Effect of different carrier agents on the microencapsulation by spray dryer of Jaboticaba extracts (*Myrciaria jaboticaba*)

Pollyanna Ibrahim Silva, Paulo Cesar Stringheta, Reinaldo Francisco Teófilo, Paula de Aguiar Cipriano, Isadora Rebouças Nolasco de Oliveira, Flávia Marquini Ramos. Department of Food Technology, Federal University of Viçosa – UFV, Campus Universitário s/n, 36570-000, Viçosa – MG, Brazil.

Jaboticaba is a typical Brazilian fruit, rich in anthocyanins that are concentrated in its skin, which can represent an alternative source to produce dyes. Usually, fruit extracts are used both as liquid and powder microcapsules by industries. This study aimed to evaluate the effect of different carrier agents on microencapsulation of jaboticaba extracts by spray dryer, as well as the solubility of powders in a model system of isotonic drink. Jaboticaba skin was macerated (70% Ethanol/pH 2.0) and the extracts were concentrated. The tested carriers were: 30% maltodextrin (MD), 25% arabic gum + 5% maltodextrin (AG/MD), and 25% Capsul™ + 5% maltodextrin (CAP/MD), added to jaboticaba extracts just before spray drying process. The feed flow rate used was 360 mL.h⁻¹, at 160°C of inlet air temperature. The dependent variables were overall color difference, anthocyanin retention, hygroscopicity, moisture content and solubility. MD was the carrier agent that provided the lowest overall color difference (p<0.05). CAP/MD presented the lowest anthocyanin retention (79.92% ± 1.50) (p<0.05), when compared to MD (99.02% ± 1.17) and AG/MD (100.23% ± 0.93). The use of AG/MD produced the most hygroscopic powders (17.55% ± 0.83), when compared to MD (13.85% ± 0.01) and CAP/MD (13.70% ± 0.07). The powders obtained with different carriers didn’t differ regarding moisture content, and presented high (above 90%) and similar solubilities (p>0.05). Besides, the obtained powders didn’t influence the osmolality of isotonic drinks. Concerning all variables, it is recommended the use of MD to obtain a powder with desirable characteristics for industrial application.

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