

Effects of Low-Methoxyl Pectin on Physicochemical and Sensory Properties of Reduced-Calorie Sorrel/ Roselle (*Hibiscus sabdariffa* L.) Jams

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Abstract: Low-fat/ reduced calorie products were originally targeted for diabetics but now the focus is on healthiness. The global prevalence of diabetes is on the increase and may be addressed by controlling the total dietary carbohydrate and calorie intake. This study investigated the effects of low-methoxyl (LM) pectin on physicochemical and sensory properties of a reduced-calorie sorrel (*Hibiscus sabdariffa*) jam with sucralose. Sorrel calyces were treated with 0.5% pectinase to form puree. The puree was processed to jam at 90°C for 30 minutes, then at 100°C for 2 minutes upon the addition of 8% sucralose and three levels (1.5, 2.0, 2.5%) of calcium added LM pectin for gelation. The addition of xanthan gum was at 2% w/w. The effects of higher LM pectin increased ($P<0.01$) the moisture content and texture but reduced water activity and total titratable acidity. The additional varying levels of LM pectin resulted ($P<0.05$) in lighter, more chromatic and less bluish-red colored jam. The texture became firmer ($P<0.01$) with higher levels of LM pectin. A sorrel jam with 1.5% LM pectin had total soluble solids of 16°Brix, 0.96% citric acid and pH 3.3. This treatment was liked slightly to moderately in texture and overall acceptance. On storage the jam became less ($P<0.01$) bright and bluish-red on storage at 4° C for 28 days. Most panelists would purchase the reduced - calorie sorrel jam.

Keywords: Sorrel, *Hibiscus sabdariffa*, sorrel/roselle, reduced-calorie, low-methoxyl pectin, sucralose, texture.