IDLI PREPARATION FROM MILLET/RICE/BLACKGRAM BLENDS 11. CHANGES IN PHYTATE PHOSPHORUS AND MINERAL CONTENTS DURING FERMENTATION

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Phytates play a significant role in decreasing the bioavailability of multivalent cations through the formation of insoluble complexes. However, fermentation is known to reduce the phytate in legume seeds[1]. Hence the present study investigated the hanges in phytate phosphorus and mineral contents of various proportions of millets/rice/blackgram blends. The samples for analysis were taken at 4, 8, 12 and 16 hours of fermentation. The fermented blends were used to prepare the idli at 16 hours.

Our analysis showed that phytate phosphorus accounted for about 50% of total phosphorus in rice, 80% blackgram, 44% in finger millets, 65% in common millets and 86% in foxtail millets. The phytate phosphorus contents declined steadily during the fermentation process. The final idli products from rice/ blackgram, 25% finger millet/ 75% rice/ blackgram and 25% common millet/75% rice/blackgram blends contained only about 20% of the phytate phosphorus determined in the original batter. The phytate phosphorus content of these final products were 0.25, 0.26 and 0.20 mg/g respectively, these levels very low to be of any nutritional consequence[1]. The other mineral elements (phosphorus Calcium, Iron, Potassium, Magnesium, Zinc and Manganese) analysed showed little changes during the fermentation process.

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References:

1. Reddy, N.R. and Salunke, D.K., J.Food Sc 45: 1708.