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Technical Paper

No. 25

MAPPING QUALITY INPUTS IN THE WHEAT TO BREAD CHAIN

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It is a common practice to talk about the wheat to bread chain as though it is a single construct. In practice, the so-called 'chain' is a series of individual process steps with tenuous connections that require significant experience and expertise to link them together to deliver particular bread characteristics. A significant challenge has been and undoubtedly will remain the varying, largely natural, inputs from the major raw material, namely wheat flour. Our representation of the key elements and links in the wheat to bread chain are illustrated in the diagram below.

The traditional line taken in many breadmaking texts is to start with a consideration of wheat, followed by its milling and then the baking of wheat flour into bread. There is an equal argument for starting the discussion with bread quality, since that is the ultimate food that the consumer experiences. In other words, the diagram could be inverted to start by defining bread quality, then by examining the inputs that lead to that quality and end by defining wheat and flour milling requirements - an approach already taken in the Technology of Breadmaking (author Stanley Cauvain).

The mapping the various quality inputs in the process of converting wheat to flour and then bread, is underpinned by the absolute need to define the quality requirements (specifications) of the required bread products. These specifications will vary between geographical areas, according to historical traditions and with consumer expectations.

This Technical Paper aims to provide a structured overview as to how the various elements in the wheat to bread chain interact, and to identify the key inputs and outputs of the various stages. Links are provided to relevant, more detailed Technical Papers in the *BakeTran* range.

Importantly, this Technical Paper highlights opportunities for strengthening the understanding of the wheat to bread chain for the future. It raises important questions related to the collection and interpretation of objective data, and in doing so, supports the development of AI applications for breadmaking.

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