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Scanning electron microscopy characteristics of post-fermentation dry cocoa beans (*Theobroma cacao* L.) for chocolate industry

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The morpho-histological characteristics of sound post-fermentation whole cocoa beans (*Theobroma cacao* L.) - the raw material utilized by the chocolate industry, were identified by stereo (SM) and scanning electron microscopies (SEM). The shell (a thin lignin rich, protective wall) structure comprises of different tissue layers (2 to 5) and cells (long/flattened), with vascular bundles distributed throughout its tissues. Pulp residues were detected a set of mucilaginous cell fusion (streaks) on shell surface and a thin skin (fine hyaline membrane) linked to both, the inner shell & outer edible part (including its parenchyma folds) surfaces with a shiny texture. The cocoa beans edible part had different cell layers (containing proteins bodies and lipids droplets) randomly distributed. Fat bloom presence was observed throughout the parenchymal folds surfaces as fine blades clusters with different grouping formats. Some bean features that may allow fungi/moisture entrance were identified specially on the shell surface. Knowledge of the morpho-histological characteristics of cocoa bean is of interest to understand its deterioration susceptibilities for further prevention/control application (cocoa beans quality and safety improvement wise.

Biography

Kreibich H H has completed her MSc 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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