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**Effect of the nutritional composition on the textural quality of two gherkins
(*Cucumis sativus* L.) varieties (Ajax & Vlasset) on brine fermentation**

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Gherkin (*Cucumis sativus* L.) is an important cucurbitaceous vegetable. The pickling type gherkins are produced in Sri Lanka since 1988 for the export market and production has expanded over several agrological regions. Considering the scarcity of scientific information on local gherkin varieties, including their nutritional composition, this study was undertaken to quantify the proximate and mineral compositions. Two locally grown gherkin varieties (Ajax and Vlasset) were tested for proximate composition (moisture, dry matter, ash, mineral, protein, fat, dietary fibre and carbohydrate) of raw fruits (AOAC methods). Also, with 6 month of brine fermentation, firmness measurements (FTA) of the two varieties were recorded and evaluated.

Vlasset and Ajax varieties contained 96.30% and 95.54% moisture, respectively. The ash, protein and fat were higher ($p < 0.05$) and dietary fibre, carbohydrate lower in Ajax. Mg, K and Zn content were higher ($p < 0.05$) in Ajax with values of 16.60 ± 1.47 , 194.0 ± 7.80 and 14.69 ± 0.40 ppm, respectively, while the Vlasset variety had lower values. Ca (10.62 ± 0.59 ppm) and Na (13.46 ± 0.43 ppm) were greater in Vlasset than in Ajax. Both varieties showed K to be highest followed by Zn, Na and Ca while Mg amount was secondly highest in Ajax and lowest in Vlasset.

Firmness variation of both exocarp and mesocarp of Vlasset showed a similar pattern while giving maximum reading in the 2nd month after fermentation. Firmness variation of exocarp and mesocarp of Ajax was different while maximum value was recorded in the 5th and 2nd months, respectively.

Even though the initial moisture content was higher in Vlasset than in Ajax variety the better textural quality was apparent in Vlasset supported by physicochemical properties such as high dietary fibre, carbohydrate, minerals (Ca, Na) and a higher firmness in mesocarp tissue than exocarp.

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