

**STUDIES IN TECHNOLOGICAL QUALITY OF CEREALS: WHEAT,
TRITICALE AND BARLEY**

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Embrapa Wheat located in Passo Fundo, Rio Grande do Sul state, is a Brazilian Public Research Institute that works basically with wheat, which is similar to hard spring wheat class. Embrapa Wheat also develops research on other winter cereals such as triticale and barley, as well as summer crops, like soybean and maize. Among the different research areas of crop production, studies on cereal technological quality are very important, especially because in many occasions the cereal end-use indication depends on that. The genetic breeding program of Embrapa demands evaluation of disease effects and environmental conditions on breeding line quality, so that efficient methods of analysis are necessary to characterize these cereal genotypes. Besides research requirements, we also need to answer technical evaluations that we are asked for, mainly about wheat, in practical situations of mills and food industry. Therefore, this lecture will focus on specific research that is conducted to investigate claims on technological quality of winter cereals. The presentation will be divided in three parts. Firstly, summarized studies on WHEAT will be presented as following, a) effect of wheat blast (*Pyricularia grisea*) in the technological quality: incidence and severity of this plant disease is associated with frequent rain and high temperature conditions, during grain filling stages, and they affect, mainly, the loaf bread flavor produced; b) studies using a quick alternative form to evaluate sprouted wheat: comparing with Falling Number official method, a rapid method using a kit, based on mono and polyclonal antibodies has presented equivalent results; and, c) analysis of technological quality aspects of wheat grains and flour will be presented. The second part will be about quality characterization of TRITICALE: this cereal which originated from a cross of wheat and rye is mainly used for animal feeding (mostly cattle); however, investigations into the use of triticale in cookies are under way. The third part will be about an experiment with BARLEY: although in Brazil, barley is traditionally used in malt production for beer industry, Embrapa genotype characterization to identify if they present qualities for food use is being carried out. Based on research with these cereals, it can be seen that many factors influence technological quality. Therefore, much is yet to be done on the science of cereal quality, including Brazilian demands in this area.