Improving Nutritional Quality of Sorghum Budena Complementing with OFSP Puree in Hararghe, Eastern Ethiopia
Setegn Gebeyehu1 and Daniel Alemu2

1International Potato Center (CIP), Ethiopia Office, ILRI Campus, Addis Ababa, Ethiopia; 2 Haramaya University, P.O. Box 138, Dire Dawa, Ethiopia

INTRODUCTION
In Hararghe area of eastern Ethiopia, sorghum occupies ca. 60% of land allocated to grain crops with an annual total production of 0.91 M tons. All the sorghum grain produced in the region is used for human consumption. About 80% is used for making leavened bread (budena) on which daily diets of adults and children are heavily dependent. Sorghum budena has its own constraints in terms of nutritional value and shelf life. It contains low level of vitamins and health promoting compounds. Consequently, households relying on this crop as their staple food are suffering from malnutrition and related illnesses. Among those, vitamin A deficiency remains widespread public health problem in the area, and it is severely high in children.

OBJECTIVES
- Develop OFSP blended sorghum budena with acceptable nutritional and sensory qualities
- Promote OFSP blended sorghum injera and infant food among 1000 households with children under the age of two

MATERIALS AND METHOD
- Determination of optimal proportions of OFSP puree and sorghum flour and proximate analysis of products carried out at Food Science and Postharvest Technology laboratory of Haramaya University.
- Proportion of OFSP puree : sorghum flour evaluated (%): 0:100, 10:90, 20:80 and 30:70
- Sorghum varieties used: Melkam and Local; OFSP variety used: Dilla
- Data / parameters collected
  - Physicochemical analysis: Proximate analysis (protein, fat, ash, carbohydrate, and fiber), β-carotene, minerals and tannin content
  - Sensory acceptability: A descriptive sensory analysis was performed using 12 semi trained panelists from the community
  - Train women/mothers from selected households of four districts on preparation and utilization of sorghum products enriched with OFSP puree

RESULTS
- Slight reductions were found for protein, ash, fat and fiber contents with the increase in OFSP puree proportion in the final product.
- Increasing of OFSP puree proportion from 0% to 30%, led to a significant increase in β-carotene content (from 0.3 to 43.14 µg g^-1) of budena.
- Budena prepared from 80% sorghum flour (in both varieties) blended with 20% OFSP puree provided superior sensory acceptability in all sensory attributes such as color, appearance, texture and taste (see Figure on the right).
- Tannin content, which is highly positively correlated with color and negatively with taste, of the sorghum Budena tended to decrease with increase in OFSP puree proportion.
- Women/mothers from selected households trained on preparation and consumption of sorghum products enriched with OFSP puree.

CONCLUSIONS
- Budena made from sorghum flour blended with OFSP puree has more nutritional quality and sensory acceptability than plain sorghum flour.
- Consuming such products could increase access to and intake of vitamin A rich food among the most vulnerable groups, pre-school children, to alleviate malnutrition and related health problems prevalent in the area.