Study of stability and the tendency to caking of the cocoa beverage powder.

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Knowledge of the mechanisms involved in the caking of the cocoa beverage powder assist in preventing this loss of quality attribute of food powders, contributing to the products have greater stability and are safe for consumption. The study objective was to monitor the stability of the lecithined and agglomerated with steam cocoa beverage powder, stored at 25 and 35 °C, a relative humidity of 84%. The products were formulated with ground sugar, corn maltodextrin, cocoa powder alkaline and were evaluated for a period of 168 days through the analysis of water activity, moisture, angle of repose, wettability, color and scanning electron microscopy. Over time, the moisture gain and storage of the cocoa beverage powder at a temperature of 35 °C significantly changed the angles of repose of the product and its color. The lecithined product was more susceptible to the caking with the formation of lumps from the 63 th day of storage. It was observed an increased of the wettability for the lecithined product stored at 25 °C compared to the lecithined product stored at 35 °C; for the product agglomerated with steam there was no change in the wettability. Morphological analysis of agglomerated products during the storage time showed the presence of fractures in the granules, which are indicators of the beginning of the collapse of the structure of the product resulting from caking. In the case of lecithined cocoa beverage powder, it was observed more evidence of the powder compaction.