Journal of Chemical, Biological and Physical Sciences

An International Peer Review E-3 Journal of Sciences

*Available online at*www.jcbsc.org

Section A: Food Biotechnology

CODEN (USA): JCBPAT Research abstract

Analysis Of The Influence Of Temperature, Organic And Inorganic Cations On Ftir Spectra Orange Juice

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Abstract: Orange juice was added with organic and inorganic cations (NaCl, $MgCl_2$, spermine, spermidine and putrescine) also was heat-processed at 30 and 75 °C using a controlling temperature device (Peltier) to inactivate enzyme pectin methylesterase (PME). Spectral changes in the spectra orange juice region between 3000-3800 cm^{-1} were caused by the addition of NaCl, $MgCl_2$ and polyamines, affecting the region corresponding of OH bonds in the infrared region, causing spectral shifts to low or high frequencies depending on the temperature level and the cation type. For lower temperature treatment is possible observe a valley follow by a peak since the first times in the kinetic, but to high temperature, 75 °C, a peak follow by a valley is present in the first kinetic times and when the treatment times is more than ten minutes. The study by infrared spectroscopy FTIR showed spectral changes in the region of 3000 and 3800 cm^{-1} associated with the presence of organic and inorganic cations in orange juice subjected to heat treatment.

Keywords: Orange juice, cations, pectin methylesterase, FTIR

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