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## Effect of enrichment with immature wheat flour on microbiological properties of tarhana during fermentation period

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Tarhana is traditional fermented food made from cereal, yoghurt and different herbs. It is generally produced by blending cereal flour, especially wheat flour, yoghurt, *Saccharomyces cerevisiae*, salt and several spices followed by fermentation period 1-7 days. Provincial diversities of ingredient types and production manner in Turkey, change nutritional, sensorial and physicochemical properties of this product. Tarhana were enriched with various ingredients such as legume, oat flour and semolin a replaced wheat flour for increasing nutritional value. In our study, we fortified tarhana by adding immature wheat grain (IWG) and then we observed microbiological and chemical properties of tarhana by comparing control samples. We collected immature wheat grains at the 26 (IWG 1) and 36 days (IWG2) of anthesis and these materials were worked up into flour. IWG flours were added as 10, 30 and 50% to whole wheat flour in tarhana formulation and microbiological analysis were executed at the fermentation days of 0, 2 and 4. TMAB, *Lactobacillus* spp., *Streptococcus* spp. and yeast and mold counts had a continual decreasing graphic during all fermentation days in tarhana enriched with 10, 30% IWG1 and control samples. *Lactobacillus* spp. Decreased from 0 Day to 2 Day and then increased at the end of 4 days in fortified 50% IWG1 tarhana. *Streptococcus* spp., TMAB and yeast and mould count decreased throughout 2 days and they were permanent from 2 days to 4 days. IWG2 tarhana enriched with 10, 30% immature wheat and control tarhana had paralel microbiological results with IWG1 tarhana with 10 and 30% immature wheat. For fortified 50% IWG2 tarhana, all microbiological numbers decreased since end of 2 days, afterwards while *Streptococcus* spp. and TMAB increased, there were unimportant reduction for *Lactobacillus* spp. And yeast-mold count from 2 days to 4 days. Consequently we are of the opinion that immature wheat flour should be used for tarhana because of increasing both microbiological and physicochemical features at the same time depending on the physicochemical and sensorial results of this study.

### Biography

Talha Demirci has completed his Master at Selcuk University. He has started his PhD education in 2013 at Selcuk University, Department of Food Engineering and has worked as Research Assistant since 2011 at the same University. He has published more than 10 scientific papers on microbiology.

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