Formulation of a Complementary Food Fortified with Broad-beans (Vicia faba) in Southern Ethiopia

Afework Kebebu Gebrie1*, Susan J. Whiting2, Kebede Abegaz Ali1, Carol J. Henery2 and Wendy J. Dahl3

1Hawassa University, Hawassa, Ethiopia.
2University of Saskatchewan, Saskatoon, Canada.
3Foreign Affairs Trade and Development Canada/IDRC, Hawassa, Canada.

ABSTRACT

Objectives: Formulation of complementary diet for young children (from broadbean, maize and berly) and determine its nutrient value and acceptability.

Methods: Randomized controlled trial was used to prepare samples for processing and analysis. Laboratory based study was conducted at Hawassa University and Ethiopian Health and Research Institute to process and evaluate Proximate, phytate and mineral content of sample. Samples were obtained from local market and bought in bulk. Barley and maize were soaked sundried and roasted. Broad-bean was soaked, germinated sundried and roasted. The three samples were made into fine flour. Samples were stored in airtight plastic bag. Four types of porridge were prepared by mixing broad-bean as treatment and barley-maize as base food. Acceptance testing was conducted using mother child pair.

Results: Laboratory result showed that processing significantly decreases phytate content of ingredients. The highest levels of protein and iron content were in the porridge made with 30% broad bean, wherein protein content increased by 6 grams per 100 g. The lowest level of phytate was observed in the porridge made with 20% bean. Sensory evaluation showed preference for 10% broad-bean added porridge. All broad-bean added porridges had similar overall acceptability to the maize-barley control.

Conclusions: The formulation of a broad bean-containing porridge as complementary food produced a higher protein food with acceptable sensory characteristics compared to the customary
porridge of the region. This study demonstrated successful use of locally-available and affordable foods to enhance nutritional quality of complementary foods.