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Cocoa bean (*Theobroma cacao* L.) tissues susceptibility to insects and fungi spoilage by stereo and scanning electron microscopy

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Dry cocoa beans (*Theobroma cacao* L.) post-fermentation features and tissues susceptibility to living organism proliferation were investigated through stereo (SM) and scanning electron microscopy (SEM). Sound and selected fungi spoiled bean were utilized. The following characteristics related to insects and fungi spoilage of the shell and edible parts were identified. Shell: The pulp residues still remaining after fermentation, which are highly hydrophilic and nutritious fine tissue (streaks), apart from the crinkled and uneven surface, both allow conidia deposition and humidity absorption including insect eggs and larvae. Regarding the edible part; the uneven and groove parenchyma surface at cross section, they also behave as trapping tissues for living organism's proliferation and humidity entrance. Different fungi spoiled cocoa bean shell and edible part are also shown with hyphae, conidia and mycelia detailed by SEM micrographies. Due to its pulp residues and SEM characteristics, the cocoa bean shell was shown to be quite prone to living organism proliferation after fermentation. Therefore, moisture control is a must to prevent and/or control their proliferation and so deterioration. Knowledge on cocoa beans morpho-histological susceptible characteristics is of interest to help chocolate industries to improve final products quality.

Biography

Kreibich H H has completed his BSc from Federal University of Santa Catarina on Food Science and Technology and is a Graduate (Doctor of Philosophy) in Food Science at the Department of Food Science and Technology (Laboratory of Food Mycotoxicology and Contaminants, Center of Agricultural Sciences, Florianopolis, Santa Catarina State, Brazil.

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