



ASEAN GOOD AGRICULTURAL PRACTICES

Food Safety Module

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Outline of Presentation



1 Brief History of the Development of ASEAN GAP

2 Definition of GAP and Content of Its Four Modules

3 Food Safety Hazards in Food

4 ASEAN GAP – Food Safety Module

5 Prospects of ASEAN GAP – Future Works



The ASEAN Good Agricultural Practices (GAP) Project



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Title

Quality Assurance Systems for ASEAN Fruit (QASAF) Project (2004) – THE KICK-OFF PROJECT

Implemented during Phase III of the ASEAN – Australia Economic Cooperation Program (AAECP)

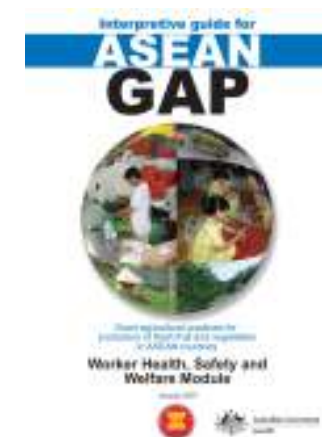
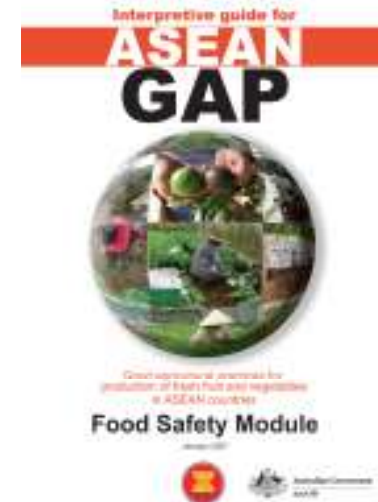
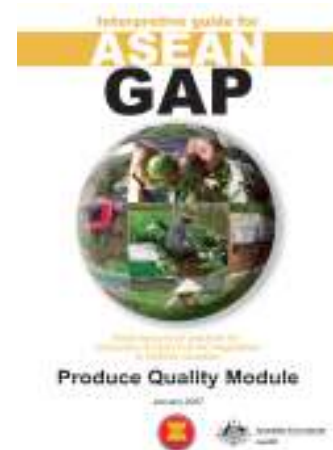
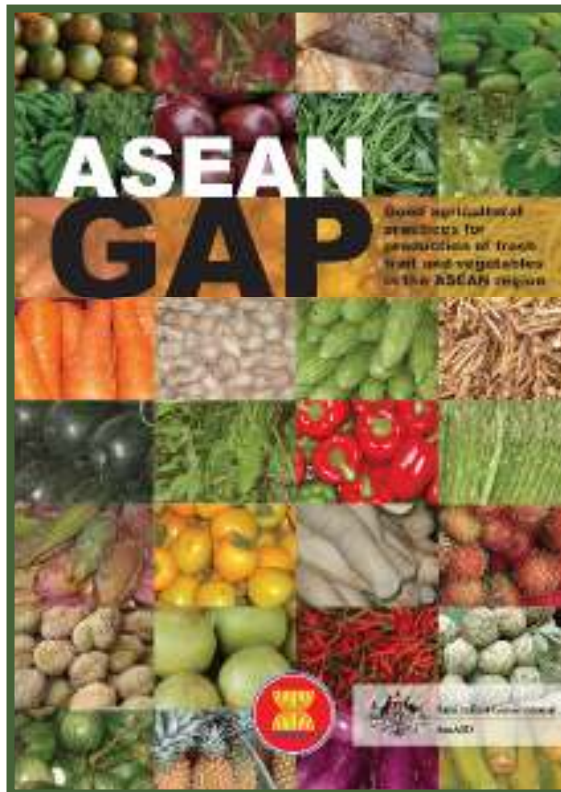
Outcomes

- ➊ Good Agricultural Practices (GAP) standard for the production of fresh fruit and vegetables in the ASEAN region
- ➋ Establishment of ASEAN GAP Taskforce – to guide the final stages of the drafting of the GAP standard and implementation guidelines

The ASEAN GAP Regional Standard and its Interpretative Guidelines



1





The purpose of ASEAN GAP is to



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facilitate the harmonisation of national GAP programs in the ASEAN region,

facilitate trade regionally and internationally,

enhance the safety and quality of fruit and vegetables for consumers,

enhance the sustainability of the environment in the ASEAN region, and

protect the health, safety and welfare of workers



Scope



1

ASEAN GAP covers both conventional production systems, where produce is grown in the soil, and hydroponic systems where produce is grown in inert media. Production may occur in the open or in a protected environment

All types of fresh produce are covered by ASEAN GAP except high risk products such as sprouts and minimally processed produce

ASEAN GAP Strategic Plan of Actions



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1

- Establish a mechanism to manage ASEAN GAP

2

- Develop and implement national GAP programs in ASEAN Member States (AMSs)

3

- Align national GAP programs with ASEAN GAP



1

4

- Create awareness and knowledge of ASEAN GAP

5

- Engage the private sector in future development of ASEAN GAP



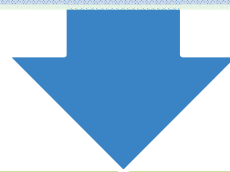
Updates on the Implementation of ASEAN GAP SPA



1

Strategic Action #1

Establishment of a mechanism to manage ASEAN GAP



Expert Working Group on ASEAN Good Agricultural
Practices (EWG-ASEAN GAP)

1st Meeting

2nd Meeting



1

Strategic Action #2

Develop and implement national GAP programs in ASEAN Member States (AMSs)



Brunei Darussalam had accomplished the process of establishment of national GAP

Cambodia, Lao PDR and Myanmar in the process of development of their national GAP programmes



1

Strategic Action #3

Align national GAP programs with ASEAN GAP



By 2011, all ASEAN Member States (AMSs) have totally aligned their national GAP programmes with the Food Safety Module of ASEAN GAP

By 2012, alignment plans for all AMSs' national GAP programmes with the other modules of ASEAN GAP will be made available.



Current alignment of national GAP Programs with ASEAN GAP



1

Country	Food safety	Environmental Management	Worker's health and safety	Produce quality
Thailand	C	P	P	C
Malaysia	C	P	P	S
Indonesia	C	C	P	P
Singapore	C	N	N	S
Philippines	C	N	P	S
Brunei Darussalam	C	N	N	N

T = Total alignment

C = close alignment

P = partial alignment

N = no alignment

S = covered by another national standard



NEW PROJECT



1

It mainly aims to institute a mechanism that will ensure full implementation of the ASEAN GAP Strategic Plan.

develop strategies that will enable ASEAN GAP attain international recognition

**Global
recognition of
quality
assurance
systems for
ASEAN fruit &
vegetables**



Definition of GAP



2

Broadly, a **GAP approach** aims at applying available knowledge to addressing **environmental**, **economic** and **social sustainability** dimensions for on-farm production and post-production processes, resulting in **safe** and quality food and non-food agricultural products

Contents of ASEAN GAP Modules



2



Food Safety

- Recommended practices 10 elements.
- Each element has background information to explain how contamination can occur. Specific information is then provided for each practice to explain what is required to implement the practice.



Produce Quality

- Recommended practices 10 elements
- example of a quality plan for production, harvesting and postharvest handling of mangoes – describing hazards that may occur, causes of quality hazards and preventative measures

Contents of ASEAN GAP Modules



2

Environmental Management



- Recommended practices - 13 elements
- Provides information about the potential environmental hazards - negatives impacts that occur to the environment on and off the property as a result of the production, harvesting and postharvest handling of fruit and vegetables.



Workers Health, Welfare and Safety

Recommended practices – 6 elements

This section contains on the four steps to managing the risk of hazards to worker health, safety and welfare – identify the hazards, assess the risk, control the hazards and monitor and review hazards.



Food Safety Hazards in Foods



3

Hazard

A biological, chemical or physical **agent** in, or condition of, food with the potential to cause an adverse health effect

Risk

A function of the **probability** of an adverse health effect and the severity of that effect consequential to a hazard(s) in food



Food Safety Hazards in Foods



3

Food Safety Hazard

is any chemical, biological, or physical substance or property that can cause fresh fruit and vegetables to become an unacceptable health risk to consumers

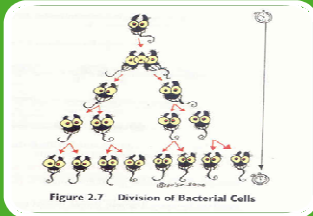
◦Controlling food safety hazards during production, harvesting and postharvest handling (trimming, grading, packing, transport etc) of fresh produce is important to protect consumer health and to gain access to markets



Types of Hazards



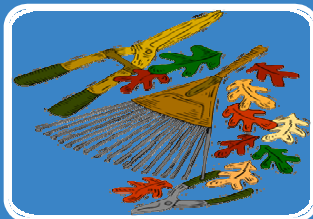
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Microbial



Chemical



Physical



Types of Hazards



3



Microbial



Chemical



Physical

Sources of Microbial Hazards for Fruits and Vegetables

1. Water
2. Manure
3. Human
4. Air
5. Soil
6. Animals
7. Sewage fluids





Types of Hazards



3



Microbial



Chemical



Physical



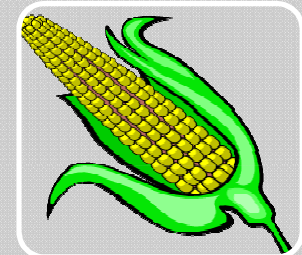
Pesticides



Other
Agro-
chemicals



Fertilizers



Naturally
occurring
chemicals

Types of Hazards



3



Microbial



Chemical



Physical

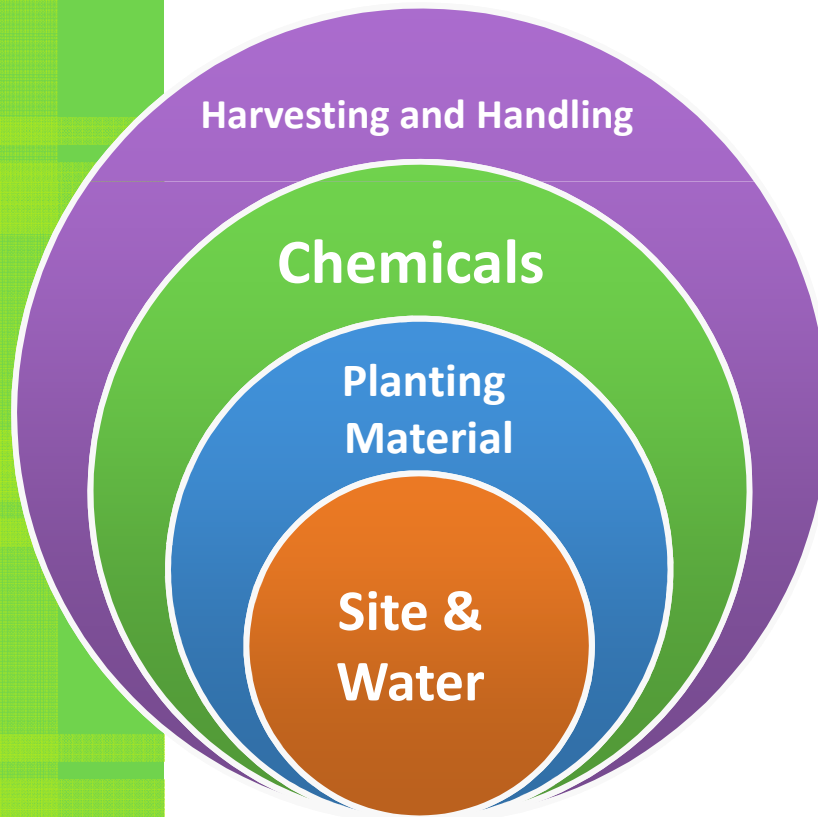
Any potentially harmful extraneous material not normally found in food such as glass, bone splinters, twigs, metals, buttons, etc. that are likely to cause choking, cuts, injury or other adverse health effects.

ASEAN GAP – Food Safety Module



4

Major Components



Harvesting & Handling

- Equipment, containers and materials
- Buildings and structures
- Cleaning and sanitation
- Personal hygiene

Chemicals

- Fertilizers and soil additives
- Agrochemicals
- Other chemicals

Planting materials

- Source and treatments

Site & water

- Site history and management
- Source of water & its microbial quality

Hazards associated with site



4

Microbial

Chemical

Fecal contamination from overflowing manure storage sites, polluted water sources

Organic waste

Agricultural wastes

Site & Water

Recommended practices



What else can we do?

What to do next?

Assessment

4

01

- Previous usage
- Adjacent land use
- Access of wild & domestic animals

02

- Carry out land use plan
- Allow 3 years buffer time for land used for rearing animals

03

- Look for another site if cannot be remedied
- Plant low risk plants (e.g. plants grown not close to the ground)
- Physical barriers

Site &
Water



Site Management



4



Land preparation



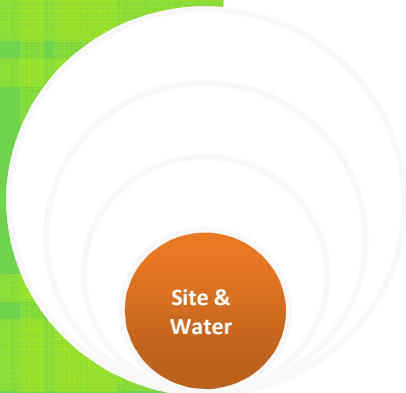
Planting design



Fencing/barriers



Soil renewal





Water



4

Cycle of assessment

- **Assessment of source**

Risk for possible contamination is assessed for each operation

- **Water testing**

Where required, tests are conducted at a frequency appropriate for the condition

- **Where there is risk**

Alternative water source is used or the water is treated and monitored

- **Untreated sewage water**

Is not used during production and postharvest handling of produce

Site &
Water

Planting Material



4

01

Careful selection
of planting
materials

Should be
disease-free &
non-toxic to
human

02

Source of
planting
material

Accredited nurseries
and Certified planting
materials
Record keeping

03

If planting material
is produced in the
farm

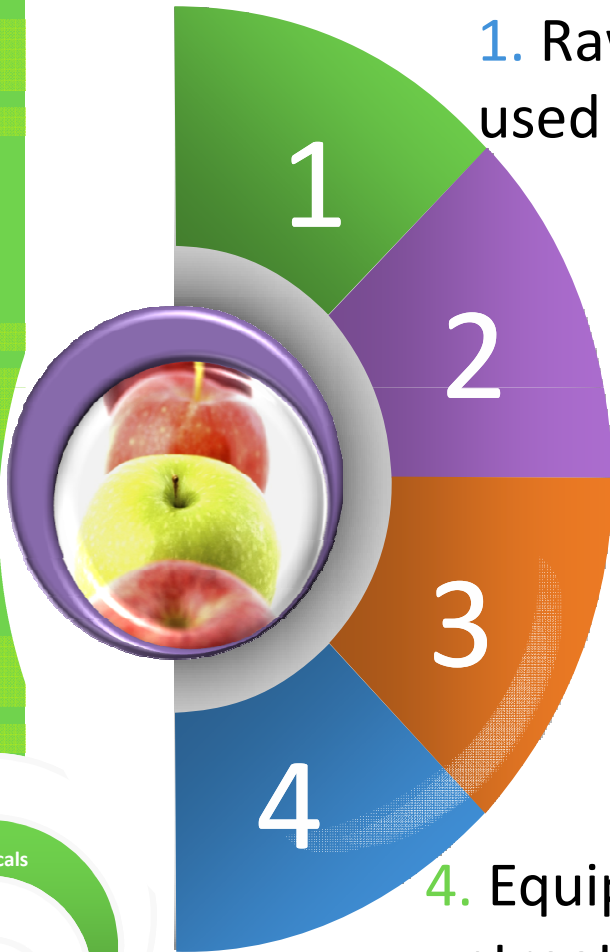
Record of seed
treatments as well
as of stock plants
Ensure workers
safety during seed
treatment

Planting
Material

Chemicals - Fertilizers



4



1. Raw manure or human waste must not be used for vegetable production

2. Natural fertilizer must be fully composted with no foul smell.

3. Heavy metal analysis must be conducted

4. Equipment that come in contact with untreated manure must be properly cleaned

Chemicals



4



5. Barriers or physical containment should be part of manure storage areas

6. Complete record of fertilizer preparation must be kept

7. Organic fertilizer should be applied pre-planting or in early stages of growth of plant.

Chemicals - Pesticides



4



1. Use registered pesticides

2. Read and follow the label instructions.

3. Practice Integrated Pest Management (IPM)

Chemicals



Harvesting and Handling



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Produce should undergo some preparatory steps prior to marketing to command a higher price, to have assurance that it is safe to eat, and to enhance competitiveness in the trading arena.

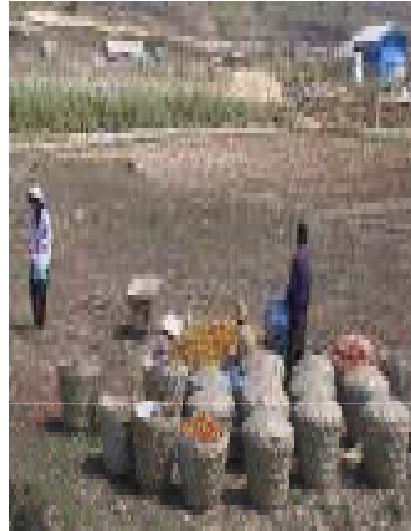
REMEMBER!!!





4

Harvesting



Packaging





Sources of contamination during harvesting



4

Microbial

workers not wearing protective clothing

personal hygiene of workers

washing facility for the produce

containers for harvesting the produce – not elevated

Chemical

sanitizing agent

containers for harvesting the produce
– toxic materials





Harvesting Considerations



4



Harvest when the foliage is dry to minimize spread of diseases.



Use clean and lined containers.



Keep harvested produce out of the sun to avoid sun injury and unnecessary heating of product.

Harvesting and Handling



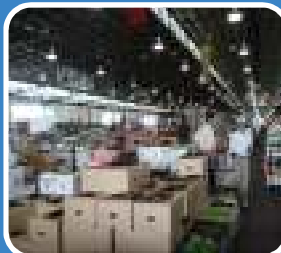
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Harvest and handle gently: cuts, bruises and other injuries increase decay and water loss.



Reduce physical damage by reducing handling steps.



If possible, harvest and directly pack into container in which the product will be marketed.

Harvesting and Handling



Sources of contamination during packaging



4

Microbial

workers not wearing protective clothing

personal hygiene of workers

washing facility for the produce

containers for harvesting the produce – not elevated

Chemical sanitizing agent

- in case of retail packed produce, non-toxic & clean packaging materials

fruit coating material i.e. fruit wax



What are packinghouse operations?



4

...inside a packinghouse

...in the field/harvest area
“ FIELD PACKING ”

processes/activities
done to prepare
fresh produce for
marketing, storage
or transport
maybe done





Market preparation



4

Prepare commodities for marketing inside a packing shed.

Basic requirements of a packing shed

close to production area and near thoroughfare

minimum area = 20 m²/ton commodity processed at one time

elevated to allow adequate drainage

elevated to allow adequate drainage

well-lighted

with clean toilet facilities (with water and soap)

must have adequate supply of water





Future Works for ASEAN GAP



5

Accreditation of AMS GAP Certification Bodies (CBs)

Aligned GAP Inspector / Auditor Qualification

Full alignment of national GAPs with ASEAN GAP

Global Recognition

Regional Branding



Thank You!

