

## IMPROVING BREAD QUALITY USING *DEINOCOCCUS GEOTHERMALIS* GLYCOGEN BRANCHING ENZYME

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Glycogen branching enzyme (GBE) catalyzes transglycosylation reaction producing  $\alpha$ -1,6-glycosidic linkages by cleaving an  $\alpha$ -1,4-glycosidic linkage. *Deinococcus geothermalis* GBE (DgGBE) has the unique activity to form a large number of short oligosaccharide side chains (degree of polymerization 3~5) from the reaction with amylose. To observe the influence of DgGBE on bread quality, we added 100 unit of the enzyme per kg of the flour at the step of mixing dough. During the fermentation, DgGBE treated dough showed 50~100% larger volume than control. After baking, the total volume and the specific volume of DgGBE treated loaf showed about 10% larger than those of control. The baked breads were sliced to 2cm of depth and stored in 25 degrees Celsius, and then the texture was evaluated by texture analyzer during storage time. Hardness and Chewiness of DgGBE treated bread increased slowly compared with those of the control. DgGBE treated bread showed a significant effect on antistaling.

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