Moderate decrease of pH by sourdough fermentation is sufficient to reduce phytate content of whole wheat flour through endogenous phytase activity.

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Abstract

Whole wheat bread is an important source of minerals but also contains considerable amounts of phytic acid, which is known to impair their absorption. An in vitro trial was performed to assess the effect of a moderate drop of the dough pH (around 5.5) by way of sourdough fermentation or by exogenous organic acid addition on phytate hydrolysis. It was shown that a slight acidification of the dough (pH 5.5) with either sourdough or lactic acid addition allowed a significant phytate breakdown (70% of the initial flour content compared to 40% without any leavening agent or acidification). This result highlights the predominance of wheat phytase activity over sourdough microflora phytase activity during moderate sourdough fermentation and shows that a slight drop of the pH (pH value around 5.5) is sufficient to reduce significantly the phytate content of a wholemeal flour. Mg "bioaccessibility"of whole wheat dough was improved by direct solubilization of the cation and by phytate hydrolysis. From: J Agric Food Chem. 2005 Jan 12;53(1):98-102.