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Title: Biochemical Characteristics of Taro (*Colocasia esculenta*) Flour as Determinant Factors of the Extend of Browning During Achu Preparation

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Abstract: Achu is a thick porridge traditionally made in center Africa by boiling taro corms and cormels followed by peeling and pounding in a mortar. The present studies were performed with two key objectives in mind. Firstly to gain a better understanding of the basic processes of the browning reaction that can occur during preparation of Achu. Secondly to identify a variety that is much less susceptible to these browning reactions and especially during reconstitution of its flour into Achu. Traditional and reconstituted achu were prepared from six taro varieties and their organoleptic and biochemical characteristics were assessed. Mean values obtained in g/100 g dry weight were as follows: reducing sugars 1.3-2.3; total phenols 0.03-0.07; amino groups 0.05-0.1; phenolics and procyanidins 0.03-0.11. The browning reaction that occurred during the reconstitution was significantly correlated (R^2 = 0.74; $p<0.05$) to the concentration of total phenolic compounds in the flours used. There was a high correlation (R^2 = 0.89; $p<0.05$) between the reduction in phenolics and a reduction in browning reactions. Irrespective of variety, reconstituted Achu was less acceptable and browner than traditional Achu, but of all the flours tested, those derived from the taro varieties Ibo Ekona and Ibo Ngdere showed a lower susceptibility to browning reactions during reconstitution.

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