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Phenolic compounds of kiwi vinegar

Havva Nilgun Budak[1], **Funda Davras**[2], **Merve Ozen**[1] and **Zeynep Banu Guzel Seydim**[1]
[1]Suleyman Demirel University, Turkey
[2]Fermante Vinegar, Inc. Suleyman Demirel University Technopark, Turkey

Vinegar is produced from agricultural materials containing starch or sugar via sequential ethanol and acetic acid fermentations and is used in a variety of food. The production of vinegar typically involves a first fermentation where simple sugars in raw material are converted to alcohol by yeasts. The resultant alcohol is further oxidized to acetic acid by AAB(Acetic Acid Bacteria) during the last fermentation. Kiwi fruit is cultivated in many countries, such as New Zealand, Italy, Japan, Greece and France and is one of most popular fruits worldwide. Recent studies have shown that kiwi fruit is a rich source of vitamins, fructose, galactose and minerals, isoflavones and flavonoids. It was reported that kiwi has antioxidant, cardiovascular protective, anti-carcinogenic, neuroprotective and cardio protective activity. The aim of this study to make kiwi vinegar and to determine its phenolic substances. The kiwi vinegar was obtained using surface culture method. Kiwi juice was immediately inoculated with *Saccharomyces cerevisiae* (0.02%) for ethanol fermentation for 30 days at 25°C. After the completion of the ethanol fermentation, acetic acid fermentation of kiwi wine was initiated with the addition of two-year aged vinegar (1:3 ratio) using surface technique with natural fermentation at 25°C and continued for 60 days at 25°C. Total titrable acidity of vinegar samples were measured according to AOAC methods. pH was measured using a pH meter. Phenolic compounds were quantified by High Performance Liquid Chromatography (HPLC) and antioxidant capacity test was carried out using the oxygen radical antioxidant capacity (ORAC) method. Average of total titrable acidity and pH in kiwi vinegar were found 3.2 g citric acid/ L and pH 3.41, respectively. Gallic acid and chlorogenic acid of vinegar were 70.48 mg/L and 16.78 mg/L in kiwi vinegar. Production of kiwi vinegar with natural acetic acid fermentation would be important for the fermentation industry.

Biography

Havva Nilgun Budak has a Bachelor of Science degree in Food Engineering from Suleyman Demirel University, Isparta, Turkey. She holds a Master's and PhD degree in Food Technology. Her research interests are: bioactive substances, functional foods, fermented food products, apple vinegar, wine and its phenolics, total antioxidant capacities (ORAC, TEAC), animal tests. Her patent work is entitled: Functional drink vinegar and vinegar beverage to obtain the functional method. Her research projects (2009-2010) include: Cost Action FA0602, Bioactive food components, mitochondrial function and health (MITOFOOD).

nilgunbudak@sdu.edu.tr

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