EVALUATION OF MILK-CLOTTING, pH AND TEMPERATURE IN EXTRACTS OBTAINED FROM THE BREADFRUIT LATEX


Cheese production is nothing more than the interaction of art with tradition, technology and the science and can be done through the use of a coagulant. Proteases from vegetables are a possible rennet substitutes, but most of these enzymes studied have been considered inappropriate for producing undesirable results in the production of cheese. Breadfruit is an exotic tree in Brazil, where acclimatized very well. The fruit is rich in carbohydrate, protein, lipid, fiber, minerals and vitamins however little is known about its latex. Therefore this study aimed to evaluate the potential of Breadfruit (Artocarpus altilis var. apyrena) latex as a source of milk clotting proteases, with the next partial characterization. The latex was collected, homogenized and filtrate. The substrate for clotting experiments was the skimmed milk power solution (12% in 10 µM CaCl₂). The proteolytic activity was measured by a colorimetric assay using azocasein as substrate to determining the optimum temperature and pH for its use. The bicineconic acid (BCA) method for quantification of total proteins. The enzyme activity was analyzed under different conditions of temperature (35 to 80°C) and buffers of different pH (7 to 10.7). The specific activity of coagulation was 910.75 U mg⁻¹ and protease activity of 1.78 U mL⁻¹. The optimum pH and temperature for protease activity was Tris-HCl 8.5 and 50 °C. The stable temperature and pH over a 180 min period were 35 to 80°C and at phosphate 5.8. The results indicate that enzyme is considered a possible replacement for calf rennet.