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The effects of enzymes and emulsifiers on dough properties and bread quality prepared by whole wheat flour: A review

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Background and Aims:

Despite the health benefits associated with whole grains, the consumption of whole grain products is significantly lower than the recommended levels. Whole wheat bread often comes with several distinct characteristics such as low volume, hard texture, dark and coarse crust, bitter taste, and reduced shelf life. Therefore, to increase the consumption of whole wheat bread, it is necessary to improve its quality and sensory attributes. This article examines the effect of various enzymes and emulsifiers on the properties of whole wheat bread and dough, particularly their impact on bread volume and hardness.

Results: According to the results obtained from various studies, it has been reported that xylanase enzyme reduces the water absorption of whole wheat flour and, through the hydrolysis of arabinoxylans, increases the volume and softness of the bread. Regarding amyloglucosidase, this enzyme can decrease or increase the resistance to stretching of whole wheat dough depending on the amount used.

Conclusion: Enzymes and emulsifiers are among the most important functional ingredients that can improve the properties of whole wheat dough and bread when used in their formulation. In general, to achieve the best quality in whole wheat dough and bread, the use of multiple improvers in combination is recommended.

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