Influence of feed flow rate on properties of Jaboticaba skin (*Myrciaria jaboticaba*) powders produced by spray drying

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Jaboticaba is a typical Brazilian fruit, rich in anthocyanins which are concentrated in its skin. Therefore, jaboticaba skin represents an alternative source to the production of dyes in powder form. This work aimed to evaluate the influence of different feed flow rates on the properties of jaboticaba powders obtained by spray drying. Jaboticaba skin was macerated with 70% ethanol at pH 2.0, the extracts were concentrated and solutions of 30% maltodextrin 10DE were added before spray drying process. Feed flow rates evaluated were 180, 360, 540 mL.h⁻¹, at 180°C of inlet air temperature. The dependent variables were outlet air temperature (OT), anthocyanin retention (AR), moisture content (MC), hygroscopicity (H) and scanning electron microscopy (SEM). Higher values of AR (79.85% ± 0.03) were obtained using the flow rate of 360 mL.h⁻¹ (p<0.07). Moisture contents of powders obtained by flow rates of 360 mL.h⁻¹ (4.49% ± 0.02) and 540 mL.h⁻¹ (5.09% ± 0.61) did not differ (p>0.07). The values of H were statistically different (p<0.07) in all flow rates, with values ranging from 13.64 ± 0.65 g H₂O.100g⁻¹ (180 mL.h⁻¹) to 4.97 ± 0.12 g H₂O.100g⁻¹ (540 mL.h⁻¹). Regarding SEM analysis, it was observed the presence of spherical and irregular microparticles, smaller than 10 µm, and the average particle size didn’t vary with the different flow rates. Based on these results, it is recommended to use the feed flow rate of 360 mL.h⁻¹ on the production of jaboticaba skin powders, due to higher AR and intermediate values of OT, MC and H.

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