QUALITATIVE ANALYSIS OF FLOUR FROM DIFFERENT SECTIONS OF THE MILLING PROCESS FOR THE DEVELOPMENT OF SPECIFIC PURPOSES FLOUR: *PANNETONE AND COOKIES*

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ABSTRACT

In the bakery industry, physical and chemical characteristics of flour, mainly gluten and starch quality, are important parameters to consider when a specific bakery product is desired. The flour properties and behavior depend on the chemical composition of wheat grain and the grade of extraction of flour during the milling process.

This study aims to develop two specific flours for different bakery purposes: *panettone* and cookies, attending to the properties desired for those purposes.

Several samples were collected from different systems of the technological process of flour mill, distinguishing hard wheat milling and soft wheat milling. The study involved assessing the flour characteristics through various methods, including Near-Infrared Reflectance analysis, Alveograph analysis, SD Matic Test, Falling Number analysis, and gluten Index analysis.

After evaluating the biochemical and rheological properties of strong flour samples, the sample collected from [redacted] step of the milling process (corresponding to [redacted]) was selected to make *panettone* due to the great bread force, extensibility, and gluten quality that was measured at the laboratory. Otherwise, soft flour sample [redacted] during the soft wheat milling process was chosen to develop cookie specific flour because of its large extensibility and low gluten content.

The two selected flours were proved by baking the final bakery product. That *panettone* made with [redacted] sample flour achieved bigger volume and more airy texture than the *panettone* made with conventional flour. On the other side, the cookies made with [redacted] sample flour did not show significant differences from the cookies made with flour collected from the end of the milling process. Nevertheless, it is believed that [redacted] sample properties would be beneficial at industrial scale.

This study demonstrates that by collecting flour with different extraction grade, diverse properties can be obtained, which can be suitable for a specific bakery purpose.