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USE OF 'MIXTURE RESPONSE SURFACE' METHODOLOGY IN OPTIMIZING FORMULAE FOR CASSAVA COOKIES

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Abstract

We optimized the formulation of cookies containing wheat flour, cassava flour, and cassava starch by using 'mixture response surface' methodology and employing consumer acceptance tests. Objective measurements were also determined. The use of mixture response surface methodology enabled us to test wider ranges of each of the three components, using a few points in the triangle. Formulae containing higher amounts of cassava starch significantly had the highest spread factor, the cookies appearing deformed or flat. Texture and shape seemed to be limiting factors. Significant correlations between moisture or spread factor and shape or texture were also observed. Results of this study may be useful for developing baked goods with composite flours. Cassava flour (0%-100% substitution) and cassava starch (0%-57% substitution) can then be added. The amount of wheat flour, however, has to be adjusted for the blend to reach a total of 100%. This amount is never known when traditional standardization procedures are used.

Note: This manuscript was incomplete (copies of the figures were mislaid)