

عنوان مقاله:

A review on natural enzymes as alternative for chemical additives in wheat flour

محل انتشار:

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خلاصه مقاله:

This paper critically reviews the key literature on evaluate the physicochemical properties and investigate rheological analyzes of wheat flours with several different additives. we evaluated the effects of nine commercial enzymes—fungal (AMY-F), bacterial (AMY-B), and maltogenic (AMY-M) α -amylases, fungal (XYL-F) and bacterial (XYL-B) xylanases, glucose oxidase (GOX), laccase (LAC), lipase (LIP), and transglutaminase (TG) on the rheological properties of common wheat flour. Falling Number (FN), farinography, and alveography analysess were carried out varying the enzyme concentrations from ۲۵ to ۸۳۳ U kg^{-۱}, aiming to reach baking quality. α -Amylases affected mainly the farinographic properties, reducing the water absorption (WA) and stability time (ST). AMY-B was the most effective enzyme to adjust the FN, needing ۱۵۰ U kg^{-۱}, while for AMY-F and AMY-M, it was necessary ۵۸۳ U kg^{-۱}. In all tests, XYL-B was more efficient than XYL-F, but both improved the W value and P/L ratio. At ۲۵ U kg^{-۱}, GOX increased the development time (DT), as well as the ST and the P/L ratio. LAC, which is not a commonly used enzyme, significantly improved the ST and W values, being an interesting oxidant agent. Moreover, the ideal enzyme concentrations determined were compared with those suggested by the suppliers, with under and over dosages observed, especially for α -amylases and xylanases

کلمات کلیدی:

Enzymes. Wheat flour. Rheological analysis. Falling Number. Farinography. Alveography

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