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 Author:  [ADVANCED](#) | Volume  Page   
 Keyword:   |   

[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[PDF \(256K\)\]](#) [\[References\]](#)
**Effect of Substitution of Waxy-Wheat Flour for Common Flour on Dough and Baking Properties**
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The effect of substitution of waxy-wheat flour (WWF) for common wheat flour, ‘*Hermes*’ on dough and baking properties was determined. Flours consisting of 20% WWF and 80% *Hermes* (20 WWF) and 40% WWF and 60% *Hermes* (40 WWF) were used. Two other mixed flours were prepared for comparison: one consisted of 20% Chinese spring flour (CSF) and 80% *Hermes* (20 CSF) and the other of 40% CSF and 60% *Hermes* (40 CSF). Breadcrumbs became softer with increasing WWF substitution, and harder with increasing CSF substitution. From cross sections of these breads from 20 WWF and 40 WWF, the partial substitution of WWF for *Hermes* was considered favorable for baking results. Especially, 40 WWF made larger loaves and improved glutinous texture, such as the chewing property or adhesiveness of breadcrumbs, as compared with *Hermes* alone. DSC data showed that WWF retarded the staling of breadcrumbs during storage and also accelerated the refreshing of breadcrumbs with softness and glutinous texture after reheating. Substitution of WWF decreased the setback of viscosity under the holding temperature and suppressed the gelation of starch under cooling, both of which improved

the pasting property of starch. In addition, WWF appeared to suppress the formation of an insoluble network structure of starch during cooling, which improved the tolerance of gelatinized starch to the retrogradation. These results indicate that the partial substitution of WWF for common flour improved the softness and glutinous texture of breadcrumbs and retardation of staleness. Consequently, WWF might have applications in practical baking.

**Keywords:** [waxy-wheat flour](#), [breadmaking](#), [starch](#), [dough](#), [retrogradation](#)

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