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Managing Food Safety and Quality in Small-Scale Food Processing Plants

Dr Richard Fuchs 15th March 2016

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Natural Resources Institute

- NRI is an internationally recognised multi-disciplinary centre for research, consultancy and education for the management of natural and human resources.
- Mission Statement – To provide distinctive, high quality and relevant research, consultancy, learning and advice in support of sustainable development, economic growth and poverty reduction.

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Overview

- What is quality management
- Benefits
- Components of safety and quality management systems
  - Prerequisite Programmes (PRPs)
  - Hazard Analysis and Critical Control Point (HACCP)
- Standards
- Safer Food Better Business

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Total Quality Management

- A pro-active system that controls all aspects of a product: quality and safety
- The system is company wide, everyone is involved and has received the appropriate training
- The system is documented so that it can be audited, internally, to verify that the system is in place and externally by third party auditors, by customers or for certification purposes

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Quality

Traditional View

- Improvement of quality is expensive
- It is a reactive culture
- There are acceptable quality levels
- It is the workers' fault
- There should be detection and checking for errors and faults

Total Quality Approach View

- Quality pays for itself
- It is preventative
- It aims at a defect free product/service through continuous improvement
- It is everyone's responsibility
- The process ensures that it is right first time and every time

Causes of Failure in Quality

Cause	% of Total
Human Error	12
Bad inspection	10
Bad specifications	16
Design faults	36
Poor planning	14
Other	12

"The Limitations of Inspection and Testing"

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Definition of Quality

- Giving the customer
  - What they want
  - On time
  - Everytime
  - At the right cost

Complete Customer Satisfaction

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Quality – How to do it

- Satisfy customer needs
- Get close to customers
- Plan to do all jobs right first time
- Agree expected performance standards
- Measure performance
- Demand continuous improvement
- Recognise achievements

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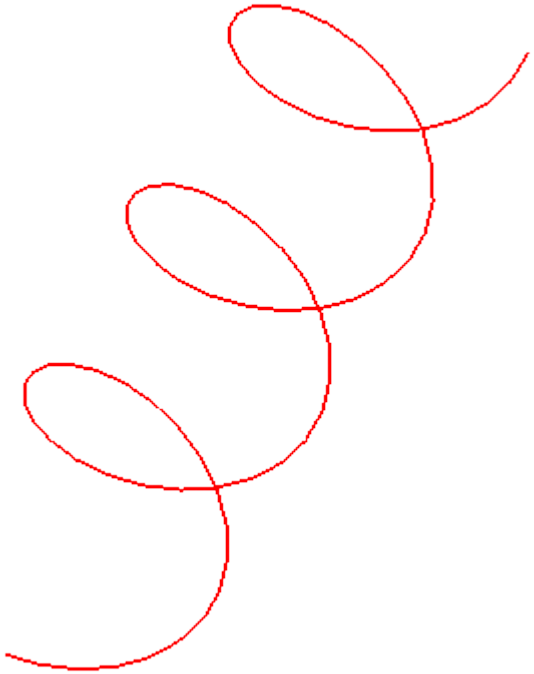
Weaknesses to be Eliminated

- Doing what they have always done
- Not understanding or ignoring competitive positioning
- Confusing quality with grade
- The “not my problem” syndrome
- “Fire fighting is macho”

Helix of never ending improvement

Staff must be trained to

- EVALUATE - the situation
- PLAN - to fully achieve these objectives
- DO - implement the plans
- CHECK - that objectives are being achieved
- AMMEND - take corrective action if objectives are not being met



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Quality Management Systems

- EN ISO 9001-2015
  An internationally recognised standard that can be used as a guide to implementing a QMS. This system can be certified against the standard by an certification body.

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Safety and Quality Management

What are Prerequisites?

- Systems that are normally in place before the HACCP plan is developed to ensure the business is operating according to:-

- Codex General Principles of Food Hygiene
- Relevant Codes of Practice
- Relevant Food Safety Legislation

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Prerequisite Programmes

- Also called ‘Good (Manufacturing) Practices’
- Provide a sound foundation for HACCP
- Cover ‘low risk’ hazards
- Allow the HACCP plan to be process specific and focused
- Formalised support network for HACCP
- Stream-lined HACCP plans

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Codex Prerequisites

Codex General Principles of Food Hygiene

- Establishment: Design and facilities
- Control of Operations
- Establishment: Maintenance and Sanitation
- Personal Hygiene
- Transportation
- Product Information and Consumer awareness
- Training

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Areas Covered by PRPs

- Cleaning and Disinfection
- Maintenance
- Personnel Hygiene and Training
- Pest Control
- Plant and Equipment
- Premises and Structure
- Services (compressed air, ice, steam, ventilation, water etc.)
- Storage, Distribution and Transport
- Waste Management
- Zoning (physical separation of activities to prevent potential food contamination)

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Management of Safety

- Hazard Analysis and Critical Control Point (HACCP) - a system to ensure the safety of food.
- It identifies, evaluates, and controls hazards which are significant for food safety.
- HACCP is a legislative requirement for food produced in or exported into the USA and the EU, as well as many countries around the globe.
- The concept is also recommended by the Codex Alimentarius Commission.

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Structure of a System

- The system must be user friendly
- A documented Quality Management System (QMS) confirms that the company is doing what it says it is doing. This is also confirmed by a third party, the registration body, or a national registration body.

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Seven Principles of HACCP

1. Identify potential hazards, assess the risk and identify control measures
2. Determine the Critical Control Points (CCP) that will eliminate or minimise the risk
3. Establish target levels or tolerances which must be met to ensure control of the CCP
4. Establish a monitoring system
5. Establish corrective action for when a CCP is moving out of control
6. Establish verification procedures to confirm HACCP effectiveness
7. Establish documentation and records for the system

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Why use HACCP?

- Management of product safety
- Reduces the increasing incidence of food safety issues
- Eliminates the demonstrated limitation of traditional Quality Control methods
- Customer pressure - demanding safe food
- Legislative requirements - national and international levels
- Foundation for the development of effective product management system

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Benefits of HACCP (1)

- Systematic approach
- Preventative system
- Increases confidence

  - in product, customers, producers
- Resources are used effectively
- Cost effective control system

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Benefits of HACCP (2)

- Demonstrates "Due Diligence"
- Internationally accepted
- Strengthens quality management systems
- Facilitates regulatory inspections
- Demonstrates management commitment

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Barriers to HACCP Implementation Amongst SMEs

- Time
- Money
- Personnel
- Knowledge and understanding
- Motivation
- Trust in legislation
- Trust in enforcement

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Private Standards

- GlobalGAP
- ISO 22000
- British Retail Consortium (BRC) Food (7th Edition)
- SALSA

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Safe and Local Supplier Approval (SALSA)

1. Pre-requisite Controls

- Training and supervision
- Personal hygiene
- Cleaning
- Contamination/Cross-contamination prevention
- Environment and process control
- Control of raw materials
- Stock control
- Waste control
- Pest control
- Equipment
- Maintenance
- Labelling control
- Third party distribution and storage control
- Product shelf-life

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SALSA (contd)

2. HACCP and management systems
3. Documentation
4. Premises

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Safer Food Better Business

- Divided into 4 sections (the 4Cs)
  - Cross contamination
  - Cleaning
  - Chilling
  - Cooking
- Management section
- Diary

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Example of Safe Method

- Handwashing

SAFE METHOD:

HANDWASHING

Effective handwashing is essential to help prevent bacteria spreading to food.

Make sure that all staff who work with food wash their hands properly before handling or preparing food. Harmful bacteria can spread very easily from people's hands to food, work surfaces, equipment etc. Effective handwashing helps to prevent this. Following the steps below will make sure hands are washed properly.

WASHING HANDS EFFECTIVELY

Step 1:
Wet your hands thoroughly under warm running water and squirt liquid soap onto your palm.

Step 2:
Rub your hands together palm to palm to make a lather.

Step 3:
Rub the palm of one hand along the back of the other and along the fingers. Repeat with the other hand.

Step 4:
Put your palms together with fingers interlocked and rub in between each of the fingers thoroughly.

Step 5:
Rub around your thumbs on each hand and then rub the fingertips of each hand against your palms.

Step 6:
Rinse off the soap with clean water and dry your hands thoroughly on a disposable towel. Turn off the tap with the towel and then throw the towel away.

CHECK IT

For hands to be washed properly, you need warm running water, liquid soap and preferably disposable towels.

Do you use liquid soap?
Yes ☐ No ☐ If no, what do you use?

Do you use disposable towels?
Yes ☐ No ☐ If no, what do you use?

WHEN TO WASH YOUR HANDS

Before touching or handling any food, especially ready-to-eat food and after touching raw meat, poultry, fish, eggs or unwashed vegetables

When entering the kitchen e.g. after a break or going to the toilet.

After touching or emptying bins.

After any cleaning.

After touching a cut or changing a dressing.

After touching items such as phones, light switches, door handles, cash registers and money.

THINK TWICE!

If you use disposable gloves in your business, they should never be used as an alternative to effective handwashing.

When using disposable gloves make sure you:

- Wash your hands thoroughly before putting them on and after taking them off.
- Always change them regularly, especially between handling raw food and ready-to-eat food.
- Throw them away after use or if damaged.

Hygienic hand rubs and gels can be useful when used as an additional precaution, but should **never** be used as a replacement for effective handwashing.

WHAT TO DO IF THINGS GO WRONG	HOW TO STOP THIS HAPPENING AGAIN
• If you think a member of staff has not washed their hands, make sure they wash them straight away and emphasise how important it is to wash their hands when working with food.	• Make sure that hand basins are convenient with plenty of soap and disposable towels. • Train staff again on this safe method. • Improve staff supervision.

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Management

CLEANING SCHEDULE

FILL IN DETAILS OF ALL THE ITEMS YOU CLEAN							
Item	Frequency of cleaning					Precautions e.g. wear gloves or goggles	Method of cleaning
	After use	Every shift	Daily	Weekly	Other		
Work surface	X					Wear gloves	1. Remove any obvious food and dirt. 2. Wash the surface with hot soapy water (detergent diluted according to manufacturer's instructions) to remove grease and any other food and dirt. 3. Rinse with clean water to remove the detergent and loosened food and dirt. 4. Apply a disinfectant. Make sure you leave it on for the contact time recommended by the manufacturer. 5. Rinse with clean water to remove the disinfectant. 6. Leave to dry naturally or use a clean disposable cloth.

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SFBB Diary

Week commencing: _____

Monday
Any problems or changes – what did you do?

Opening checks ☐ Closing checks ☐

Name _____ Signed _____

Our safe methods were followed and effectively supervised today.

Tuesday
Any problems or changes – what did you do?

Opening checks ☐ Closing checks ☐

Name _____ Signed _____

Our safe methods were followed and effectively supervised today.

Wednesday
Any problems or changes – what did you do?

Opening checks ☐ Closing checks ☐

Name _____ Signed _____

Our safe methods were followed and effectively supervised today.

Thursday
Any problems or changes – what did you do?

Opening checks ☐ Closing checks ☐

Name _____ Signed _____

Our safe methods were followed and effectively supervised today.

Friday
Any problems or changes – what did you do?

Opening checks ☐ Closing checks ☐

Name _____ Signed _____

Our safe methods were followed and effectively supervised today.

Saturday
Any problems or changes – what did you do?

Opening checks ☐ Closing checks ☐

Name _____ Signed _____

Our safe methods were followed and effectively supervised today.

Sunday
Any problems or changes – what did you do?

Opening checks ☐ Closing checks ☐

Name _____ Signed _____

Our safe methods were followed and effectively supervised today.

Extra checks
We have performed the following extra checks this week

Name _____ Signed _____

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Questions to be Addressed

- Are there currently issues with the quality and safety of processed products?
- Could these be addressed by implementing effective quality and safety management systems?
- Will demonstrating that quality and safety are being appropriately managed help increase the market?
- Is accreditation to a recognised standard the way forward?
- Alternatively could an appropriate management system be developed that meets the needs of the sector?

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- Thank you for your attention
- Any questions?

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