locations using two different fertilization treatments with three replications. For each cultivar, a linear equation was developed to predict the response of AW to PC. An independent set of trials were used to validate the application of these equations. The validation set was obtained with the same genotypes grown by triplicate in independent trials using three nitrogen application treatments, two years in one location. PC and AW were determined. The equations developed with the first set of samples were used to predict Alveograph W (PW) for the validation set. Regression analysis showed that although validation set PC was able to estimate almost one third of AW variability (r-square=0.29, P<0.0001), PW was able to explain over half of AW variability (r-square=0.55, P<0.0001). In order to simulate the results of segregations, two different criteria were used to group the validation set: PC and PW. The top third according to PW not only had higher average AW (317 Jx10-4) than the top third according to PC (296 Jx10-4), but moreover it had lower variability: coefficient of variation was 20 and 25%, respectively. The proposed system not only was able to segregate stronger wheats, but also to generate more homogeneous lots.

PO74

Effect of blast disease incidence on wheat technological quality

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Blast disease, also known as brusone (*Magnaporthe oryzae*), is endemic in Brazil's Cerrados region (Brazilian savanna). Infected heads produce small and wrinkled grains with low specific weight. Few cultivars are described as resistant and fungicides have low control efficiency. Little is known about the effects of these grains on the wheat flour and bread. The objective of this study was to investigate the effect on wheat technological quality (grain, its flour and bread) of grains with high (HI) and low (LI) blast incidence levels, obtained from infected fields. The study was performed on wheat grain samples from cultivar BRS 208, with HI and LI of blast, originated from two different locations: Planaltina, DF (2012-crop season), and Patos de Minas, MG (2013-crop season). Blast incidence was evaluated and related with results of wheat/flour samples analyzed by physicochemical (moisture, test weight, thousand kernel weight, hardness index, protein, falling number, experimental milling, gluten and flour color) and rheological (alveography and farinography) parameters, and bread making test. Significant differences were observed ($p \leq 0.05$) comparing samples with HI and LI blast incidence levels in relation to wheat quality parameters, by Tukey test. On the other hand, few significant correlations *($p \leq 0.05$)* of blast incidence with wheat quality parameters were found: with flour extraction (*r=-0.99*), flour color b* (*r=0.97*), and alveography parameters: flour extensibility (*r=-0.99*), tenacity/extensibility ratio (*r=0.99*), swelling index (*r=-0.99*), and tenacity/swelling index ratio (*r=0.97*), and bread external characteristics (*r=-0.97*). Based on these results it was possible to understand that increasing blast incidence, flour yield decreased and flour color became more yellowish (flour had a higher b* value). Also, flour become more extensible and with less water retention capacity. The bread making test showed that the blast disease did not change bread specific volume and internal characteristics significantly, but bread aroma and taste differences were observed.

PO75

Breeding more nutritious wheat

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Wheat cultivars that either load more Fe and Zn into the grain or improve the bioavailability of these nutrients in the human digestive system could contribute to the alleviation of malnutrition in many countries where wheat is a primary source of calories. Semi-dwarf wheat genotypes with enhanced Zn and Fe concentration and low levels of phytate and high fructan have been developed and their impact on animal nutrition, processing quality and P use-efficiency is being determined. Low grain phytate and high fructan are considered to be enhancers of micronutrient bioavailability. Preliminary results show that phytate and fructan are independent of yield, while micronutrient concentration is associated with the aleurone and therefore negatively correlated with yield. Evidence suggests that processing quality is not influenced by more extreme levels of phytate and fructan and low phytate wheat tends to be more P use-efficient. The nutritional value of different wheat genotypes is greatly influenced by the environment and the nutritional status of the soil. However, a significant genotype x environment interaction was observed indicating that cultivars with improved nutritional value adapted to specific environmental conditions can be developed.