

The Production of Ice Cream with Granulated Sugar and Palm Sugar Substitution as Supplementary Feeding for Stunted Toddlers

Mutiara Nur Saharany
*Clinical nutrition study program
Health departement*

ABSTRACT

Stunting is a health problem caused by chronic malnutrition that remains high in Indonesia, with a prevalence in Jember Regency reaching 34.9%, exceeding the WHO standard. Prevention efforts are carried out through the provision of nutritious supplementary foods, one of which is the development of ice cream with palm sugar substitution as an alternative source of zinc that is acceptable to toddlers. This study aimed to develop and analyze the characteristics of ice cream substituted with granulated sugar and palm sugar as supplementary feeding (PMT) for stunted toddlers. The research design used a Completely Randomized Design (CRD) with five treatments consisting of different comparisons of granulated sugar and palm sugar: P1 (9:1), P2 (8:2), P3 (7:3), P4 (6:4), and P5 (5:5), with five replications. The results showed that the ice cream snack had an average zinc content ranging from 99 to 142 mg per 100 grams, with no significant differences between treatments. Total solids ranged from 22.37 to 23.86, and overrun ranged from 112% to 136%, both without significant differences between treatments. The best organoleptic characteristics were found in treatment P3 (70% granulated sugar and 30% palm sugar), which had a slightly light brown color, sweet taste, slight palm sugar aroma, and soft texture. The best ice cream formulation contained 78.3 kcal of energy, 22.2 grams of fat, 19.2 grams of protein, 36.9 grams of carbohydrates, and 0.1 mg of zinc per 75-gram serving, thus, the product has not yet met the criteria as a zinc-rich food based on the regulations set by the Indonesian Food and Drug Authority (BPOM RI). The product achieved a 100% acceptance rate (6 participants) among toddlers aged 1–3 years.

Keywords: *stunting, ice cream, palm sugar, zinc*