

APPLICATION FAQs – 2017-048D

The use of modifiers in the production of baked goods is common practice today. L-Cysteine is commonly added to doughs to shorten mixing and fermentation time¹. It reacts with SS bonds in dough, breaking them with concomitant reduction to SH groups. The effect of cysteine on dough rheological properties was investigated using the Alveolab. This note summarizes the main findings of the work.



Q1. CAN THE ALVEOLAB BE USED TO EVALUATE THE EFFECT OF ADDED CYSTEINE ON DOUGH RHEOLOGY?

Yes. The Alveolab is perfectly suited to evaluate the impact of ingredients commonly used in the baking industry in particularly cysteine. (Figure 1).

Q2. WHAT ARE THE MAJOR CHANGES INDUCED BY CYSTEINE ADDITION ON ALVEOGRAPH RESULTS?

Cysteine supplementation results in dough weakening, associated with a decrease in Alveograph deformation energy (W) and tenacity (P). Alveograph extensibility (L) reached an optimum then decreases as cysteine addition increased.

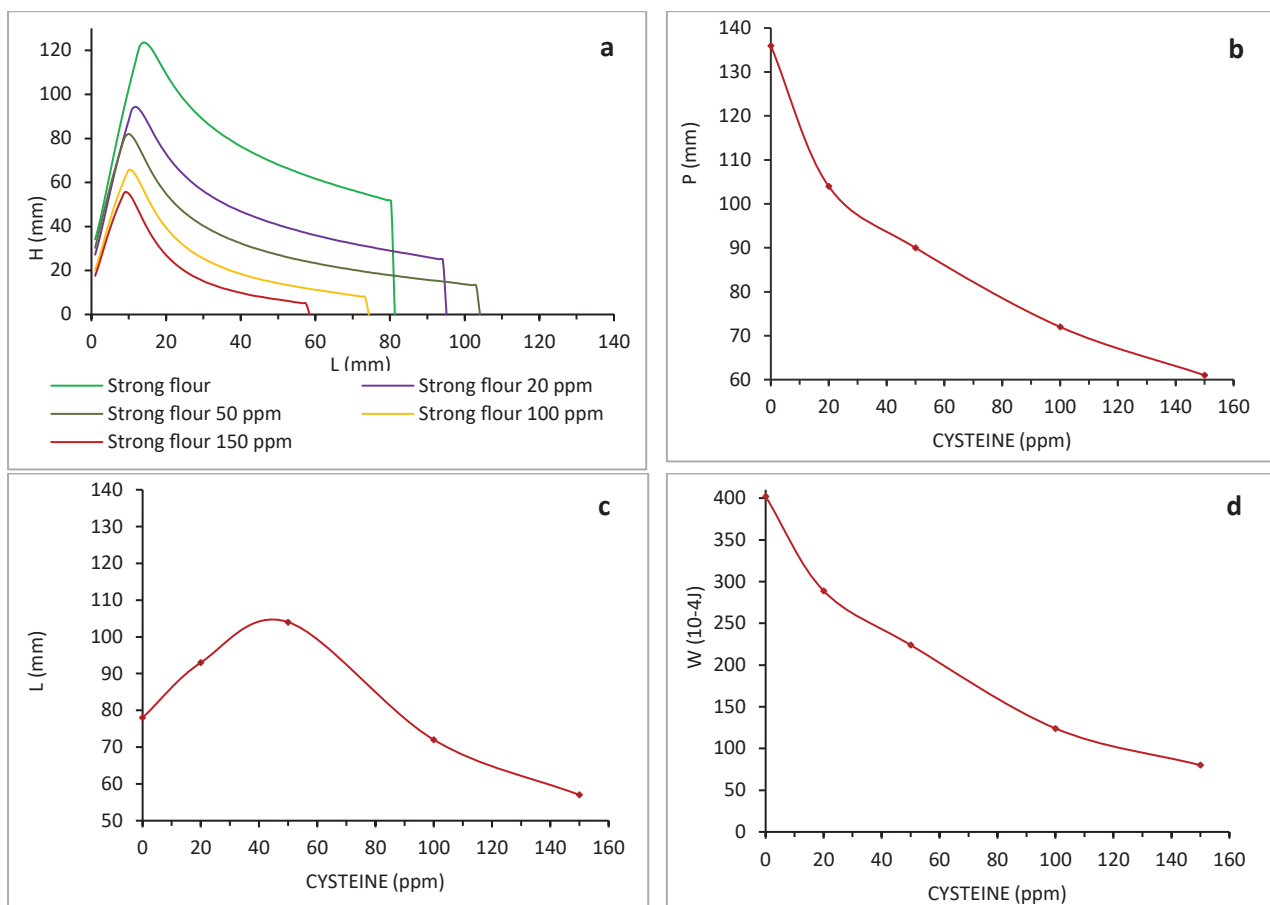


Figure 1: Alveolab curves and parameters of control and cysteine treated wheat flours. a: Alveograph curves of strong flour; b, c and d: Tenacity (P), extensibility (L) and deformation energy (W), respectively.

1- Hui Y.H., Corke H., De Leyn I., Nip W.K., Cross N. Bakery Products. Science and Technology. Blackwell Publishing, 2006.