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

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Potential competing interests: No potential competing interests to declare.

The paper aims to improve the knowledge of the technological quality of wheat grains and flour influenced by the interaction between weather conditions and crop management (genotypes, N fertilization rates, irrigation) in different regions of wheat crop adaptation in Brazil in order to support farmers and bakery industries in their decision-making processes.

The paper is well written and interesting to read. It is well goal-oriented with the results discussed in detail. There are few shortcomings that could be easily addressed to improve the paper.

Specifically they are:

Material and methods - Statistical analysis

I recommend the authors to improve the descriptive part of the statistical analysis by inserting the R packages used for each analysis with the relative bibliographic reference also in order to allow the replicability of the results. I also suggest the authors to justify the choice of having performed the statistical analysis individually for each site and motivate the choice of tests used in the post hoc analysis (Student-Newman-Keuls test and Scott-Knott clustering algorithm)

Results - Weather conditions during the wheat-growing season

I suggest you mention Fig. 1a immediately after the sentence "*The wheat-growing season in PGrainfed had 148 days … and total precipitation of 520.4 mm*"

Results - Wheat technological quality of grains and flour

I'm not sure if the term stability is correct in the sentence "The HW had high environmental stability". Indeed, according to Evenson et al (1978), stability measures variation of a genotype across years, while variation of a genotype across locations is a measure of adaptability.

Table 4 - I suggest to specify in the caption that only the variables (and locations) where the genotype x N interaction was significant are reported in this table. Moreover I suggest postponing its appearance in the article after Table 3

Discussion

The meaning of the following sentence is not entirely clear to me : "*This finding may be attributed to the high number of*

record pairs (n = 180) in the dataset, which produced a highly significant correlation, but with a lower correlation coefficient (Cohen, 1988)".

I also recommend that the authors add a few sentences in the Discussion related to potential limitations and weaknesses of the study (such as only one-year data, few locations)

Conclusions

I suggest the authors include in the conclusions something related to future studies to strengthen and improve the main findings of this work