The Extraction and Evaluation of the Bromelain and Phenolic Compounds from Pineapple Peel through Ultrasound Radiation

Rosas Ortiz, Gisell (School: Institución Educativa Jorge Eliécer Gaitán)
Jiménez Cantor, Daniela (School: Institución Educativa Jorge Eliécer Gaitán)

The extraction and evaluation of the bromelain and phenolic compounds from pineapple peel through ultrasound radiation. The pineapple peel contains components such as polyphenols and bromelain, these substances possess important medicinal properties (Chinchilla 2014, Almeida et al. 2018, Kelly 1996, Rathnakumar et al. 2017) Current methods to extract these compounds are not efficient, they may cause damage to the environment and they have a high economic cost (Gallardo et al. 2008, Li et al. 2016, Rathnakumar et al. 2017). The experimental process was carried out in order to answer this inquire, some samples of pineapple peel and ethanol were prepared at different concentrations (20%, 30% and 40%), this process was carried out three times and subsequently entered into the ultrasound, modifying the intensity (low, medium and tall). The extract obtained is then filtered and the liquid part is centrifuged, then the liquid phase is discarded leaving the precipitated phase. With the extracts obtained, the phenols are quantified by the Folin-Ciocalteu method and in its review, the presence of these compounds is predominant. It was observed that the higher the concentration of gallic acid, the greater the absorbance. In the qualification of bromelain by Lowry's method, it was concluded that the greater the amount of protein, the greater the absorbance. Bromelain was quantified in the extract obtained at a medium intensity. It is observed that the higher the concentration of solvent (ethanol), the greater the number of phenolic compounds and bromelain.

Awards Won: