INHIBITION OF HYALURONIDASE ACTIVITY BY BOROJO PHENOLIC EXTRACTS (BOROJOA PATINOI CUATREC) IN TWO RIPENING STAGE

Jiménez Javier Alexander,1, Díaz Luis Eduardo2, Sotelo Luz Indira3. 1Candidato a Master en Diseño y Gestión de Procesos. 2PhD. En Química, Docente Facultad de Ingeniería. 3PhD. En Ingeniería de Alimentos, Grupo de Investigación Procesos Agroindustriales. Universidad de La Sabana, e-mail: indira.sotelo@unisabana.edu.co

The antioxidant capacity of polyphenols related to the content and type present in different plant tissues is a hypothesis to explain the anti-inflammatory capacity of extracts of vegetable origin as a result of inhibition of enzyme hyaluronidase. Borojó (Borojoa patinoi Cuatrec) is a fruit rich in polyphenols, used traditionally as anti-inflammatory, invigorating and wound healing in Colombian Pacific. This study evaluated the inhibition of hyaluronidase activity by action of phenolic extracts. Borojó was used as substrate and sodium hyaluronate as inhibitors Borojó ethanolic extracts from two stages of maturity (IM = Brix/acid) at different concentrations (5 - 25% v/v). The % inhibition was calculated as: [(A_{conc} control - A_{conc} sample)] / A_{conc} control x 100%, greater inhibition was obtained with extracts of green Borojo (MI=1.54, 25 % (v/v) and 1886.45 ± 185.49 mg eq-gallic acid/100g) reaching a maximal inhibition of enzyme activity of 45.4 ± 9.39% whereas mature Borogó (MI=4.7, 25 % (v/v) and 648.82 ± 248.46 mg eq-gallic acid/100g) was achieved an inhibition of 20.12±0.70%. Were performed with solutions of gallic acid concentration 20% v/v to confirm and evaluate the inhibitory effect, reaching a maximum inhibition of 24.22±7.68%. These results demonstrate the importance of studying fruit ripeness prior to consumption, in order to take advantage of phenolic compounds during maturation is impaired, the difference phenolic components of these extracts will discuss individually those who make an active inhibition of the hyaluronidase.

**Keywords:** Hyaluronidase, polyphenols, Borojó, inhibition.