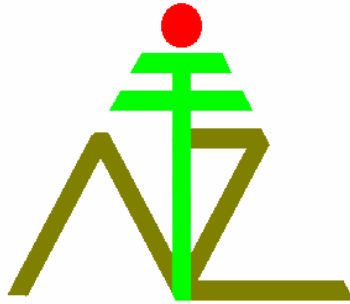


**NRDC / ZEGA
TRAINING TRUST**



Basic Food Safety

A Guide for

**Farm and Pack House
Employees**

Issued to:.....

SALES MEAN JOBS

You need to understand your customers

Supermarkets and their Buyers

**SAINSBURYS
SHOPRITE
TKS**

&

Customers in Europe

Key points to remember:

- 1. The Law in Europe says that food that is offered for sale
'Must be Safe to Eat'**
- 2. Customers who are not satisfied will complain.**

Complaints result in:

Fines

Loss of sales

Loss of jobs

Bad publicity

Reduction in orders

You have a responsibility to help to ensure that your farm produces Vegetables that are 'Safe to Eat'

**Read this book carefully and
put the instructions into practice**

DUE DILIGENCE

Buyers and Customers expect Producers to put 'Due Diligence' into practice.

What's 'Due Diligence'?



'Due Diligence' means that, Farm Managers and Staff, take **all** the necessary precautions to see that their vegetables are of Good Quality and 'Safe' to eat.

Buyers will want to see proof that 'Due Diligence is put into practice.



They will:

- Visit your farm to see your facilities and watch you work
- Check your policies, procedures and records
- Test your products for chemical residues and Food poisoning bacteria

WHAT THE FARM MUST DO

<p>Documentation</p> <p>Policies: <i>The company is committed to</i></p> <p>Procedures: <i>How the job is to be done</i> <i>Who is responsible</i> <i>What must be recorded</i></p> <p>Work instructions: <i>Instructions to staff</i></p>		<p>Training</p> <p><i>Staff must know the rules and how to carry out the correct procedures</i></p>	
<p>Implementation</p> <p>Personal Hygiene</p> <p>Clean Equipment</p> <p>Careful Handling</p> <p>Quality Control</p>		<p>Records & Traceability</p> <p>Vertical Field Labels Produce Labels Pack House GRN Batch Pack Record Box and pallet Labels Airway Bill No.</p> <p>Horizontal Records of Activities <i>Planting</i> <i>Fertiliser</i> <i>Spraying</i> <i>Harvesting</i></p>	

EVIDENCE OF YOUR DILIGENCE

Buyers like to place contracts with people that they can rely on to do a good job.

You should ask yourself some questions.

- ⇒ Have you produced good products reliably for some time?
- ⇒ Do you have procedures that will lead to the production of a high quality product?
- ⇒ Does everybody understand the procedures and put them into practice all the time?
- ⇒ Have you got accurate records to show what you have done?
 - Stock records
 - Cleaning schedules
 - Spray records
 - Harvesting records, etc,
- ⇒ Can you trace where products came from and what has been done to them if you need to solve a problem?

If you can answer yes to all these questions your farm will not have a problem convincing customers that you are a good reliable supplier.

Everybody on the project must pay attention to detail and see that the job is done correctly all the time.

PRODUCTION OF SAFE VEGETABLES

Food is at risk from: -

Food Poisoning Bacteria

Foreign Bodies

Chemicals

Minimising and controlling these risks can help to protect food.

Everybody on the farm is responsible: -

Farm Owner or Manager

The farmer or the manager must provide adequate facilities, equipment and materials. He will also develop procedures to prevent contamination by bacteria, chemicals and foreign bodies and to stop bacteria multiplying.

Supervisor

The supervisor is responsible for explaining rules and procedures to workers and for seeing that these rules and procedures are followed correctly all the time. If you are not sure what to do you should ask your manager to explain.

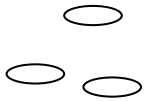
You

You must take responsibility for the quality of the work that you do. This booklet will help to explain what is important and why procedures must be followed.

FOOD POISONING BACTERIA

Understanding bacteria will help us to understand how they can be controlled.

What Are Bacteria?



Bacteria are very small living things. They are too small to see so we recognise them by their effects. Some types of bacteria are dangerous and cause diseases. These are called Food Poisoning Bacteria or 'Germs'.

What Do Food Poisoning Bacteria Do?

Eating vegetables that are contaminated with these bacteria will make you ill: -
Stomach ache
Vomiting
Diarrhea
Young children, the sick and old people may die.

Where Do we Find Bacteria?

“Bacteria are everywhere but the dangerous ones live in particular places:”

Soil
Guts and Faeces
Noses and Throats
On Skin
Wounds and Sores
On Rubbish
Dirty cloths and boxes
Rats, Mice, Birds and Flies

How do Bacteria Move Around?

***Bacteria rely on getting a ride!!!
The most common ways of getting bacteria on vegetables are: -***

- ⊗ Touching them with dirty hands particularly after using the toilet, picking your nose, scratching your head, coughing etc.
- ⊗ Putting the vegetables in dirty crates or on to dirty tables
- ⊗ Allowing contact with manure, rats, rat droppings, cockroaches, flies etc.

How do Bacteria Breed?

Bacteria breed by division.



This process needs:

Water, Food, Warmth and Time

When conditions are good, division takes 10 – 20 minutes

CONTROL OF FOOD POISONING BACTERIA

People become ill when they eat large numbers of Food Poisoning Bacteria or germs.

To protect everybody who eats farm produce it is essential to:

- **Prevent Contamination of produce with 'Germs'**

Consider:

- Personal behavior and hygiene of staff
- Provision of toilets and hand washing facilities
- Incorporating animal manure only before planting
- Use of clean equipment
- Preventing contamination with dust and soil
- Using only potable water for washing
- Control of pests, (flies, rodents, etc)
- Keep inputs, rejects and export produce separate
- Do not use crates for storing rubbish or other food
- Removing rubbish and rejects promptly and keeping the farm clean and tidy

- **Prevent Multiplication of any bacteria that may have got on to the produce**

Consider:

- Using clean equipment
- Rapid removal of field heat and maintaining the cold chain

- **Remove Bacteria by washing produce with potable water and disinfecting equipment**

Consider:

- Dipping produce on clean, cold water
- Washing hands before handling the produce
- Washing equipment and work surfaces with clean water and disinfectant

PREVENT CONTAMINATION

Bacteria are difficult to remove or kill completely. Therefore it is important to prevent contamination.

There are lots of precautions that we can take.

Keep Pests Out

Birds, rats, mice, cockroaches and flies all carry bacteria from place to place

- ⇒ Keep doors and windows closed to exclude birds and flies.
- ⇒ Tell your supervisor if you see signs of rats, mice, birds, cockroaches, or flies in the packing area or packaging store. These all have bacteria on their feet and in their droppings.

Keep the Place Clean And Tidy

- ⇒ Wipe the table frequently with a clean cloth dipped in chlorinated water.
- ⇒ Remove rubbish promptly from the table and around the pack house and field shelter.
- ⇒ Keep the ceiling, walls and floor clean

Is your Water Potable?

Only potable water can be used for washing produce

Farmers must:

- ⇒ Protect water supply from faecal contamination
- ⇒ Test water for dangerous minerals and *E. coli*

Protect Produce From Soil

Soil can be a problem, particularly in the rainy season.

- ⇒ Prevent soiling by:
- ⇒ Careful weeding
- ⇒ Careful irrigation
- ⇒ Using organic mulch
- ⇒ Using separate field crates
- ⇒ Do not stack muddy crates
- ⇒ Putting crates on clean pallets

Use Manure Carefully

Manure contains some Food Poisoning Bacteria

- ⇒ Keep animals out of the fields
- ⇒ Incorporate manure into the soil
- ⇒ Apply manure soup to the soil not to the leaves

Please: Wash your hands after handling manure

PERSONAL HYGIENE

Observe High Standards Of Personal Hygiene

Do Not be a source of contamination.

- ⇒ Do not come to work if you have a stomach upset or a cold. If you do, your supervisor will send you to the clinic or to other work.
- ⇒ Wear clean clothes or overalls and cover your head/hair in the pack house.
- ⇒ Wash your hands in chlorinated water before starting to harvest, grade or pack.
- ⇒ Cover open wounds with a clean plaster or wear gloves
- ⇒ Wash your hands when you have been to the toilet.
- ⇒ Do not scratch your head, pick your nose, cough or sneeze on the produce.
- ⇒ Do not smoke, eat or drink whilst you are working.

CHECK YOUR HANDS

WEAR THE CORRECT CLOTHING

STOP BACTERIA MULTIPLYING

Bacteria will multiply if they are given: -

**Warmth
Food**

**Water
Time**

When these four conditions come together and are favourable one bacteria becomes two in 10-20 minutes.

This means that a few in Zambia is a lot when the vegetables get to England.

We can stop bacteria multiplying by controlling:

- the temperature
- the length of time the vegetables are at risk
- the water and food supply

**Keep
Produce
Cold**

Putting the vegetables in the Cold Store (below 5⁰C) will stop the bacteria multiplying

**Keep
Warm
Periods
Short**

- Remove 'Field Heat' quickly.
- Grade and pack the produce as quickly as possible.

Bacteria multiply quickly if:

- Vegetables are held in your hand or left in the sun
- Vegetables stay in the grading hall for a long time.

**Remove
Food and
Water**

Bacteria like to feed on dirt and rubbish. Keeping boxes, tables, cloths etc. clean and dry. This will remove their food and water supply.

MAINTAINING THE COLD CHAIN

Keeping produce cool will help to reduce the multiplication rate of bacteria and prevent dehydration.

The Cold chain is maintained when a series of things happen to the produce but the temperature is kept cool all the time.

The cold chain for vegetables of maintained when:

**Do not hold Produce
for a long time**

**Exposure to the
sun is minimized**

**Field shelters
are used**

**Produce is taken to
the cold store
(within 2 hours)**

**Cool produce
Quickly**

**Keep cold
Stores Cold**

**Do not leave
produce on the
grading table**

**Transport in
Shaded/Cooled
Trucks**

REMOVING AND KILLING BACTERIA

Washing *Washing will remove some Bacteria*

You can maximise the effectiveness of washing hands, tables and containers by:

- Using non-perfumed germicidal liquid soap
- Scrubbing under your nails
- Drying your hands in the air not on your clothes
- Using a new or clean cloth for cleaning
- Rinsing your cloths frequently in disinfectant
- Changing the water regularly
- Stacking washed crates and buckets so that they will drain dry

Disinfecting *Disinfecting, e.g. by adding chlorine to the water, will kill some bacteria.*

You can maximise the effectiveness of disinfecting by: -

- Using the right amount of Disinfectant
- Changing the water regularly
- Making sure that hands, boxes and produce are fully immersed in the solution and exposed to the disinfectant for long enough.

REMEMBER

Washing and disinfecting are aids to the control of bacteria but they are not 100% effective so we still need to prevent contamination and growth.

CHEMICAL CONTAMINATION

Chemical contamination may be:

Dangerous
Unpleasant to taste
Smelly



Danger

Pesticides

Non-food Grade Cleaning products

Heavy Metals e.g. Lead



Unpleasant to taste

Disinfectant



Smelly

Scented soap

Hand cream

Strong Body scents and deodorants

CLEANING AND CLEANING AGENTS

Soap and Detergents

These will help to remove dirt and grease.

Disinfectants and Sanitising Agents

These products will kill Bacteria.

**Only use 'Food Grade' products
Do not use highly scented products**

**You must follow the procedures
that are laid down in your farm and pack house
carefully and thoroughly.**



Only use the products that your manager has provided for that job.



Do not mix different products in the same container unless you are told to do so.



Use the correct amount:

- too much will flavour the vegetables
- too little will not kill the bacteria



Clean the **WHOLE** area thoroughly



Use a clean cloth or mop



Change the water frequently or if it looks dirty. Chlorine will not work in dirty water.



Follow the cleaning schedule and record what you have done

BE A DILIGENT USER OF PESTICIDES

Chemicals

Supervisors are responsible for seeing that all the Instructions are followed

It is important that:

- You use the right product
- You measure accurately and mix thoroughly
- You spray the right crop
- You follow your instructions accurately

Spraying

You must: -

- Follow 'Safe Working practices' at all times
- Spray carefully and not over treat some areas
- Not allow your spray to drift on to other crops
- Put up warning signs to show that the crop has been sprayed.

Harvest Interval

Do Not Harvest Until....

This is the amount of time that must be left between spraying and harvesting.

Remember each pesticide has a different Harvest Interval (PHI)

Do not pick crops unless you are sure that it is safe to do so.

Check with your supervisor.

Records

Your records will be used as evidence of 'Due Diligence' and will be checked. You must make sure that your records are always legible, complete, accurate and kept up to date

FOREIGN BODIES

A foreign body is something solid which is not part of the product. Foreign bodies that can get into the vegetables include:

Dead flies	Caterpillars
Mouse and rat droppings	Soil
Metal staples	Knives
Bits of jewelry	Finger nails
Hair	Glass
Used plasters	Cigarette ash



Nobody wants these in their food and your customers will go elsewhere.

You can help to protect the vegetables:

- ⇒ Account for all the knives, tools and plasters used
- ⇒ Open boxes of packaging outside the packing area
- ⇒ Keep doors and windows closed
- ⇒ Wear overalls and keep your hair covered. Do not wear jewelry or smoke and trim your finger nails
- ⇒ Report to your supervisor if you see any signs of rodents, insects birds etc. in the packing area.
- ⇒ Do not smoke, eat or drink whilst you are working
- ⇒ Keep a glass register and check glass fittings daily
- ⇒ Reject soiled produce

BE A HEALTHY WORKER

Remember:

FOOD SAFETY IS JUST AS IMPORTANT AT HOME

Look after yourself and share your knowledge with your family and friends.

Wash Hands

Hands should be washed with soap and clean water:

After using the toilet
Before eating

Eat Fresh Clean food

- ⇒ Eat perishable foods whilst they are fresh
- ⇒ Do not store cooked food unless you can keep it cool in a refrigerator
- ⇒ Wash fresh food in clean water before eating it
- ⇒ Cover cooked food to keep the flies off

Prevent Disease Spreading

- ⇒ Keep the toilet clean and insist that people use the facility
- ⇒ Do not cough and sneeze on people or Food
- ⇒ Use separate food dishes and utensils for sick relatives and friends
- ⇒ Go to the clinic if you feel ill.

FOOD SAFETY AT HOME

Keep
Out

Pests

Keep rats, mice, birds, flies and cockroaches out and have a control programme in operation.

Germs

Wash hands:

- Before starting work
- After using the toilet
- After handling raw meat, dirty packets or vegetables

Keep
clean

Wash work surfaces and chopping boards, between jobs and after use, with clean water, clean cloths and disinfectant or sanitizing solution.

Wash raw food e.g. salads in clean water before eating.

Keep
separate

Use separate knives, chopping boards etc. for cooked and raw foods and if this is not possible wash well between tasks.

Cook well
and
Re-heat
thoroughly

**Bacteria
die at
70 °C**

**Rest in
peace**

**Manage rubbish carefully and correctly.
Empty bins regularly and keep them clean**

DUE DILIGENCE AND GOOD MANAGEMENT

Due diligence is part of good Farm management.

Well managed farms are successful farms.

Successful farms offer secure employment

Please take your responsibilities seriously and see that "Due Diligence" is practiced on all occasions

We all need Safe Food

Acknowledgments

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