

**DEVELOPMENT OF SUITABLE PROCESSES USING YELLOW QUALITY PROTEIN
MAIZE (YELLOW QPM) IN THE ETHIOPIAN TRADITIONAL FOODS: INCLUDING
COMPLEMENTARY FOOD**

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Summary

Ethiopia with its wide range of Agro-climatic condition grows various types of cereal crops; some of the major cereals are tef (*Eragrostis tef*), maize, sorghum, wheat, barley etc. The present study focused on the application of suitable traditional food preparation methods on quality protein maize (QPM) for the purpose of comparing its nutritional quality, proximate analysis, and sensory evaluation with that of conventional maize and other cereal grains. Various combinations of injera (fermented thin flat bread with evenly distributed pores), dabo (traditional bread), genfo (porridge) and anebabero (double layered injera) were prepared and evaluated for its acceptability by the consumers. In addition to this, recipes of QPM based other foods were also developed. The study revealed that white QPM comprises 10.8% of moisture, 9.9% of protein, 4.9% of fat, 70.7% of carbohydrate, 2.2% of crude fiber, 1.6% of ash, 7.2 mg/100g of calcium, 3.8 mg/100g of iron and 373.81 calories. While the average content of moisture, protein, fat, carbohydrate, calories, crude fiber, ash, calcium and iron for yellow QPM to be 10.85%, 9.67%, 4.2%, 73.03%, 368.60%, 1.02%, 1.23%, 6.87mg. and 5.62mg. respectively. Unlike the conventional maize, QPM based foods were highly preferred by the panel members for its taste and superior baking quality that resulted softer and less fragile injera and bread. When compared with the conventional maize (CM) QPM based injera also keeps longer without having much effect on its softer texture and it was also observed that QPM develops a less sour taste during the fermentation process. This improved functional property of QPM makes it better palatable and increased the utilization of QPM in the preparation of complementary foods. Similarly, it was reported that porridge made from QPM was smoother as compared with the conventional maize. Porridge made from QPM had overall acceptability of 3.44. On the other hand, local maize based porridge had lower overall acceptability (2.56) with significant difference ($p=0.006$). Similarly, the overall acceptability of porridge prepared from local maize was significantly lower when compared with that of QPM with added 20% wheat ($p=0.002$) and 20% cassava ($p=0.000$). Injera and dabo prepared from white QPM have been found to have similar significance pattern.

Various recipes were formulated from QPM as well as combinations of QPM with cereals, legumes, oil seeds, vegetables and animal source were also developed and appropriate processing methods have been indicated.

The utilization of QPM should be popularized through any of the mass media and as well the implementation of improved processing techniques needs more focus by both large scale producers as well as at household levels. Based on its nutritional value and functional properties, QPM is recommended for being adopted as staple diet in Ethiopia and for the formulation of complementary foods for infants and young children. It is also very important to work towards various QPM based processed food products which could easily be marketable and as a means for income generation scheme. Therefore, the utilization of QPM plays very important role to ensure household food security and reduce malnutrition among children.