

Colour Characteristics of Dried Cocoa Using Shallow Box Fermentation Technique

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Abstract : Fermentation is well known as an essential process in cocoa beans. Besides to develop the precursor of cocoa flavour, it also induce the colour changes in the beans. The fermentation process is reported to be influenced by duration of pod storage and fermentation. Therefore, this study was conducted to evaluate colour of Malaysian cocoa beans and how the pods storage and fermentation duration using shallow box technique will effect on it characteristics. There are two factors being studied ie duration of cocoa pod storage (0, 2, 4, and 6 days) and duration of cocoa fermentation (0, 1, 2, 3, 4 and 5 days). The experiment is arranged in 4 x 6 factorial design with 24 treatments and arrangement is in a Completely Randomised Design (CRD). The produced beans is inspected for colour changes under artificial light during cut test and divided into four groups of colour namely fully brown, purple brown, fully purple and slaty. Cut tests indicated that cocoa beans which are directly dried without undergone fermentation has the highest slaty percentage. However, application of pods storage before fermentation process is found to decrease the slaty percentage. In contrast, the percentages of fully brown beans start to dominate after two days of fermentation, especially from four and six days of pods storage batch. Whereas, almost all batch have percentage of fully purple less than 20%. Interestingly, the percentage of purple brown beans are scattered in the entire beans batch regardless any specific trend. Meanwhile, statistical analysis using General Linear Model showed that the pods storage has a significant effect on the colour characteristic of the Malaysian dried beans compared to fermentation duration.

Keywords : cocoa beans, colour, fermentation, shallow box

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