

Variability of grain albumen minor components and technological quality of wheat

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Technological wheat quality can be defined as its ability to meet the specifications needed for a given end-use. But this quality assessment is becoming more challenging due to climate change, agro-cultural practices and changing societal demands. EVAGRAIN is funded by the French National Research Agency and coordinated by the INRAE research unit BIA. The aim of this project is to design a Decision Support System (DSS) that would be able to give a quality assessment of wheat for various end-uses in the industry.

Many studies worked on the genetic and environmental impact on components of wheat grain but mainly focusing on starch and protein. Although these components have a proven role in bread making, minor components, such as lipids and pentosans should also take as much attention. Indeed, lipids have ability to interact with starch polymers and proteins, and have multiple impacts on the dough properties.

Pentosans, which are cell wall polysaccharides, are known for their strong water retention capacity, and water control is crucial in bread making.

This project is part of EVAGRAIN by integrating new wheat evaluation criteria through the study of these minor components of wheat flour.

This work will provide a better understanding of the role of minor components on the quality of grain products. The interconnection of the data and knowledge will allow to create a DSS and determine the most relevant wheat quality criteria for a given use.