ABSTRACT

Anna Marie Kwee (00000003621)

UTILIZATION OF MORINGA OLEIFERA LEAF AS GREEN GRASS JELLY IMITATION
(xiv + 48 pages: 10 tables, 8 figures, 19 appendices)

Moringa oleifera leaves are rich in protein and calcium (5.8g Protein and 261mg Calcium/100g) but is rarely used in Indonesia, except in vegetable soups. This leaf has been used to fight malnutrition in African countries, because of its fast growth and tolerance to different weather conditions. In Indonesia the tropical temperatures create an optimal weather for Moringa to flourish. Because the consumption can benefit normal diets as well, this experiment’s goal was to utilize the leaf to be formulated into a grass jelly. This product was chosen because ‘es cincau’ is a locally favored dessert. Before using the Moringa leaf, pre-treatments were tried to determine the most effective times of boiling with minimal nutrition degradation. Cooking the leaves in boiling water for 3 min was found to be most effective. Compared to the traditional green grass jelly (cincau) the leaf of Moringa naturally does not contain enough pectin to form a gel on its own. Therefore commercial pectin was added into the formulation. Combinations of three levels (2, 3 and 4%) for both pectin and leaf powder concentration were combined with sugar and water. Physicochemical and sensory analysis were done on each formulation of the jelly. As a result, the leaf concentration was a prominent factor to the hardness and cohesiveness of the jelly, having more effect than the different levels of pectin concentration. The color lightness also decreased with increasing levels of leaf concentration. For sensory acceptance, the results did not show a statistically significant difference between formulations, in either scoring or hedonic. The critical attribute of texture was attempted to be improved in the following stage, by adding a second gelling agent into the formulation. Either agar (1%) or konjac (1%) was used in combination of the same pectin levels as before, all formulations using the highest level of leaf concentration (4%). This increased the acceptance of the jellies in all sensory parameters measured (aroma, texture and taste). Therefore, it can be concluded that the texture affected the perception of the panelists on the other attributes. The utilization of the Moringa leaf was accomplished, although the acceptability can still be improved.

Keywords: Moringa oleifera, green grass jelly, pectin, agar, konjac, cincau, nutritious alternative and malnutrition.

References: 31 (1971-2016)