

Anthocyanins stabilization onto nanoclay: an evaluation of the physical-chemical and activity properties

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Anthocyanins stabilization onto nanoclay: an evaluation of the physical-chemical and activity properties

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In this work, jambolan (*Syzygium cumini*) extract content anthocyanin (ACNs) was stabilized by adsorption on montmorillonite (Mt) and characterized to the color, pH, crystalline and chemical properties. First of all, ACNs were extracted and quantified by absorbance before and after the stabilization. Total ACNs concentration in jambolan extract was 1.70 mg/g of fresh fruit weight. The pH of the extract was 2.5 and showed a red color typical of ACNs in acid solution (pH < 3). The red color in the extracts was associated with the presence of ACNs predominantly in the form of flavylium cations. A good dispersion of the characteristic peaks of clay was observed, at $2\theta = 6.7^\circ$, 19.8° , 20.8° , 26.6° , 36° and 60° , and which is attributed to T-O-T structure of montmorillonite and the SiO₂. The spectrum of Mt showed bands attributed to Al-O-Si and Al-Al-OH bending, Si-O stretching, hydration and structural OH groups were observed. Specifically, in the region between 3627 and 3000 cm⁻¹, the intensity of the absorption band is associated with the OH groups of the water molecules present in the clay samples. The pH increased after ACNs stabilization onto Mt, as well as the color change with pH and show good antioxidant activity.