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Formulation, Nutritive Value Assessment And Effect On Weight Gain Of Infant Formulae Prepared From Locally Available Materia

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Abstract : The widespread problem of infant malnutrition in developing countries has stirred efforts in research, development and extension by both local and international organizations. As a result, the formulation and development of nutritious weaning foods from local and readily available raw materials which are cost effective has become imperative in many developing countries. Thus, local and readily available raw materials where used to compound and develop nutritious new infant formulae. The materials used for this study include maize, millet, cowpea, pumpkin, fingerlings, and fish bone. The materials where dried and blended to powder. The powders were weighed in the ratio of 4:4:4:3:1:1 respectively and were then mixed properly. Analysis of nutritive value was conducted on the formulae and compared with NAN-2 standard and results reveals that the formulae had reasonable amount of moisture, lipids, carbohydrate, protein, and fibre. Although NAN-2 was superior in both carbohydrate and protein, the new infant formula was higher in mineral elements, vitamins, fibre, and lipids. All the essentials vitamins and both macro and micro minerals where found in appreciable quantity capable of meeting the biochemical and physiological demand of the body while the anti-nutrients composition were significantly below FAO and WHO safe limits. Finally, the compounded infant formulae was feed to a set of albino Wistar rats while some other set of rats was feed with NAN-2 for the period of twenty seven (27) days and body weight was measure at three days intervals. The results of body weight changes was spectacular as their body weight over shot or almost double that of those animals that were feed with NAN-2 at each point of measurement. The results suggest that the widespread problem of infant malnutrition in the developing world especially among the low income segment of the society can now be reduced if not totally eradicated since nutritive and cost effective weaning formulae can be prepared locally from common readily available materials.

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