Vitamin C retention in fresh or pectin-coated papaya slices with or without additives during air-drying

Diego Canizares & Maria A. Mauro. UNESP – São Paulo State University, Institute of Biosciences, Languages, and Physical Sciences (IBILCE), Department of Food Engineering and Technology, Rua Cristóvão Colombo, 2265, 15054-000, São José do Rio Preto, São Paulo, Brazil.

The aim of this work was evaluate the retention of vitamin C in fresh and pre-treated papaya (Carica papaya L.), after air-drying and during storage. Vitamin C is a natural antioxidant and nutritionally important for the human health. Edible coatings applying on surface of the foods can prevent oxidative reactions. Egg white is an important protein source. Hydrocolloids edible coatings possess good barrier properties to gases and are soluble in water. In addition, it can incorporate additives in edible coatings because of its polymeric structure. Papaya slices were immersed in pectin solution at 2% (w/w) or in pectin solution (2%) with vitamin C (1%) or even in pectin solution at 2% (w/w) with commercial egg white (2% w/w). The pectin coating was jellified by immersion in calcium lactate solution at 2.8% (w/w). The pectin-coated and non-coated slices were air-dried at 60 and 70 °C temperatures. Vitamin C and water content was analyzed in fresh papaya and in coated papaya, before and after drying. All drying experiments were done in triplicate. Analysis of variance was applied to experimental data to identify significant differences at 95% confidence level (p<0.05). Vitamin C retention in pectin-coated and non-coated samples was calculated in relation to fresh papaya. Retention was not affected by temperature. Coatings applying did not enhance the retention in comparison to non-coated samples, excepting the edible coating with Vitamin C. We obtained considerable vitamin C content in the samples with vitamin C incorporated in pectin coating, after drying.