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Use of kefir made from natural kefir grains in sour dough bread making

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Kefir is a fermented milk drink that widely consumed throughout the world as a source of natural probiotics and prebiotics and many benefits to health that has been proven by scientific studies. In this study, the possibilities of use of yeast in kefir in bread making and its effects on dough were investigated. Kefir grains contain more lactic acid bacteria than yeast. In this study, kefir grains were kept in different food based solutions at a certain time and temperature; therefore, the yeast population became more dominant than lactic acid bacteria. Three different types of kefir were produced with the treatment grains and the control grain. The yeasts isolated from the kefir were identified by PCR method. *Saccharomyces cerevisiae* and *Kluyveromyces marxianus* were identified as the yeast strains. Sourdough production was made from these kefir grain samples (KAL, SIT and KEF). The microbial and chemical properties of sourdough samples were compared with made with baker's yeast. Acidity, pH, lactic acid bacteria count, yeast count, organic acids and aroma substances were analyzed in dough samples. pH values of the samples (baker's yeast sourdough-KAL sour dough-SIT sourdough-KEF sourdough) were 4.28-3.63-3.76-3.36; yeast contents (log kob/g) 8.34-7.30-7.04-7.55, respectively. The amounts of lactic acid 51.2-195.1-163.8-298.7 ppm) and the amounts of acetic acid were determined as 0.63- 1,0-4.45-20.12 ppm in baker's yeast sourdough-KAL sourdough-SIT sourdough-KEF sourdough samples. *Saccharomyces cerevisiae* from kefir grains as a different yeast source were used in bread production and their sensory characteristics were determined. Sour dough bread obtained from the SIT sample had the highest scores.

Biography

Zeynep Banu Guzel Seydim graduated from Ankara University in 1991 and she pursued her Master's degree at the same university. Her thesis was on exopolysaccharide production of yogurt bacteria at different incubation temperatures. After completion of her first Master's degree, she started second MS in Clemson University in 1994. She worked on her PhD at the Clemson University during 1996-2001. Her dissertation title was "Fermentative, microbiological and biochemical properties of kefir and kefir grains." She worked as a Research Assistant and Research Specialist in Clemson University. She is a faculty member in Suleyman Demirel University, Isparta, Turkey, since 2001. She became a full Professor in 2010. Her research interests are fermented food products, natural fermentations, bioactive substances, functional foods, improvement in kefir/ kefir grain technology, vinegar fermentation, total antioxidant capacities and animal tests. She was involved in MITOFOOD project. She holds 4 patents, and has two firms in Technopark.

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