

~~The removal of~~ A part of the mucilage surrounding ~~the~~ cocoa beans can be ~~done~~ removed manually or mechanically. ~~However,~~ The ~~the~~ mechanical process, ~~however,~~ requires special machinery that may be costly ~~too expensive~~ for traditional cocoa farmers in third world countries. On the other hand, ~~the~~ mucilaginous pulp contains sugary compounds such as glucose, fructose, sucrose, and pentose, which could be good substrates for microbial growth.

Comment [A1]: More than one substrate is being referred to in the former part of the sentence. Therefore, the plural form (*substrates*) is appropriate here.

~~Indeed,~~ during the fermentation process of ~~the~~ cocoa bean, a number of particular microorganisms secrete pectinolytic enzymes that break the chemical structure of ~~the~~ mucilage, resulting in the chemical removal of the pulp or draining of the mucilage. Yeasts ~~have been reported to~~ play a significant role in the pulp degradation process. Cocoa pulp can be readily fermented by yeasts such as *Saccharomyces cerevisiae*, and be converted into ~~producing~~ an alcoholic beverage. *S. cerevisiae* var. Chevalieri in particular, has been reported to have ~~the~~ pectinolytic activity. Yeast ~~is also suggested~~ may also ~~to~~ decrease pulp and bean acidity through ~~the utilization of~~ citric acid utilization. The secondary products of yeast metabolism (e.g., organic acid, aldehydes, ketones, higher alcohols, and esters) and glycosidase production are likely to be significant and ~~should~~ may impact ~~affect~~ the quality of the beans and chocolate. However, these potentially important influences ~~previously~~ have been previously overlooked in the literature and require further investigation. The addition of a microbial starter to cocoa bean fermentation ~~in order to~~ for improvinge the quality of the fermentation process has been ~~researched~~ studied elsewhere ~~previously~~. Kustyawat studied the addition of mixed starter cultures including ~~a mixed~~ *S. cerevisiae*, *Lactobacillus lactis*, and *Acetobacter aceti*, ~~starter cultures~~. Away studied the addition of *Saccharomyces*, *Acetobacter*, *Lactobacillus*, and *Streptococcus* starter cultures.

Comment [A2]: In American English, a comma is used after the abbreviations *i.e.* and *e.g.*