

SUPPLEMENTARY FEEDING OF UNDERNOURISHED SCHOOLCHILDREN AGED 6-9 YEARS, UTILIZING FNRI-DEVELOPED FOOD PRODUCTS: EFFECTS ON NUTRITIONAL STATUS

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ABSTRACT

Background: The Sixth National Nutrition Survey (2003) revealed that the prevalence of Iron Deficiency Anemia (IDA) among schoolchildren, 6-12 years old, is 37.4% while Vitamin A Deficiency (VAD) is 36.0%. If uncorrected, these can result to serious health, developmental, and economic problems. Supplementary feeding continues to be one of the major nutrition interventions to address malnutrition among children. The FNRI-DOST has developed a wide variety of nutritious food products that can be utilized for supplementary feeding. **Objective:** To assess the effects of school-based supplementary feeding on the nutritional status of children utilizing FNRI-developed food products. **Methods:** A total of 103 and 113 schoolchildren in the supplement-fed (Calapacuan Elem. School) and control (Matain Elem. School) groups, respectively, were included in the study. After deworming, the supplement-fed group was given either iron-fortified instant *bihon*, squash-supplemented bakery products (loaf bread, *pandesal*, and bun) or iron-fortified chocolate crinkles, plus an iron-fortified juice drink or vitamin A-rich juice daily for 100 days from Monday to Friday, during recess time. The control group was given deworming drugs only at the start of the study. Hemoglobin (Hb), plasma ferritin (PF) and plasma retinol (PR) levels were determined using standard methods. Weight and height were measured. Food intake data were collected using 24-hour food recall method. Measurements at baseline and endline were taken. **Results:** Among anemic children, the prevalence of anemia decreased from 100% at baseline in both group to 20.4% in the supplement-fed group and 65.3% in the control group at endline ($P < 0.01$, between groups). Baseline prevalence of IDA was 26.5% and 11.1% among the supplement-fed and control groups respectively. After 100 feeding days, IDA prevalence significantly dropped at 8.2% in the supplement-fed group and remained at 11.1% prevalence in the control group. The number of children having VAD in the supplement-fed group was 3 (6.1%) at baseline and had decreased to 1 (2.0%) after 100 feeding days. There were 6 (8.3%) children in the control group who were low/deficient in vitamin A at baseline and endline. Among underweight children, the prevalence of underweight in the supplemented group decreased, from 100% ($n=79$) at baseline to 78.5% ($n=62$) after 100 feeding days, while the prevalence of underweight in the control group decreased slightly from baseline ($n=64$, 100%) to endline ($n=58$, 90.6%). The prevalence of underweight was significantly lower in the supplement-fed group than the control group at endline. The mean intake (excluding the supplementary foods given) of energy, protein, iron, and vitamin A of schoolchildren in the supplement-fed and control group both decreased at endline compared to their baseline levels although the groups' intakes were not significantly different. **Conclusion:** The FNRI-developed food products rich in vitamin A and iron were effective in improving the prevalence of underweight and iron status of schoolchildren over a period of 100 feeding days. **Recommendation:** It is recommended that the food products be used in feeding programs and that these be locally-produced to cut down on cost. Similar studies may be done to

determine improvement of vitamin A- status among vitamin A deficient children using FNRI-developed food products.

