FLOUR DISCRIMINATION FOR WAFER PRODUCTION

APPLICATION FAQs – 2019-037

Industrial processes usually do not appreciate changes in raw material quality. There is a strong need for controlling the properties of wheat flour to ensure it will perform well during processing and allow for a consistent final product which meets customer specifications.

The study presented below was done in partnership with an industrial wafer producer. The objective is to discriminate 2 "good" flours from a "medium" flour and a "bad" flour. The study demonstrates that the Alveolab complies with this objective.

Q1. ARE QUANTITATIVE ANALYSES ENOUGH TO DISCRIMINATE BETWEEN THE SAMPLES?

NO. *Methods such as protein content or Falling Number are not sufficient to segregate good and bad flour (**Table 1**).*

Q2. ARE THE STANDARD ALVEOGRAPHIC RESULTS DISCRIMINATING THE SAMPLES?

YES. *The standard Alveographic curves allow discrimination between the "bad" sample and the others. Nevertheless, the "medium" sample has a very similar behavior to one of the good flours (**Figure 1**). The Alveolab integrates a new feature allowing one to measure dough consistency during mixing. Using these tools it was possible to discriminate the "medium" sample as the one having the longest tolerance to mixing (**Figures 2 and 3**)*

Table 1: Quantitative results and process behavior for the samples to discriminate

Sample	Quality	Moisture content	Protein content	Falling Number	Comments
1	Good	14.5%	11.35%	342 s	Standard production
2	Good	14.1%	10.70%	411 s	Standard production
3	Medium	14.3%	10.83%	336 s	Gluten network too tenacious during mixing
4	Bad	13.2%	10.30%	395 s	Liquid dough, wafers are cracked or even broken

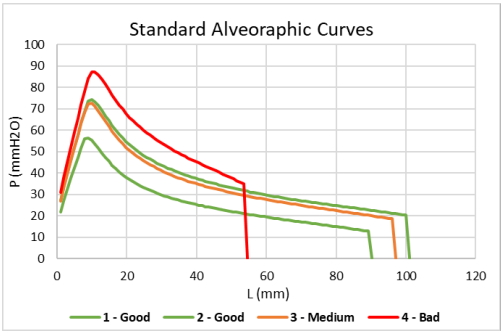

Figure 1: Standard Alveographic curves

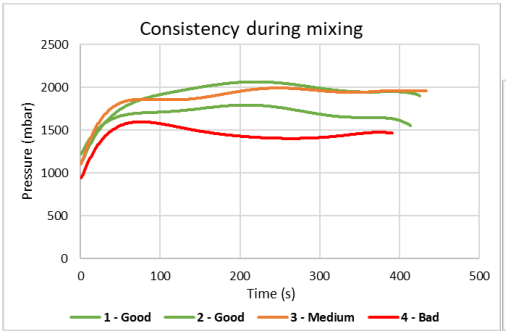

Figure 2: Mixing behavior

Figure 3: Tolerance during mixing

This document is a part of a more comprehensive study which is accessible upon request at: **labo.application@chopin.fr**

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