

EFFECT OF PEAR, APPLE AND DATE FIBRES FROM COOKED FRUIT BY-PRODUCTS ON DOUGH PERFORMANCE AND BREAD QUALITY

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Résumé / Abstract : Alveograph ; Visco-amylograph

This study examined the effect of the incorporation of flesh fibre concentrate (FFC) from apple, pear, and date pomaces on wheat bread dough performance and bread quality. The nutritional composition and techno-functional properties (water-holding capacity, oil-holding capacity, swelling capacity) of FFC were determined beforehand. Dough performance was evaluated by farinograph, alveograph and visco-amylograph. Bread quality was assessed by physical (weight, specific volume, and color) and textural (hardness and elasticity) parameters. Digital imaging analysis was also performed in order to better understand the observed effects. Results showed that the addition of FFC in wheat flour significantly improved (P<0.05) dough properties inducing an increase of water absorption (from 55 to 60 %), of stability (from 4 to 31 min), of tenacity (from 83 to 116 mmH₂O) , a reduction of extensibility (from 69 to 29 mm), of softening (from 60 to 20 BU), of breakdown (from 34 to 25 BU) and of setback (from 103 to 93 BU) in comparison to the control dough (without fibre). The formulation

containing FFC produced loaves that had various colors (crust, $0 < \Delta E^* < 10$ and crumb, $0 < \Delta E^* < 20$; ΔE^* corresponding to color variation), a comparable specific volume (2.7 vs 2.9 cm³/g for control) and a more aerated internal crumb structure compared to the control. During storage of breads at 20 °C, there was no significant difference (P<0.05) between enriched and control bread crumb and crust texture profiles.