CHOPIN

[Quality control for grains and flour]

A New Tool For Measuring Damaged Starch in Flour

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Introduction

Damaged starch is of a major importance in all wheat flour based products. It can increase the water absorption capacity of the flour. In excess, it can be cause sticky dough and, at a later stage, flat undevelopped breads with a very coloured (red) crust. Despite this fact, in many countries, starch damage is not a daily control. One of the reason is that the standard enzymatic methods (AACC, Farrand, Audidier…) are quite long and complicated.

The need for a fast, simple and accurate measurement is real. Based on the Rapid F.T. experience, Chopin decided, in association with the CNAM to propose a new tool : the SDmatic (Fig.1).

Principle

The solution is heated to 35°C free iodin is electrochemichally produced thanks to the specific probe (Fig. 2 & 3). This creates an electrical current. The same probe will measure the current decrease resulting of the fixation of free iodin with damaged starch.

Figure 1

Operations

A solution is prepared with 120ml distilled water, 3 grams Potassium iodide, 3 grams Boric acid and 1 drop of Sodium thiosulfate (Fig. 4). When iodin has been created (see principle), 1 gram of flour is automatically introduced into the solution(Fig.5).

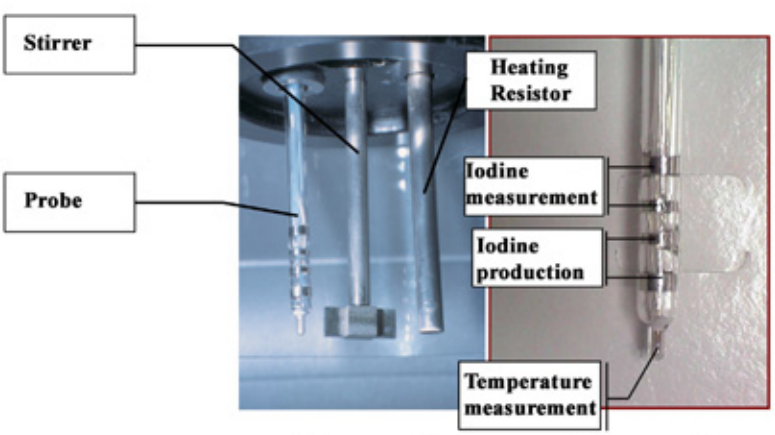


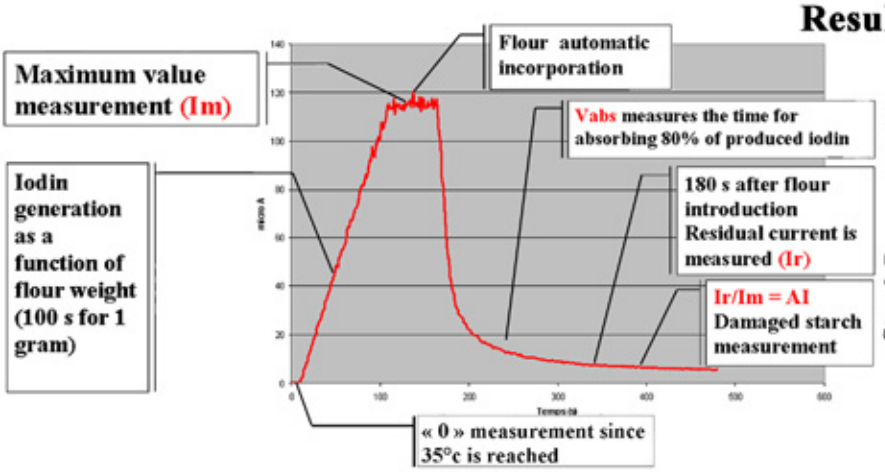
Figure 2

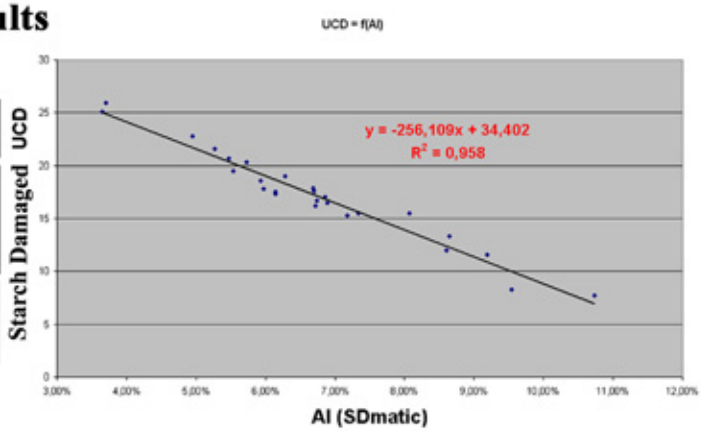
Figure 3

Figure 4

Figure 5

Results





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