USDA-FAS’s Micronutrient Fortified Food Aid Products Pilot

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In FY 2010, U.S. Congress allocated approximately $14 million to develop more nutritious and micronutrient-fortified food aid products. The National Institute of Food and Agriculture’s (NIFA) Food Aid Nutritional Education Program (FANEP) received approximately $4 million. The Foreign Agricultural Service’s (FAS) Micronutrient-Fortified Food Aid Products Pilot (MFFAPP) received $10 million.
Under MFFAPP, participants have access to resources to develop and field test new or improved micronutrient-fortified food aid products designed to meet the energy and nutrient needs of McGovern-Dole populations.

Through this pilot program, FAS hopes to identify new products that could be regularly provided in other McGovern-Dole countries around the world.

All $10 million in MFFAPP funding was allocated after two solicitations in FY 11 and FY 12. FAS received 25 proposals and awarded six grants in five countries.
• One year study developing and field testing a dairy based micronutrient fortified ready-to-use supplementary dairy paste on approximately 4,800 school age children 4 – 12 years old.

• Pilot was designed to distribute product over one school year beginning in October 2012 and ending in June 2012.


• Final report with results delivered to USDA in October 2013.
IPHD – MFFAPP Phase One Results

- Significant increases in school attendance and reduced drop-out rates
- Slight improvements in height and weight measurements
- Lack of improvement in iron and Vitamin A levels in the students
- Acceptability of the products by the students
- Local capacity built within the Ministry of Health and IPHD to facilitate future nutrition research
- Baseline data collection was informative and added to the limited evidence base about the extremely high levels of anemia and Vitamin A deficiencies in school children in Guinea-Bissau
- Conducted the first nutritional research study carried out within the McGovern-Dole framework
- Developed a new nutrition education curriculum used in phase two
Hormel Foods Sales, LLC - Guatemala

- One year study developing and field testing a curry-flavored poultry-based supplementary spread called Spammy™

- Ready-to-eat with no cooking required and packaged in 85 gram recyclable aluminum cans, with two servings per can

- Tested on 200 children 3 – 6 years old for 20 weeks beginning in May 2012 and ending in October 2012

- Partnered with Food for the Poor, Caritas Guatemala and the Center for Study of Sensory Impairment, Aging and Metabolism (CeSSIAM)

- Final report with results delivered to FAS in September 2013
Hormel – MFFAPP Results

- All participants showed greater-than-expected improvement in cognitive scores
- There was a 44% reduction in the number of school days missed due to illness
- Children receiving fortified Spammy™ showed statistical improvements in vitamin D and B_{12} levels
- 50% reduction in the number of underweight or severely underweight children
- Slight improvement in hemoglobin for the treatment and control groups
- Ferritin was not changed over the course of the study
- Positive correlations at the end of the study between Vitamin D and cognitive gain score and between ferritin and cognitive gain score within the treatment group; and
- Acceptability of the products by the students
• Two year study developing and field testing a lipid-based ready-to-use supplementary food (RUSF) called Vita Mamba or “vitamin peanut butter” in Creole

• Determining the acceptability and feasibility of adding product to Haitian national school feeding program

• Tested product on 1,167 school age children 4 – 8 years for 100 days beginning in January 2013 and ending in June 2013

• Partnered with Edesia Global Nutrition Solutions, Washington University St. Louis and the Haitian government

• Final report with results delivered to FAS in January 2014
Baseline measures showed high prevalence of under nutrition/thinness in subjects: anemia (73%); stunting (14%); underweight (14%); and wasting/low BMI (9%) 

Study demonstrated that Mamba significantly increased the change in Body Mass Index (BMI) 
Mamba was shown to significantly reduce the odds of wasting by 55% 
Mamba supplementation reduced the odds of ear infections and malaria morbidities 
Acceptability of the products by the students, parents and school staff 

No effect was found for anemia or hemoglobin concentration. MFK said, “which may in part be due to the inconsistent deworming and iron supplementation programs across schools.” 
No significant differences in absentee rates across groups were found
One year study developing and field testing a dairy based micronutrient fortified ready-to-use supplementary dairy paste – delivered with either 15% or 33% protein from dairy sources

Tested product for three months on 533 preschool age children and 1,485 women, infants and children from village health centers

Distribution began in February 2013 and ended in May 2013

Partnered with Global Food & Nutrition, Inc., Challenge Dairy Products and Tufts University

Final report with results delivered to FAS in February 2014
Acceptability of the products by the students

Aside from acceptability, study results differed by age groups. However, each age group experienced positive results

**Preschool children** (24-59 months)
- Both 15% and 33% supplements improved weight gain and MUAC
- 15% increased vitamin A status and cognitive abilities
- Both products were effective in reducing malaria

**Village children** (24-59 months)
- Both 15% and 33% supplements increased Vitamin A status
- 33% supplement improved attendance more than the 15%
- Both products reduced malaria and other illnesses

**Village infants** (6-23 months)
- Both supplements significantly improved hemoglobin levels
- 33% supplement improved attendance more than 15%
- Both products reduced malaria and diarrhea
Non-pregnant (and lactating) Mothers
- Both supplements caused significant weight, height gain and increased MUAC
- Both supplements reduced a decrease in hemoglobin levels that occurred across this age/physiologic group
- 33% supplement improved attendance more than 15%
- Both products reduced malaria and other illnesses

Pregnant Women
- Supplements did not have any significant impact on nutrition and micronutrient strategy – accuracy affected by not knowing participants’ stage of pregnancy
- Both supplements reduced malaria and colds

No consistent differences between the 15% and 33% supplements across age groups

Developed and delivered nutrition education curriculum in 16 villages and 9 preschools reaching 1,484 people

Unexpected benefit – IPHD, CPDI, GF&N and Tufts University raised $5,000 to build school building, kitchen, books and other supplies in Dandu
Three year study developing and field testing an improved rice fortification product, Ultra Rice, containing high levels of iron and Vitamin A

- Enhanced strain of Ultra Rice with:
  - Wider nutritional content
  - Greater physical similarity to traditional rice
  - Superior nutrient retention
  - Lower cost of production

- Tested product on approximately 4,000 school aged children 7 – 14 years old beginning in December 2012 and ending in July 2013

- Partnered with UN World Food Programme, the Institut de Recherche pour le Developpment and Abbott Laboratories

- Final report due to FAS in October 2014
Three year study developing and field testing new formulations of three fortified blended foods (FBFs):

- Sorghum-soybean blend (SSB), sorghum-cowpea blend (SCB) and corn-soy blend (CSB 14)

- FBFs will be made into porridge mixes that can be used for supplemental feeding and nutrition programs for infants and children below the age of five

- 1,890 subjects divided in two age groups: children 6 – 24 months and 25 – 59 months with distribution beginning in July 2015 and ending in October 2015

- Partnering with Project Concern International

- Final report due to FAS in June 2016
Anticipated Next Steps

- As results of pilots continue coming in these new products will be closely examined for cost effectiveness, nutritional value and quality assurance.

- USDA is working with the Farm Service Agency and USAID in adding new options to USG commodity list designed to better meet the nutritional needs of intended food aid recipients.

- In FY15 FAS will conduct a 2-year *Evaluative Assessment for the Evaluation of MFFAPP* - comprehensive research and review assessment of all six pilots.
Thank you...questions?