

# Effect of Fermentation and Subsequent Pasteurization Processes on Amino Acids Composition of Orange Juice

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The fermentation of fruit produces significant changes in their nutritional composition. An orange beverage has been obtained from the controlled alcoholic fermentation and thermal pasteurization of orange juice. A study was performed to determine the influence of both processes on its amino acid profile. UHPLC-QqQ-MS/MS was used for the first time for analysis of orange juice samples. Out of 29 amino acids and derivatives identified, eight (ethanolamine, ornithine, phosphoethanolamine,  $\gamma$ -amino-n-butyric acid, hydroxyproline, methylhistidine, citrulline, and cystathionine) have not previously been detected in orange juice. The amino acid profile of the orange juice was not modified by its processing, but total amino acid content of the juice (8194 mg/L) was significantly increased at 9 days of fermentation (13,324 mg/L). Although the pasteurization process produced partial amino acid degradation, the total amino acid content was higher in the final product (9265 mg/L) than in the original juice, enhancing its nutritional value. © 2015, Springer Science+Business Media New York.

Alcoholic fermentation

Amino acids

Orange juice

Thermal pasteurization

UHPLC-MS/MS

amino acid

analysis

chemistry

fermentation

fruit and vegetable juice

pasteurization

sweet orange

tandem mass spectrometry

Amino Acids

Citrus sinensis

Fermentation

Fruit and Vegetable Juices

Pasteurization

Tandem Mass Spectrometry