

# Effect of germination on acrylamide reduction during baking of wheat

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■ **ABSTRACT** : Acrylamide is toxic compound, probable carcinogenic, formed via the browning process by maillard reaction between amino group of free amino acid asparagine and reducing sugar during heating of carbohydrate-rich foods. Wheat contains high level of these precursors. The main objective of this investigation was to study the effect of germination on reduction of acrylamide formation of baked wheat. Wheat soaked for 12 hours and germination at 25 °C for different time period 24, 48, 72 hours and baked at 200 °C for 20 min and un-germinated flour baked was considered as control. Acrylamide content was determined by Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS). The results of this study effective on acrylamide, control baked wheat found 0.153 mg/kg of acrylamide and 24 hours germinated wheat flour baked which found 0.026 mg/kg, 48 hour sample found 0.016mg/kg and 72 hours sample found 0.005mg/kg. Acrylamide reduced after 24 hours germination 83.00 per cent and after 48 hours germination acrylamide decreased from baked wheat dough was 89.54 per cent and after 72 hours germination decreased 96.53 per cent. In conclusion, germination was an efficient way to reduce acrylamide content in baked wheat.

■ **KEY WORDS** : Acrylamide, Wheat, Germination process, Baking, Mitigation strategy

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