HYGIENIC PRACTICES FOR FOOD SAFETY

In Small and Medium-Size Businesses
SIL Soy Dairy Entrepreneur Network

- Over 25 soy food entrepreneurs around the world working to overcome barriers to sustainable production and business
- Entrepreneurs produce soymilk, soy yogurt, tofu, soy flour, soybean oil, okara, baked foods, soy coffee, soy weaning foods
  - Sell products to schools, health clinics, groceries, and on-site
- Using a variety of processing and packaging methods
- SIL provides technological support to the Network
  - Resources and research for improving operation, increasing production, and developing business plans
- The Entrepreneurs collect data on their operation costs and production rates.
  - SIL analyzes this data and will release findings in 2017
Soy Dairy Entrepreneur Network Services

- Webinars and Networking
- On-site technical training
- New Product Development
- Packaging Designs
- Branding and Marketing Plans
- Food Labeling and Certification
- Food Safety and Sanitation Training
- Business Development
- Capacity Building

- Soy Cooking and Utilization Training
- Access to Credit
- Storage Designs
- Integration into School Feeding Programs
- Other Institution Feed Programs
Webinar Agenda

9am: Introductory Remarks (Maggie Cornelius, SIL Human Nutrition Program Manager)

9:10: Food Safety Challenges for Rural Women Soy Entrepreneurs in Benin (Patrice Sewade, Managing Director of SOJAGNON, Godomey-Togoudo, Benin)

9:15: Food Safety Challenges for a Small Soymilk Business in Ghana (Prof. Joseph Osei, Managing Director of AA Pure Soya Milk, Agona, Ghana)

9:20: Food Safety and Quality Control Methods in a Medium-Size Soy Food Company in Uganda (Presenter, Charles Nsubuga, Sesaco Foods, Ltd., Kampala, Uganda)

9:25: Basic Food Safety Practices for Businesses (Faustina Vimariba, Ghana Health Service Regional Nutrition Officer, Accra, Ghana)

9:30: Getting Your Soy Foods Business FDA-Certified (Maggie Cornelius, SIL)

9:35: Closing Remarks (Prof. Matt Stasiewicz, University of Illinois)

9:40: Q&A
Food Safety for Soy Food Businesses

Benefits:

• Preserves food nutrition
• Protects consumers from food-borne illness
  • Especially children, young mothers, the elderly and infirm
• Reduces food waste
• Helps obtain FDA certification and business expansion
• Garners trust in your brand

Current Challenges:

• Understanding what it is and its importance to business success
• Knowing and achieving the Critical Control Points for soymilk production
• Developing and adhering to a strict food safety system in businesses
• Working with limited materials and resources

Source: Lucas Mujju
FOOD SAFETY CHALLENGES

For rural women soy entrepreneurs in Benin
Speaking: Patrice Sewade
Managing Director of SOJAGNON
Godomey-Togoudo, Benin

- a soybean producers’ organization gathered in cooperative to defend and support public-private partnership initiatives in the agricultural sector and especially in the soybean industry in Benin
- set up in 2009, result of the slump in sales of cotton and the necessity to create a public-private partnership in order to find market opportunities to soy farmers
- working with women soy processors in 8 municipalities of Benin
Quality Control Practices

- No official quality control system among their producers
  - Women just process soybean and sell end-products in restaurants, schools, local markets and supermarkets.

- In some plants quality control systems (HACCP) are in place for soy oil, cake, cheese production
  - The raw material is controlled to make sure it does not contain foreign matter.
  - The control in the processing chain is carried out by quality control officers from the Ministry of Agriculture of Benin as well as research institutions (Inrab and Universities) for Physicochemical and microbiological analysis at different stages in the process.
Food Safety Challenges

- Outdated facilities: The existing stove for cooking the milk is traditional and is obtained by joining large pieces of stones and making use of firewood
  - Often the pot of milk on the fire is not well protected by its lid, so the smoke mixes with the milk
- Women don’t have an appropriate shelter for the work
- The mill for grinding soybean grain is rusty
Food Safety Challenges

- Processors are facing challenges to have access to appropriate packaging
  - Re-use bottle plastics to package milk, often obtained from bars or restaurants
    - Benin does not yet have glass bottle factories, so glass bottles comes from Nigeria at $0.08 USD/bottle
  - The hygienic state of this packaging is doubtful and leads to the reluctance of consumers to buy the products
  - This reduces the competitiveness of local soy milk processors.
- The milk shelf life does not go beyond one day
Potential Solutions

- Sojagnon in collaboration with research organizations (FSA/LSA, INRAB, WU and Isa-Lisoba) and FUPRO, through the ProSAM project funded with the support of the EC’s DG-Dev-Co, helped processors prolong the shelf life of the milk up to 6 months.

- Best hygienic practices are also taught during soymilk processing demonstration stages.

- Bottles in glass have been proposed by research, but the challenge as to how and where to find these bottles at the right time and at affordable price to be profitable still exists.
FOOD SAFETY CHALLENGES AND METHODS

For a small soy milk business in Ghana
Speaking: Professor Joseph Kwame Osei
Managing Director of AA Pure Soyamilk
Agona Ashanti, Ghana

**AA Pure Soyamilk** – a small, FDA-certified business in Northern Ghana
- 3 staff members
- 225 L milk produced/week
- Milk sold to local schools and markets
- Pioneer in using glass bottles to package soymilk, achieving a shelf life of 1-3 months
Food Safety and Quality Control at AA

1. Bad bean and foreign matter (stones and debris) are removed from the seed lot before soaking beans for processing.

2. Very clean water from 80 ft borehole is used for processing. The water is pumped into a reservoir and chlorinated.

Photo Credits: Dr. Joseph Osei
Food Safety and Quality Control at AA

3. Bottles are acid washed and heated to 100 degrees Celsius before filling with hot milk.

4. Workers wear standard clean white clothing in the processing room.

5. Processing room has tiled floors to permit thorough cleaning after work.
Food Safety Challenges at AA

• Challenge: coagulation of the milk due to insufficient cold storage arising from irregular power supply.

• Sterilization of the milk at 120 degrees Celsius and hot filling into sterilized glass bottles have been attempted to overcome insufficient cold storage.
FOOD SAFETY AND QUALITY CONTROL METHODS

At a medium-size soymilk company in Uganda
Speaking: Charles Nsubuga
Managing Director of Sesaco Foods, Ltd.
Kampala, Uganda

Sesaco Foods, Ltd. -- a growing medium scale food processing industry employing over 80 workers. Produces 300-400 L soymilk/day, 6 days/week using 1 Soycow and some extra milling machines

“Good Feeding, Good Living”

- **Company Goal**: to excel in the production and distribution of high-quality processed cereals and pulse foods
- **Company Vision**: build SESACO Ltd. into a multinational food processing enterprise
- **Company Goal**: to improve the living conditions of the shareholders, workers, and the community in which all the stakeholders work and live
Food Safety and Sourcing Soy

- Sesaco sources its raw materials from small-holder farmers
- Post-harvest handling is a big concern to soy milk and yogurt production → low quality beans
  - The good varieties of dry soybeans are specified to farmers and traders

Photo Credits: Charles Nsubuga
Food Safety System at Sesaco Foods

1. Sample a new supply of beans against the specification
2. A truck delivers the supply to the Sesaco warehouse
3. Cross-check beans against sample
4. Beans put on-hold for a lab test for aflatoxins
5. Release or Reject the beans
6. Sorting and dry cleaning
7. Wet Cleaning 3-4 times
8. Soaking for 8 hours
9. Draining and washing
10. Wet milling
11. Cooking, filtering, and bean flavor management
12. Yogurt processing
Food Safety Precautions at Sesaco Foods

**Production Room**
- Tiled floors and walls in production room
- Stainless, plastic utensils
- Unperfumed liquid soap is used

**Staff**
- Wear protective gear covering hands, head, mouth, nose, body, feet
- No rings, watches, necklaces, or earrings
- Medical check-ups and fitness test certificates obtained every 6 months
Quality Control at Sesaco Foods, Ltd.

- For traceability batch numbers are placed on the product.
- Expiry is digitally placed on the product: soymilk lasts 6-14 days in fridge, 1 month in freezer; soy yogurt lasts 1 month in fridge, 3 days on shelf.
- Production records are kept: bean variety, aflatoxin check results, moisture content, ingredients, day’s output.
Proposed Sesaco Factory Structure
FOOD SAFETY BASICS FOR ALL BUSINESSES
Speaking: Faustina Vimariba
Ghana Health Service Regional Nutrition Officer
Greater Accra Area

Food Safety Basics for Everyone

- Preparing production room for food preparation
- Supplies needed for safe food production
- Methods for minimizing risk of contamination
- Post-production cleaning
Registration Requirements

1. Purchase and complete registration form (GH₵ 5.00)
2. Send application letter to: The Chief Executive, Food and Drugs Authority, Accra
3. Copy of Business Registration Certificate. This certificate can be obtained from the Registrar General Department after completing the business registration process.
4. Copies of Food Handler’s Certificates. This certificate can be obtained from the Accra Metropolitan Assembly (AMA) after going through a health check prescribed by the AMA.
5. Site Master Plan
6. Certificate of Analysis for each variant where applicable.
   - For soymilk the parameters for the certificate of analysis includes Phyicochemical (Heavy metals (Lead (Pb), Arsenic (As) and Cadmium (Cd) and Aflatoxin) and Microbiological (Aerobic plate count, Yeast and Moulds, and Staphylococcus aureus).
7. Make model labels of the product
8. Six samples of each variant of where applicable
9. Licensing of local food production premises (Renewable after every year)
   - Small scale industry - GH₵ 200.00
10. Registration fee (Renewable after every 3 years)
    - Small scale food plant - GH₵ 450.00 per product

CLOSING REMARKS
Speaking: Professor Matthew Stasiewicz
Assistant Professor of Food Microbiology
University of Illinois

Soymilk Food Safety Basics

- Soymilk’s potential to be a very safe product and sold commercially
- Critical Control Points (CCPs) in soymilk production
- Risks of post-process contamination and improper storage
Q&A

Send in your questions using the chat box!

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FROM THE AMERICAN PEOPLE
THANK YOU TO OUR CONTRIBUTORS!

Patrice Sewade, Martin Agboton, and Mathieu Ayenan @ SOJAGNON
Professor Joseph Kwame Osei @ AA Pure Soyamilk
Charles Nsubuga @ Sesaco Foods, Ltd.
Faustina Vimariba @ Ghana Health Service
Professor Matthew Stasiewicz @ University of Illinois
Mary Glover and Frank Peget @ EnSoy Milk
Flora Amagloh @ Savanna Agricultural Research Institute
Usman Labaran @ Maijimina Agroland Nigeria Ltd.