneficial information to wheat farmers, millers, and bakers. The selection of the wheat genotype for the given growing area is important, as is the selection of the dose of nitrogen fertilizer used. Despite the higher N rate having increased the grain protein concentration in the three environments, these increases were of low magnitude. The authors indicated that the application of 40 kg ha $^{-1}$ N was enough for the plants to achieve a suitable grain protein concentration to meet the industrial requirements of mills and food companies that use wheat flour. This result is also significant from an economic point of view, as artificial nitrogen fertilizers are a valuable commodity. Technological quality is significantly affected by interaction genotype x environmental factors (rainfall and temperatures).

In addition, an excess of nitrogen can negatively affect the formation of valuable minor substances such as antioxidants (phenolic acids and in wheats with coloured grains flavonoids, carotenoids, or anthocyanins). Breeders are now focusing on new varieties of wheat with colored grain (yellow-, red-, purple- and black-grained) with high content of health-promoting pigments and polyphenolic compounds, where lower doses of nitrogen have a favorable effect on the content of these antioxidants.

To the article, I have some minor comments and recommendations:

In Tables 4 and 5 decimal commas should be replaced with decimal points.

Student-Newman-Keuls' test ($P < 0.05$) and Scott-Knott´s test ($P < 0.05$) in Statistical analysis, in Captions to Tables 3, 4 and 5: P is higher or equal to 0.05, I think that instead of this should be better to use P is lesser or equal to 0.05.