

PALM-BASED CHOCOLATE PASTEL

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INTRODUCTION

Chocolate is eaten simply because people find pleasure in it. Through taste and texture there is probably no other product that gives so much enjoyment. Chocolate also makes a pleasant and acceptable gift to convey some element of feeling.

Chocolates are usually formulated with cocoa butter, cocoa liquor, sugar and lecithin, and in the case of milk chocolate, milkfat is added. However in chocolate pastel the cocoa is left out completely. The products rely on the milkfat and added essence like vanilla, lemon, orange and others for their flavour. The colour of these products is basically white while food colour can be added to improve the appeal and variety. These products have a good bloom resistance because of the incorporation of milkfat. Milkfat is well-known to have properties that inhibit bloom formation (Minifie, 1982).

In the past, cocoa butter was used as the fat medium for chocolate pastel and is still used where white and dark chocolates are layered together to create an interesting speciality confection (Jackson, 1988). However, lauric fats also provide better eating characteristics but the principle disadvantage is their susceptibility to hydrolytic rancidity and tendency to produce soapy off-flavours as a result of this process (Urbanski, 1990).

PRODUCTION OF PALM-BASED CHOCOLATE PASTEL

Palm mid-fraction (PMF) has excellent physico-chemical properties for use in chocolate-pastel. PMF does not impart a waxy taste and contains no *trans* fatty acids. PMF which also has a low content of linoleic acid is therefore not prone to oxidation. The ingredients for palm-based chocolate pastel are shown in *Table 1*.



Palm-based chocolate pastel.

TABLE 1. INGREDIENTS FOR
PALM-BASED CHOCOLATE
PASTEL

| Ingredients |
|------------------------|
| Fat |
| Full cream milk powder |
| Skim milk powder |
| Sugar |
| Lecithin |
| Flavour |
| Colour |

Figure 1 shows the steps essential for the production of palm-based chocolate pastel. The pastel can be manufactured using conventional chocolate making equipment. This involves mixing of the solid constituents with some fat until a uniform consistency is obtained. The mixture is then passed through the roller mill to get a uniform particle size.

The next step in pastel making is conching or emulsification process. Usually, prolonged conching at an elevated temperature is not considered to be beneficial. Sometimes this gives a negative impact upon the quality of the product.

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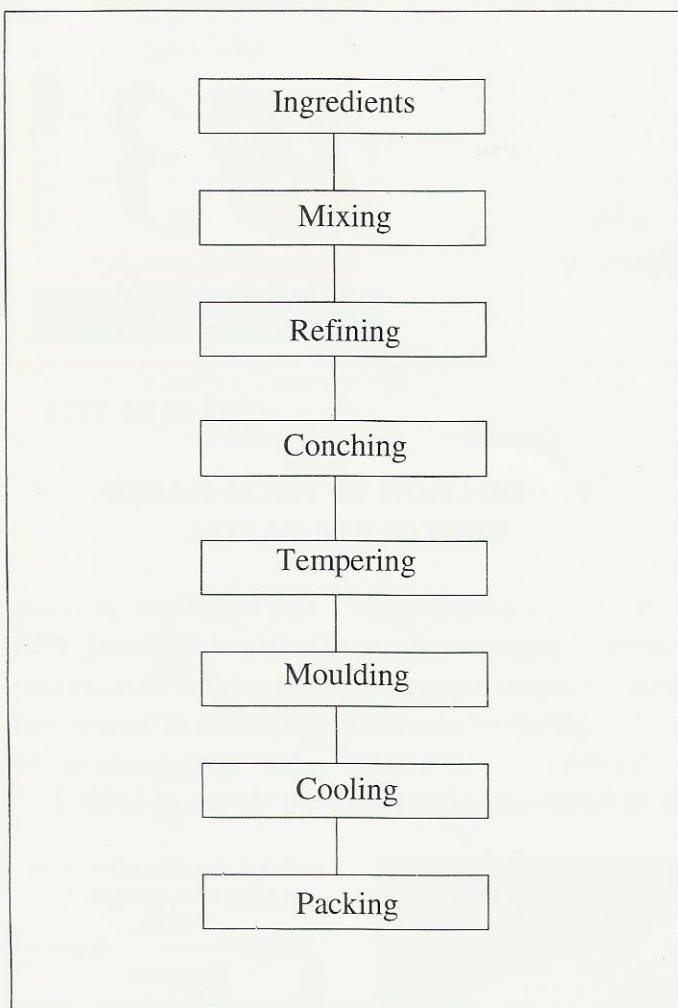


Figure 1. Flow diagram of palm-based chocolate pastel.

Chocolate pastel made from palm showed low in the tempering temperature compared to cocoa butter. The chocolate needs to be tempered because of the symmetrical triglyceride present. They are mainly POP, POS and SOS where (P = Palmitic acid, O = Oleic acid and S = Stearic acid). It has been observed that during solidification of palm-based chocolate pastel, the product showed low in the solidification temperature. This is due to the presence of milkfat.

Storage study conducted on palm-based chocolate pastel shows the product has good bloom resistance comparable to the cocoa butter pastel.

ECONOMIC FEASIBILITY

The use of PMF in chocolate pastel is economically feasible from the cost of raw material point of view. Cocoa butter is notably one of the most expensive fats, costing RM6903 and RM6184 per tonne in 1992 and 1993 respectively. It is assumed that the price of CBEs are estimated at 70% of cocoa butter. PMF based chocolate pastel is comparable to cocoa butter pastel and has market potential on the basis of per unit price.

CONCLUSION

Chocolate pastel can be manufactured from palm mid-fraction. The product has a comparable quality to cocoa butter pastel owing to their good mouth feel and high oxidative stability.

REFERENCES

- MINIFIE, B W (1982). Bloom, Microbiological and Other Spoilage Problems. *Chocolate, Cocoa and confectionery: Science and Technology*. Second Edition. Avl Publishing Company, In. Wesport, Connecticut p. 494.
- JACKSON, K (1988). Recipes. *Industrial Chocolate Manufacture and Use*. Blackie and Son Ltd. Bishopbriggs, Glasgow G64. p. 326.
- URBANSKI, J (1990). White Chocolate and Confectioner's Coatings. *The Manufacturing Confectioner*. p. 67.

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