BIOFORTIFICATION IN BRAZIL: IRON AND ZINC CONCENTRATION IN GRAINS ON WHEAT CULTIVARS GROWN IN DIFFERENT ENVIRONMENTS

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Biofortification of plant products has increased in importance around the world. Diets enriched with the consumption of wheat products are encouraged by food technologists. It is known that zinc deficiency causes growth retardation and immune dysfunctions, besides iron deficiency limits cells oxygenation, causing fatigue and reduced body defenses. It is estimated that 30% of the world population suffers iron deficiency anemia and that 80% is deficient in iron. In Brazil, through the Brazilian "BioFORT" program and the international "HarvestPlus" program, Embrapa began the selection of several biofortificated products, including wheat. The nutritional value of wheat products can be increased by the selection of genotypes with higher concentration of these nutrients. Iron and zinc are found mainly in the aleurone layer of the grains. Little is still known about the influence of the genetic and the environmental factors on the concentrations of iron and zinc found in the wheat cultivars and lineages currently in use in the country. The general objective of this research was to identify wheat cultivars with higher iron and zinc concentration and to use these genotypes in the Embrapa wheat breeding program, aiming to associate these characteristics also with stress tolerances and with good bread wheat cultivars. As initial results from four environments, the average values of the evaluated cultivars ranged from 19.30 to 44.01 ppm for iron, and from 20.50 to 36.83 ppm for zinc.

Keywords:
Bread wheat, Wheat quality, Biofortification, Wheat breeding