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12-1-2007

Nebraska Promotes Sorghum and Pearl Millet Food Processing in East Africa

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Nebraska Promotes Sorghum and Pearl Millet Food Processing in East Africa



INTSORMIL



“From our experience in Tanzania we anticipate an ever increasing number of sorghum-based food product businesses in East Africa, many of which are managed by women, who will then be able to increase their family’s standard of living.”



Chapatti cooking on a charcoal grill

Sorghum and millet are ideal crops for many parts of Africa. However, sorghum and millet’s use as food sources for large urban populations in West Africa is hampered by 1) lack of infrastructure for conveying and demonstrating the food value of sorghum and millet to small business investors, 2) limitations on the supply of high quality grains to processors, 3) lack of small processors, 4) lack of educational resources related to small business development, 5) lack of product development expertise, and 6) lack of knowledge of evidence supporting nutritional claims associated with sorghum and millet consumption.

The Department of Food Science & Technology at the University of Nebraska with a grant from INTSORMIL is promoting the use of sorghum and millet as a food in Tanzania. The Nebraska model is designed to solve the limitations mentioned above and is based on the realization that for food businesses to be successful there must be a strong linkage between services provided in business, marketing, supply chain management, and the technological/scientific aspects of foods.

Model Applicable in Africa

The Tanzania project promotes the increased use of sorghum and millet by establishing an entrepreneurship education/training program coupled with follow up technical and business support services. The training is being coordinated by Sokoine University of Agriculture’s Department of Food Science and Technology in Morogoro. The project provides integrated marketing and product/process development services to clients with the aim of:

1. Establishing a product development/market development assistance infrastructure at Sokoine University
2. Developing entrepreneurial food business and micro-enterprises that increase food and economic security
3. “Pulling” sorghum and millet through the marketing channel, thus



Dar es Salaam training participants tasting sorghum-based buns

INTSORMIL Report No. 16, December 1, 2007



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INTSORMIL is funded by the United States Agency for International Development under Leader with Associates Cooperative Agreement EPP-A-00-00016-00
INTSORMIL Management Entity: University of Nebraska, 113 Biochemistry Hall,
P.O. Box 830748, Lincoln, NE, 68583-0748, USA

Phone: (402) 472-6032 Fax: (402) 472-7978 E-mail: SRMLCRSP@UNL.EDU

Web site: <http://intsormil.org>



providing consumers with improved food choices and providing farmers/producers with increased market stability and incomes.

What we have done

An active educational and small-business assistance infrastructure designed to support entrepreneurial businesses developing sorghum and millet food products has been established. The assistance program involves: 1) training current or potential food processors in starting and running a sorghum and pearl millet-based business, 2) practical hands-on training on how to process/prepare different sorghum-based food products and 3) a one-on-one follow up of every processor at their place of work. During the project period our clients have developed a wide range of sorghum and millet-based food products including weaning foods, sorghum flours, popped sorghum, porridges, composite flours, sorghum breads, rolls, cakes, chapatti, pilau, and hospital-grade nutrient flour mixes. In addition, several businesses and women's groups now offer dehulling and sorghum/millet grinding services available to entire towns. Farmer training has focused on grain quality, cleaning, and storage techniques to achieve high-quality marketable grain for food and industrial uses.

Success Stories

There are many success stories emanating from this project. This is just one example from an entrepreneur in Tanzania.

Before Training

- Processed 200 kg of Lishe (instant breakfast cereal flour) using non-sorghum grains and 30 kg of sorghum grain per month

After Training

- Processes 350 kg of sorghum grain per month for Lishe
- Trained 8 processor groups in Dar es Salaam and Mtwara region
- Trained 150 sorghum farmers in Mtwara region
- Produced 6 sorghum products (sorghum flour, sorghum-based composite flour, buns, bread, cakes and chapatti)
- Developed a bankable business plan for sorghum-based products
- Attended trade fairs in Tanzania, Uganda and Kenya
- Dehulled sorghum from more than 1,000 households
- Supplies dehulled sorghum to other processors located in Dar es Salaam



Training participants making chapatti dough in Dar es Salaam



Sorghum and pearl millet-based food products on display at a food fair in Tanzania

What is next?

The focus has been to increase the number of small and mid-size businesses that use sorghum and millet in food products. As such, demand for sorghum increases, and "pulls" sorghum from the farmer to the consumer through the marketing channel. The project's success in Tanzania was dependent on having a sound initial idea and educational concept, coupled with an extremely strong and competent local partner in the scientists at Sokoine University. Through the receipt of renewed funding (Years 2007-2011) from INTSORMIL this project will be expanded to cover all of Tanzania and to Mozambique and Zambia and hopefully all of East Africa thereafter. Together the University of Nebraska, Mozambiquan, Tanzanian and Zambian scientists will: 1) Expand the existing Sorghum/Millet Entrepreneurship Program; 2) Train farmers in grain quality; 3) Provide educational materials to NGOs, university faculty and governments throughout Africa and; 4) Provide Ph.D. education to East African university faculty members.

Anticipated Impacts

We anticipate an ever increasing number of successful sorghum-based food product businesses run by women, who will then be in a better position to increase their family's standard of living.

U.S. Benefits

The research portion of this project is targeted toward grain quality/product development issues that can be directly applied to improving U.S. sorghum quality as well as developing new prototype sorghum products applicable for U.S. consumption and export markets. This will include improvement in the quality of sorghum used in food products made for individuals with wheat intolerance and for sorghum-based snack foods that are shipped to Asian countries and will improve the quality of sorghum and pearl millet starch used for ethanol production.



Members of three Tanzanian women's groups admiring sorghum buns baked during a training session in Dar es Salaam

For further information regarding this article contact:

David Jackson, Food Science and Technology, University of Nebraska, 265 Food Industry Building, Lincoln, NE 68583-0915, Phone: 402-472-2814, E-mail: <djackson1@unl.edu>