

BGC-O-3-2 KEYNOTE SPEAKER

## GRAIN QUALITY OF LATIN AMERICAN WHEAT CULTIVARS: CURRENT DEVELOPMENT AND FUTURE PERSPECTIVES

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**Keywords:** Wheat, genetic, cultivar, quality Grain compositional properties play an essential role in obtaining high quality end-products.

Developing wheat cultivars with desirable quality attributes is essential to meet consumer demands. A large majority of the wheat production in the Southern Cone region is obtained from genotypes released by the national institutes of agricultural research of the most important wheat producer countries in Latin America (Argentina, Brazil, Chile, Paraguay and Uruguay) and CIMMYT (International Maize and Wheat Improvement Center, Mexico), which have been breeding wheat cultivars for bread making for decades.

Traditional rheological and physicochemical tests have been used, in combination with specific analysis (e.g., sedimentation test, near infrared spectroscopy), to improve screening procedures. Recently, biotechnological tools have been included in the quality testing schemes. However, molecular markers have not always shown to be the best option to determine the actual processing quality of the cultivars.

Despite the continuous effort to release good quality cultivars, the grain received by the industry does not always fulfill its requirements, due to several reasons. Environmental factors seem to play a key role in this instability. Coordinated research among the national institutes and CIMMYT was undertaken in order to establish the most important factors determining wheat quality in the region. In the most recent project, genotypes released by the six institutes were grown in 20 environments, covering all Latin American wheat producing regions. Although the results confirmed the importance of environmental effects, it was not clear what makes one environment better than

others. Factors like location or water availability during the crop cycle could not explain significantly the variability in quality attributes within or among the cultivars. Agricultural practices to produce good quality wheat are well known, although their cost is not convincing enough to encourage farmers to use them. As a consequence, the cultivars and technology chosen by most farmers are intended to get higher yield, rather than good quality. National institutes of agricultural research are and will keep on developing cultivars adapted to the region, focusing on market requirements. The integration of these research institutes with the rest of the regional Academia and the food chain industry is critical to produce good quality wheat. ■