

Centro de Investigación en Alimentación y Desarrollo, A.C.

POSTHARVEST HANDLING OF MANGO UNDER A GLOBALY RECOGNIZED MANAGEMENT SYSTEM FOR FOOD SAFETY AND QUALITY

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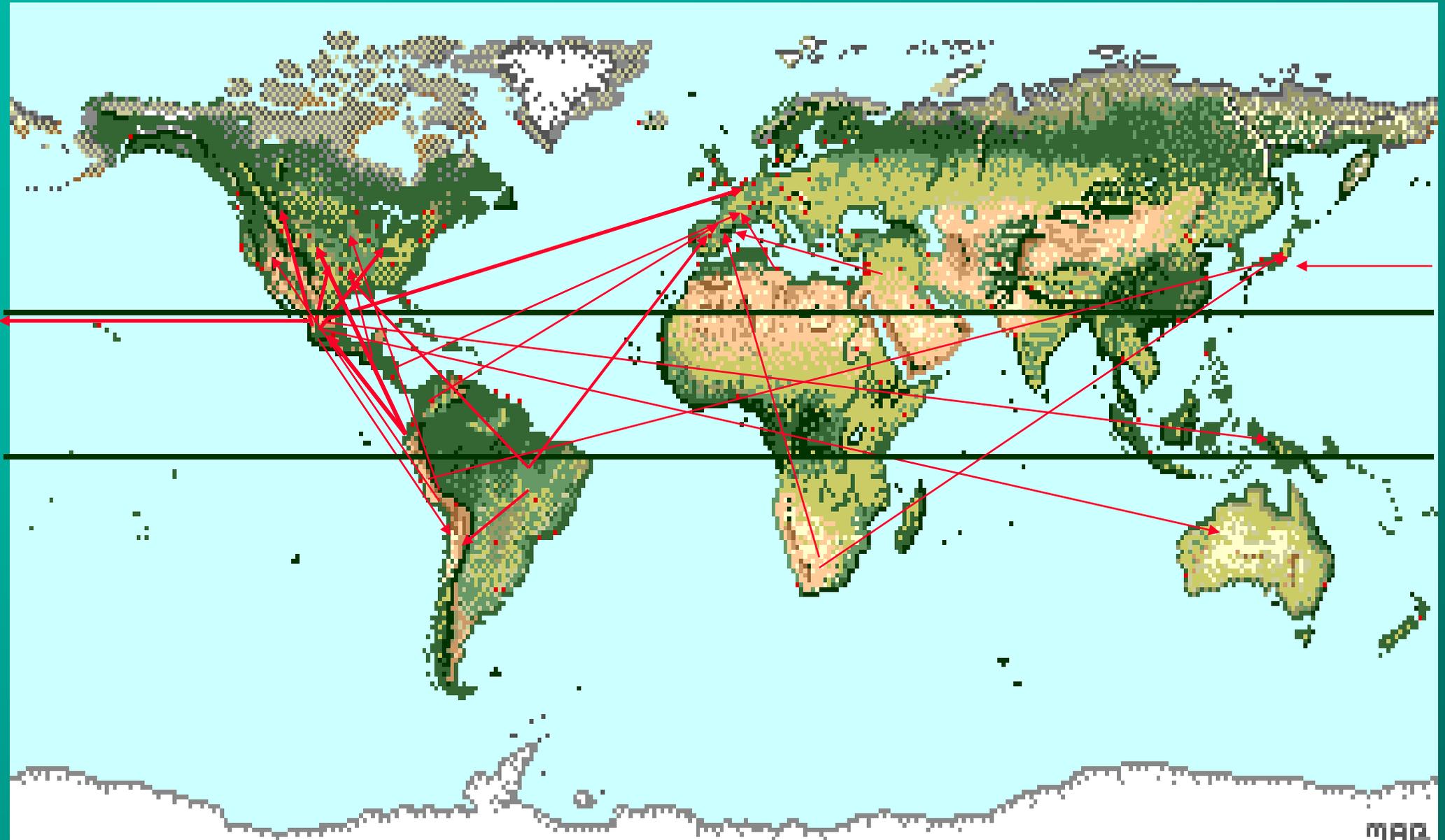
X Simposio Internacional de Mango

Del 3 al 7 de junio, Bávaro, Punta Cana, República Dominicana

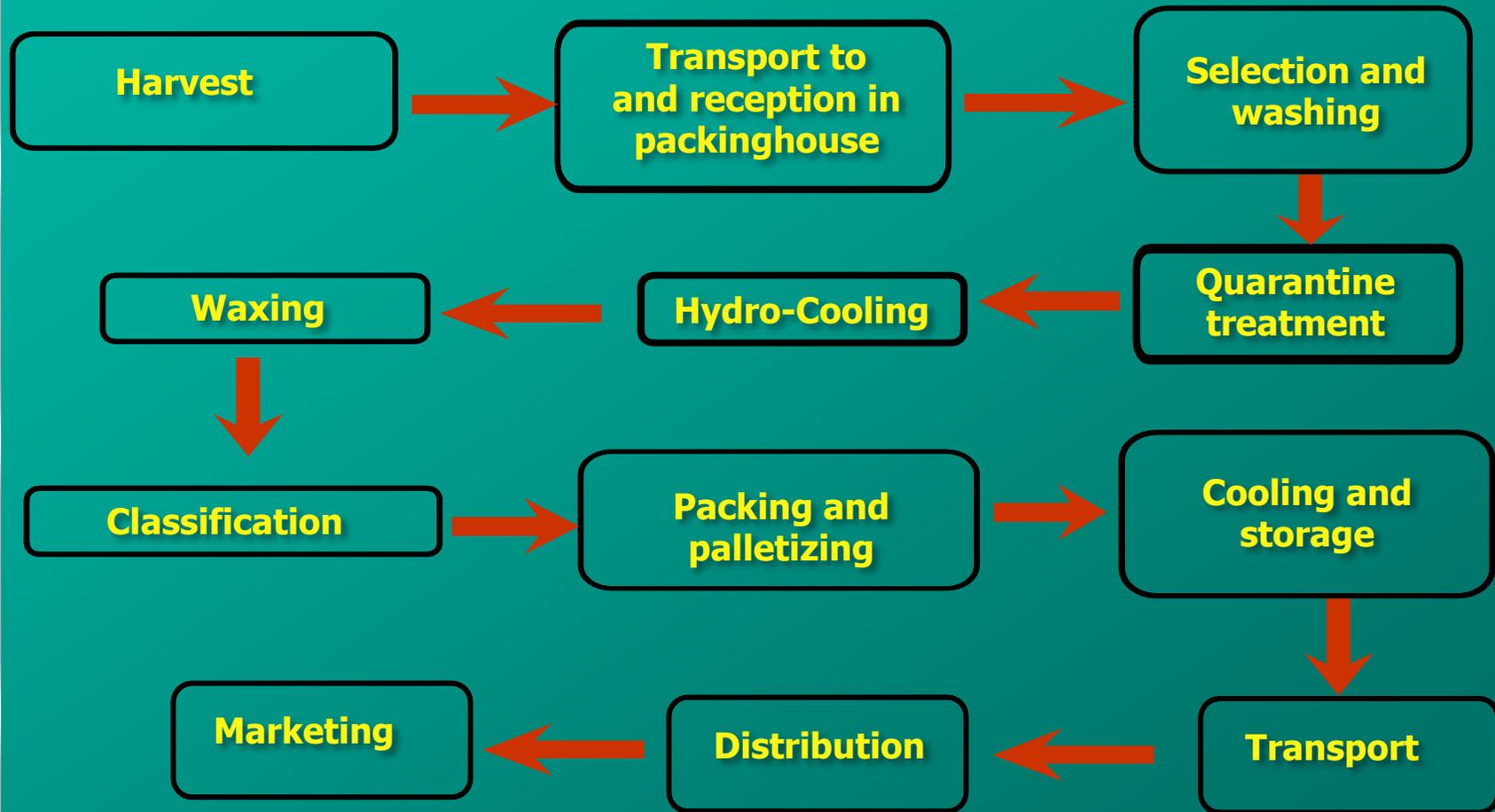
2013



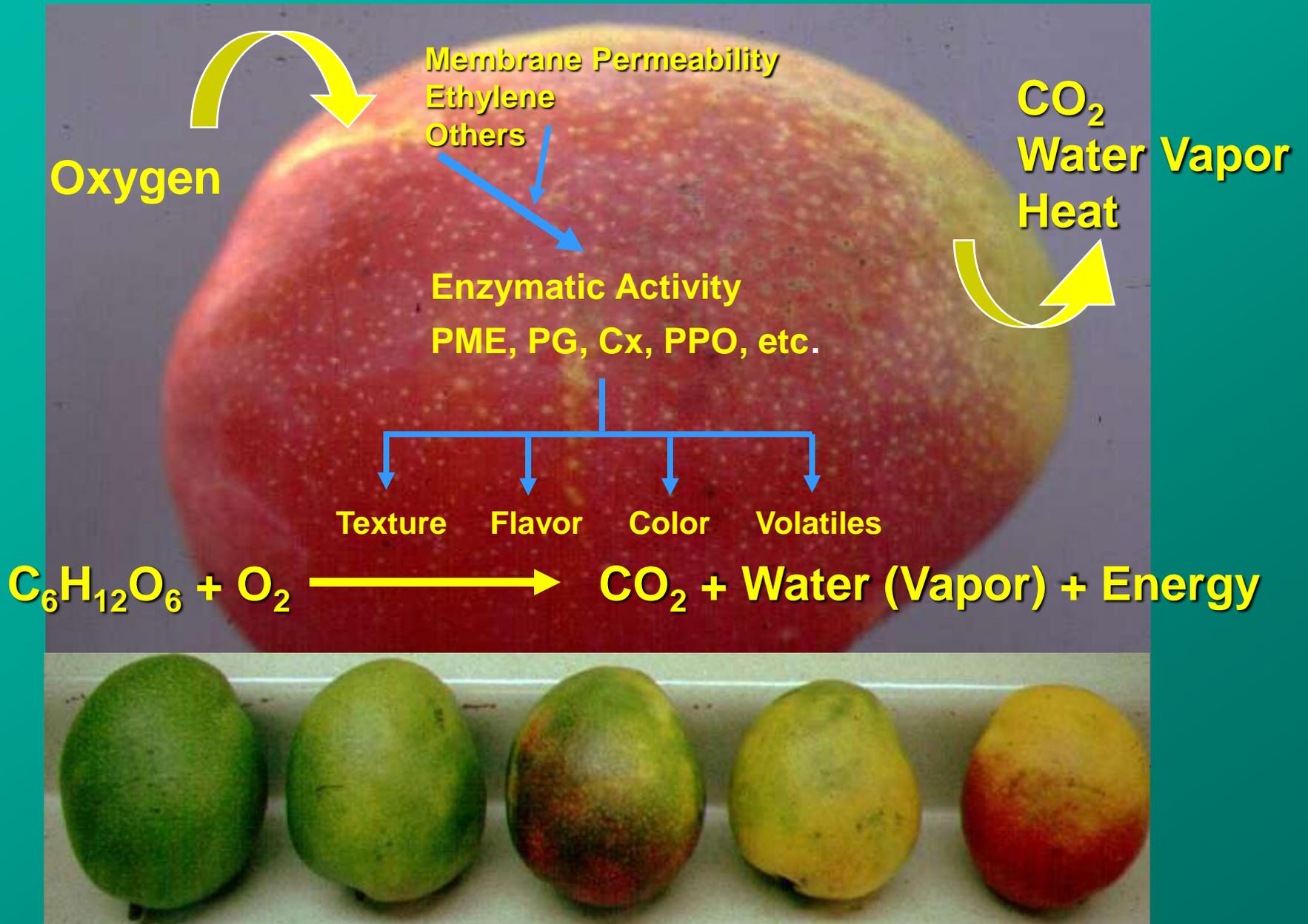
Exportation Markets (Fruit Shelf Life)



POST-HARVEST UNIT HANDLING OPERATIONS (PRODUCTION PROCESS)



MATURITY





Wilson Popenoe Award. Best paper on Fruits. Maturity Index determination of the Main Mango Cultivars produced in México. XXXIX Annual Meeting of the Interamerican Society for Tropical Horticulture. Santo Domingo, Rep. Dominicana. 16-20 Agosto 1993.

Table 1. Minimum maturity requirements of the main mango cultivars produced in México.

Variety	Pulp Color Number	Titratable Acidity (%)	Firmness Kg-f	TSS °Brix	Days to ripening at 20°C
Tommy					
Atkins	1	1.199	13.2	7.3	11
Haden	1	1.069	12.2	7.3	13
Kent	1	0.603	12.4	7.4	12
Keitt	1	0.715	11.0	6.6	13
Ataulfo	1	4.201	15.6	2.9	15

5. COLOR CLASIFICACION

Following terms or numbers may be used in relation to the class, describing the fruit pulp color as maturity stage index in any mango shipment.

- 1) Cream.- (not white). This means that the pulp color is totally cream. The colour shadow can vary from light to dark.**
- 2) Turning.- This means that there are a defined color breakdown from cream to yellow color, over no more than 30% of the observed area and beginning nearest the fruit core.**
- 3) Yellow.- This means that more than 30% and less than 60% of the observed area, shows a yellow color.**
- 4) Yellow-orange.- This means that more than 60% of the pulp, shows a yellow color and there is a defined color breakdown from yellow to orange over no more than 30% of the observed area and beginning nearest the fruit core.**
- 5) Orange.- This means that more than 90% of the fruit pulp, shows an orange color.**

HADEN



AVERAGE COLOR					
INTERIOR FLESH SAMPLES					
MATURITY/RIPENESS	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
FIRMNESS	12 - 15	12 - 14	5 - 8	4 - 5	2 - 3
BRIX	6 - 8	9 - 11	12 - 15	14 - 16	14 - 17

KEITT



AVERAGE COLOR					
INTERIOR FLESH SAMPLES					
MATURITY/RIPENESS	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
FIRMNESS	16 - 19	12 - 15	7 - 9	2 - 4	1 - 2
BRIX	8 - 10	9 - 12	10 - 12	12 - 14	14 - 17

KENT



AVERAGE COLOR					
INTERIOR FLESH SAMPLES					
MATURITY/RIPENESS	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
FIRMNESS	19 - 22	14 - 18	11 - 13	5 - 8	2 - 4
BRIX	8 - 10	9 - 11	12 - 13	12 - 14	14 - 15

TOMMY ATKINS



AVERAGE COLOR					
INTERIOR FLESH SAMPLES					
MATURITY/RIPENESS	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
FIRMNESS	18 - 20	15 - 17	10 - 13	6 - 8	3 - 6
BRIX	7 - 9	8 - 11	9 - 11	10 - 13	12 - 15







Agua Caliente:

90 min para mangos redondos de 500 a 700 g

75 min para mangos redondos y menores de 499 g y para mangos aplanados/alargados de 570 g o menos

65 min para mangos aplanados /alargados de 375 g o menos.

Vapor

Aire Caliente con H.R.>95%

Temperatura de la fruta 47-48°C

150 min.

¿Calidad de la Fruta?

¿Evaluación de Equipos?

Aire Caliente Forzado:

Temperatura 51.7°C

Tiempo 125 min.

Velocidad del Aire 0.4 m³/s

¿Calidad de la Fruta?

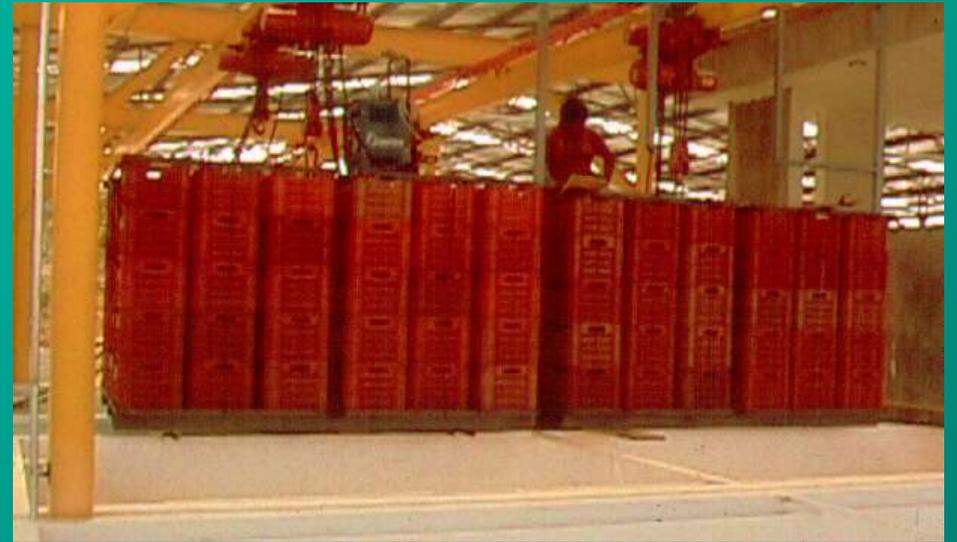
¿Evaluación de Equipos?

Irradiación

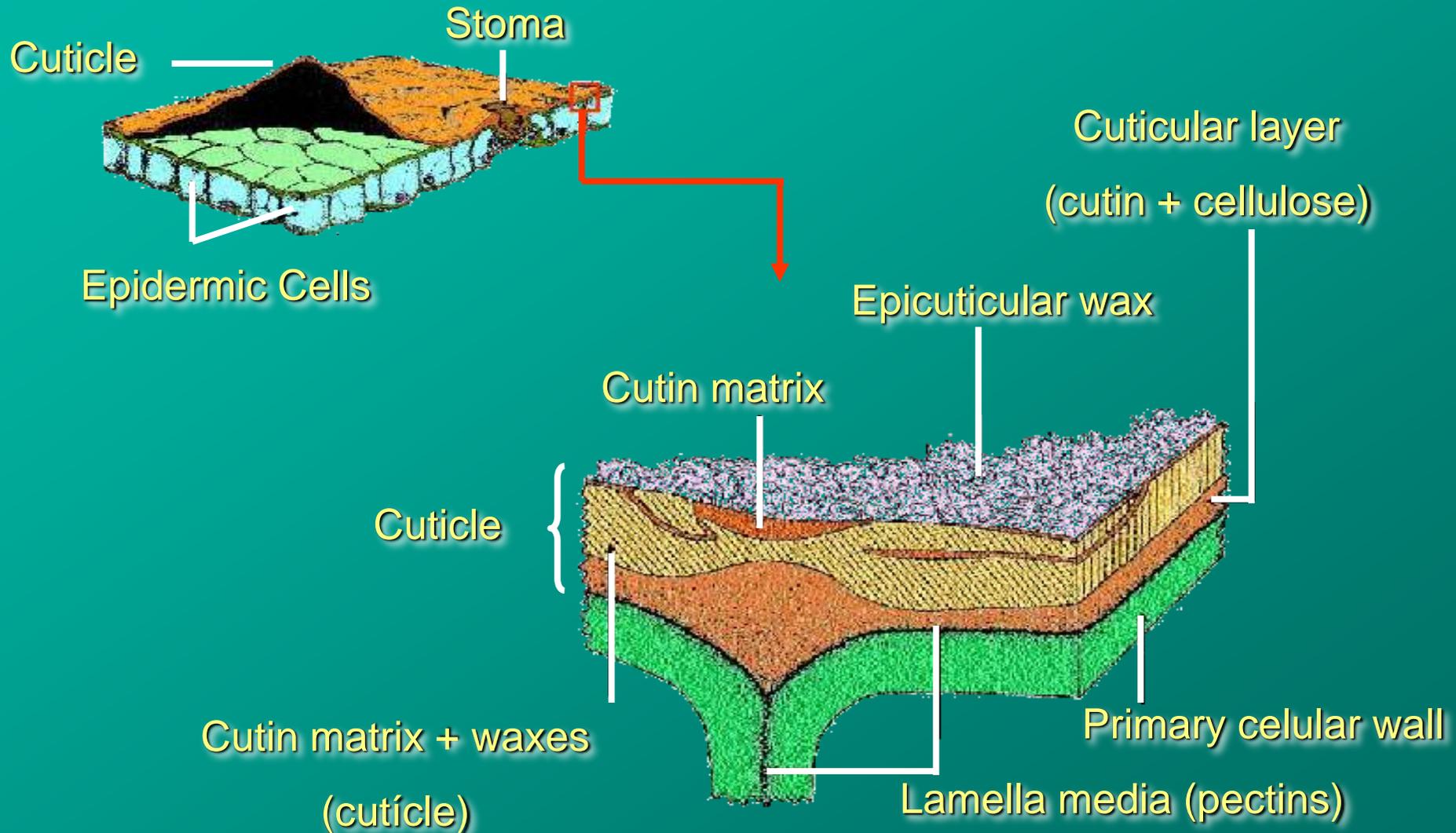
75-150 Gy (Co-60; Cs-135)

Grupo Consultivo Internacional sobre Irradiación de Alimentos

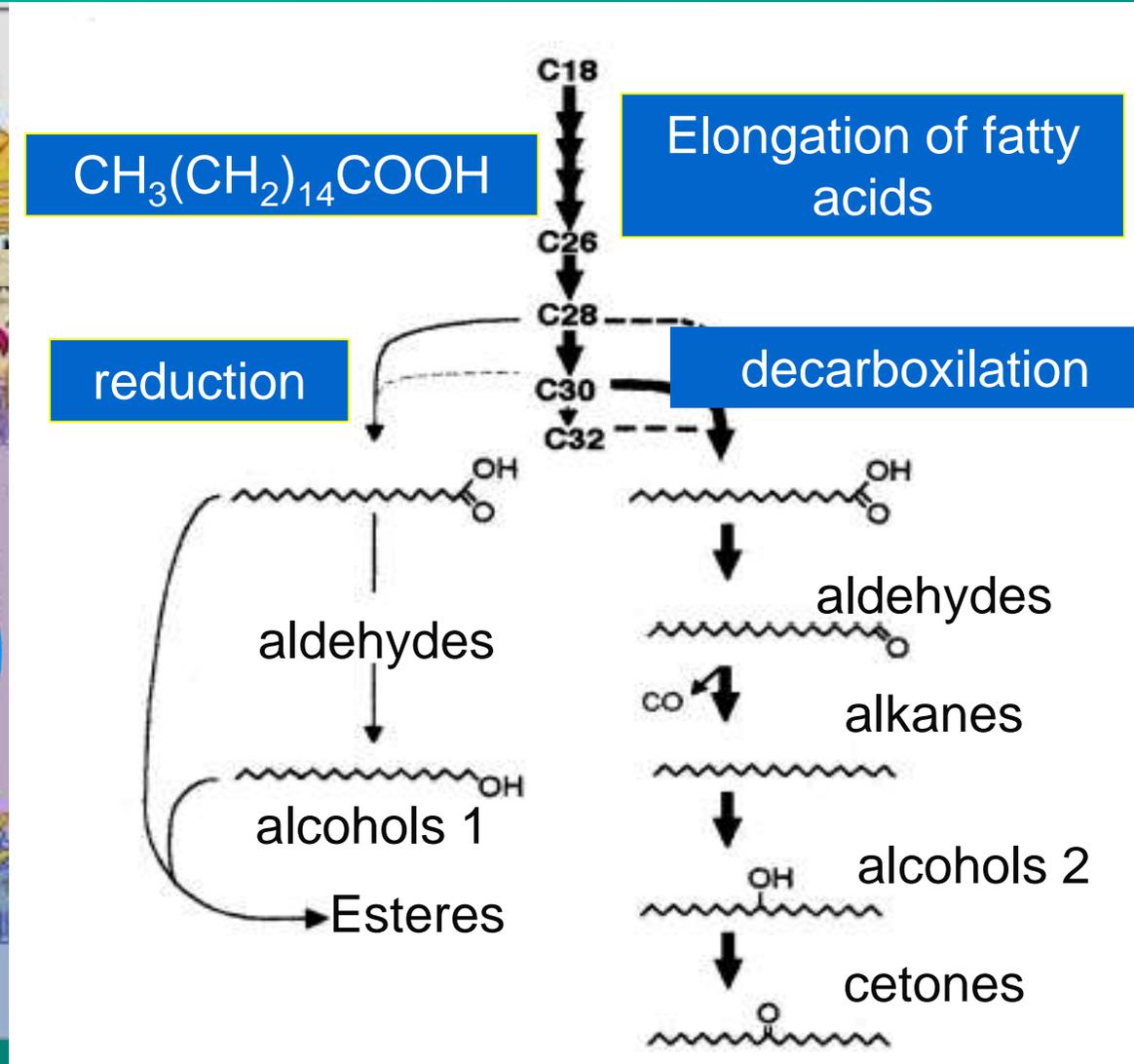
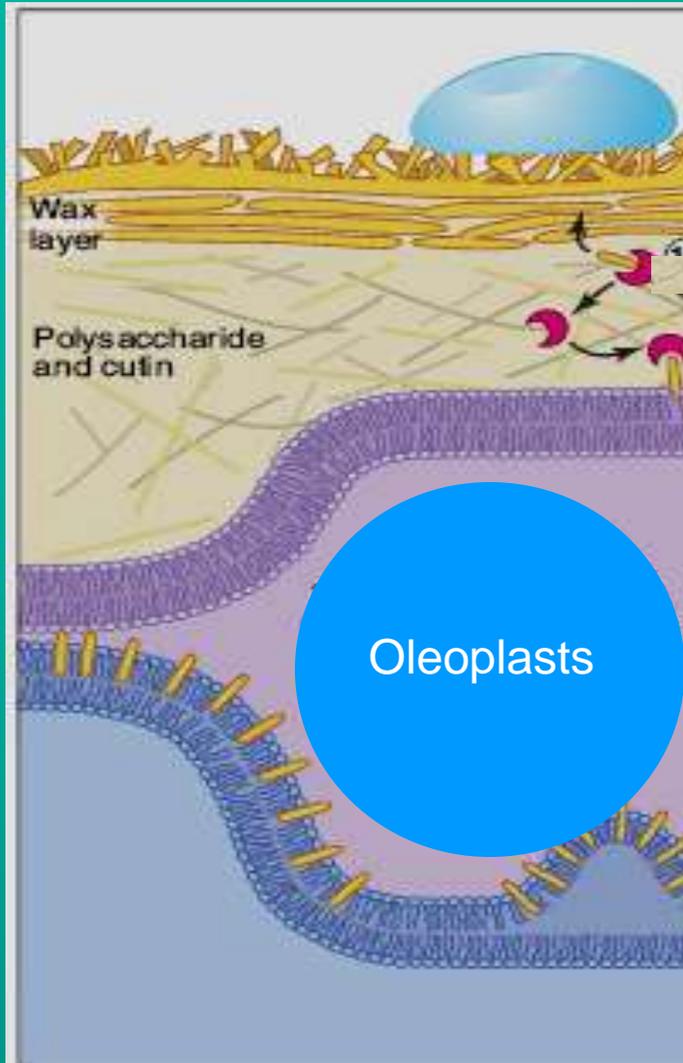
¿Mortalidad<>Esterilización? ¿Calidad del Producto<>Aceptación?



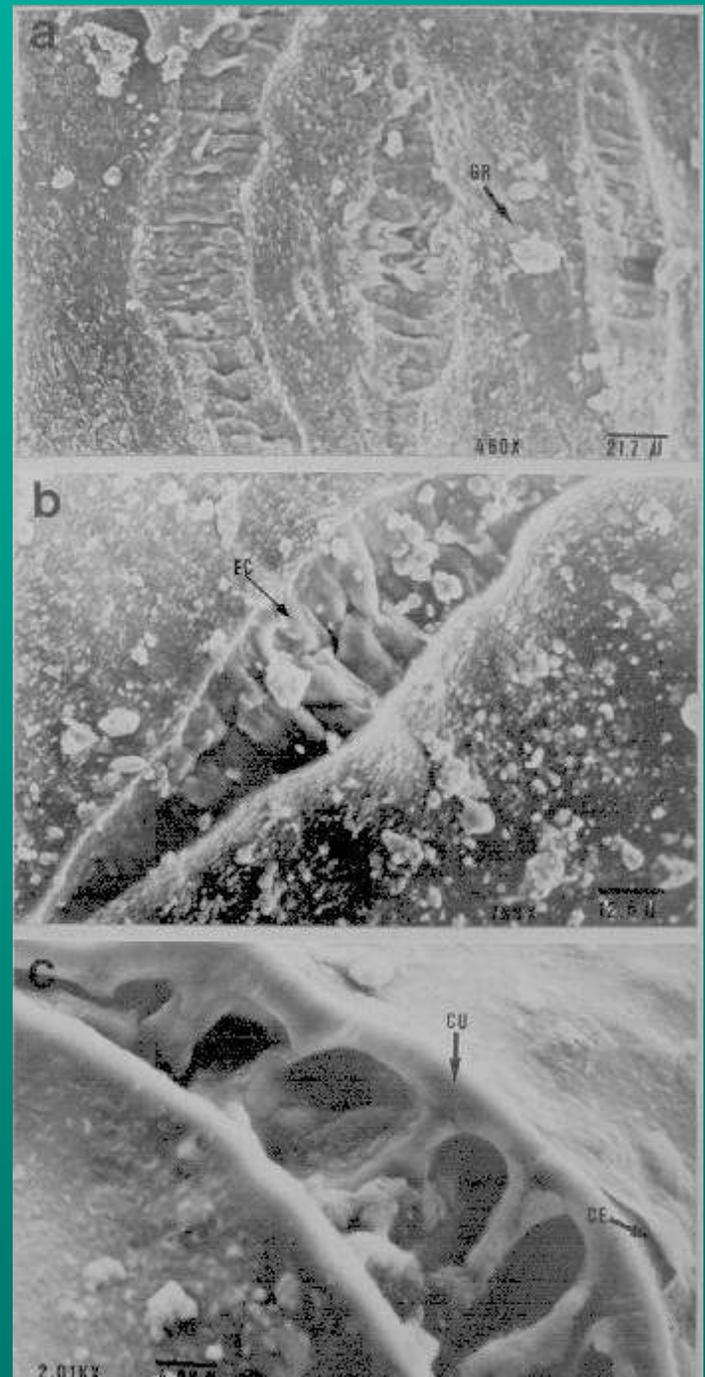
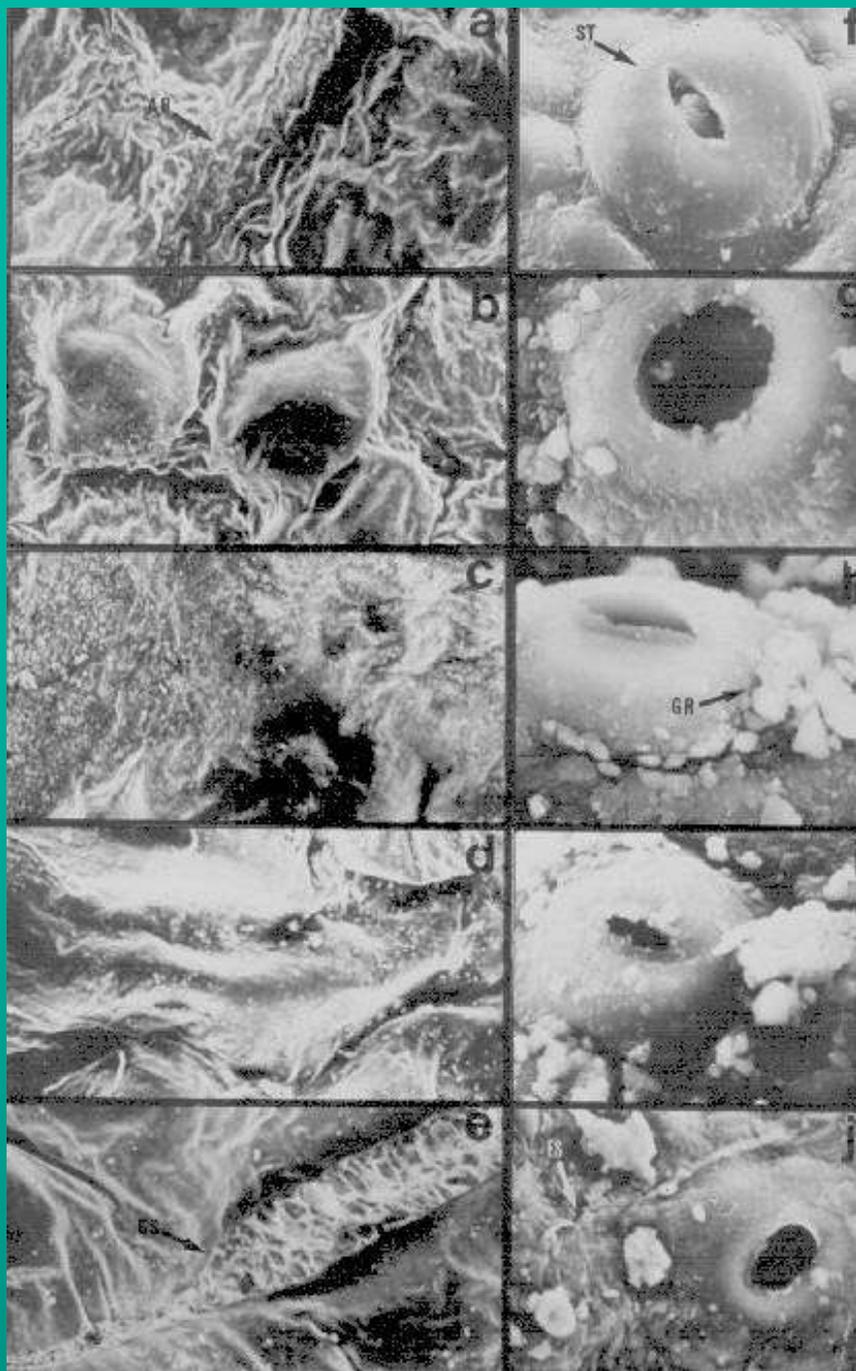
EDIBLE FILMS



Biosíntesis de la Cutícula



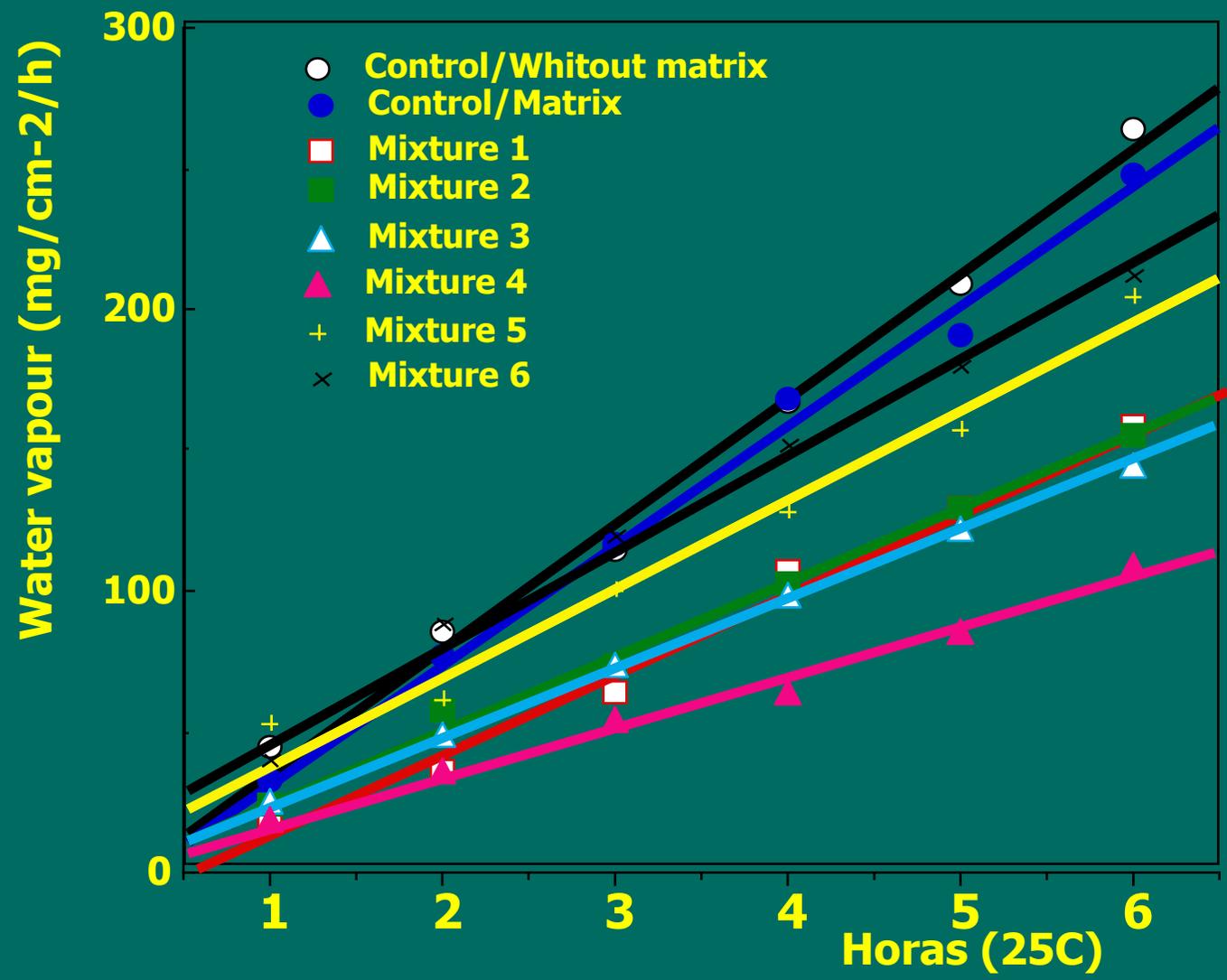
(Schulz and Frommer, 2004)



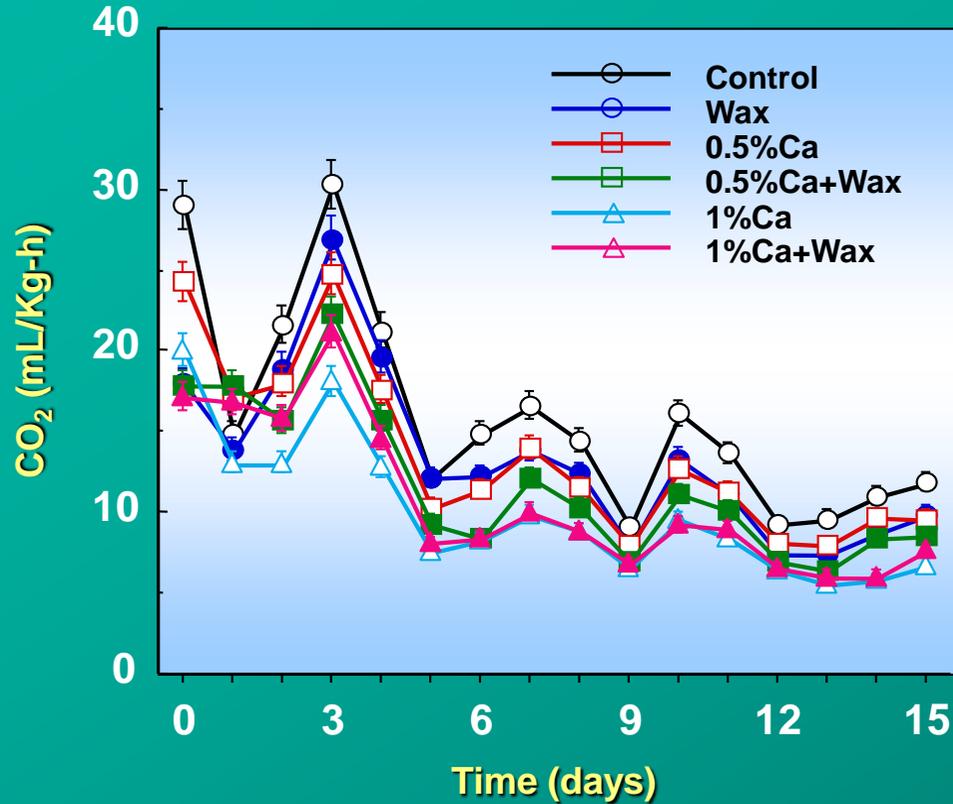




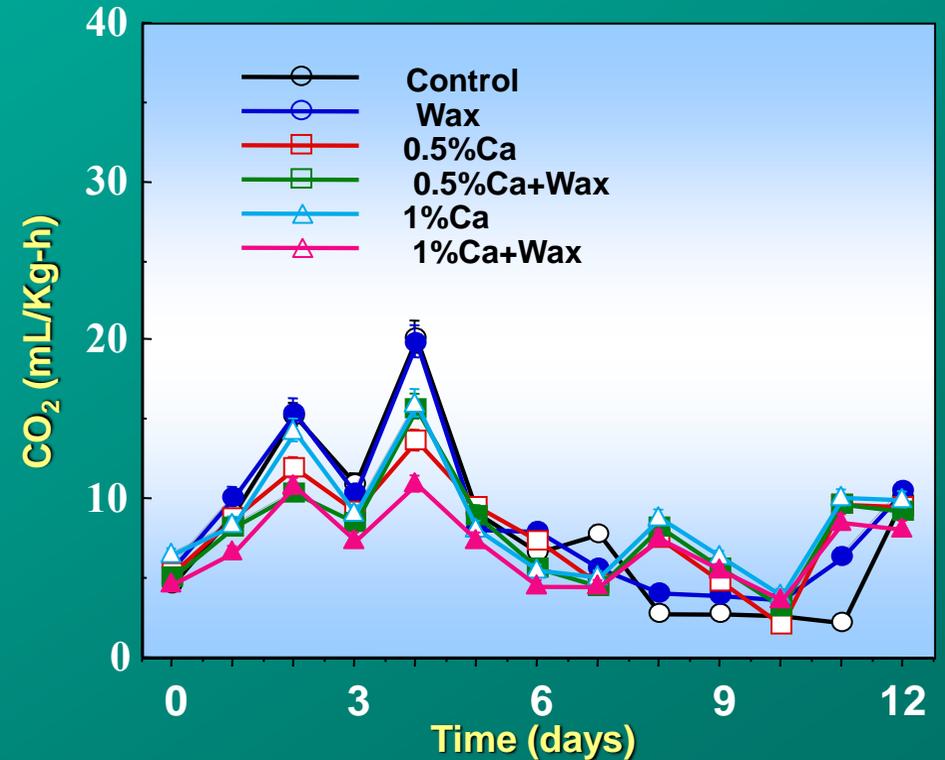
Permeability evaluation of edible films mixtures



CO₂ Production



Storage at 20°C



Storage at 10°C during 30 days and translated to marketing conditions (20°C)





3. CLASIFICACION (a) Minimum requirements)

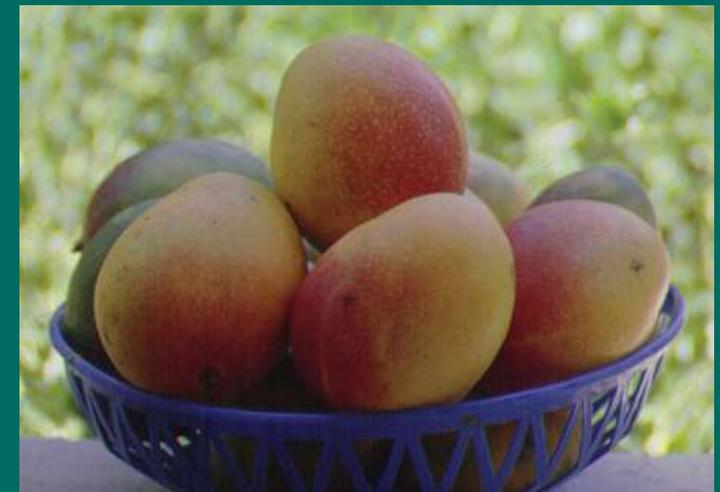
Subject to the special provisions for each class and the tolerances allowed, the mangoes must meet the following requirements:

1) Basic Requirements:

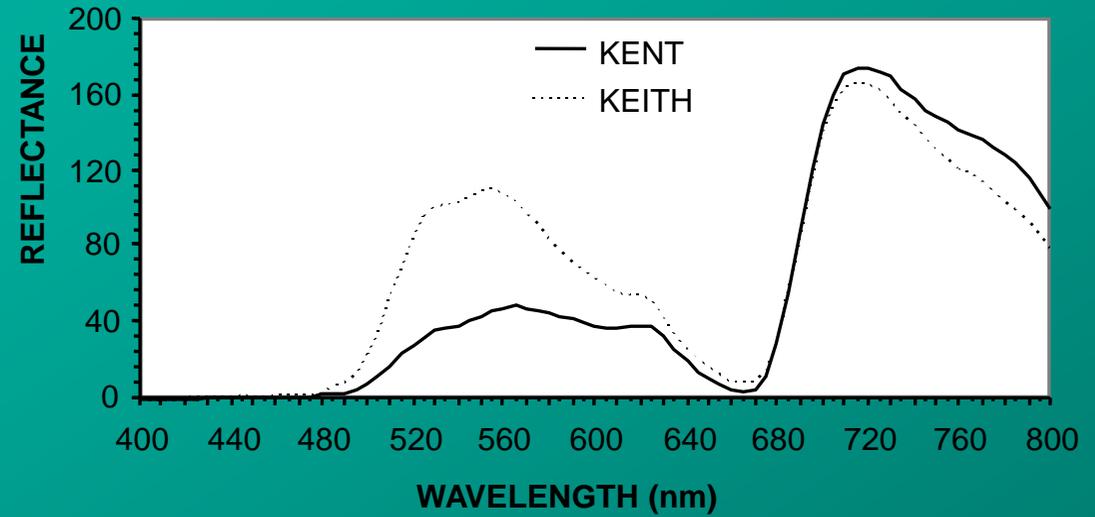
- Whole
- Firm
- Fresh appearance
- Clean
- Sufficiently developed
- Satisfactory ripeness and
- When peduncule is present, it shall be no longer than 1.0 cm

2) Free from:

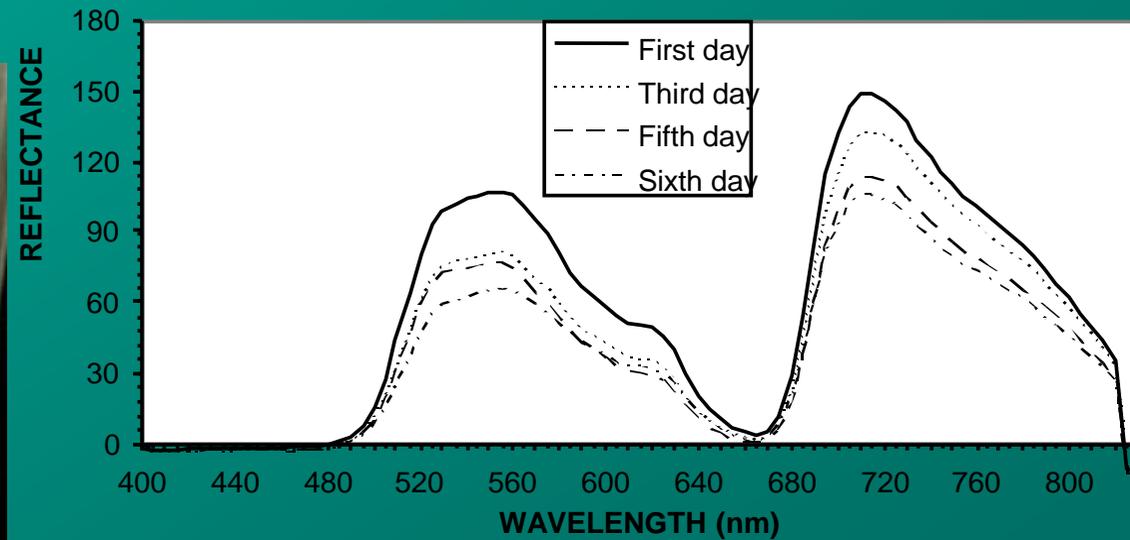
- Decay
- Any visible foreign matter
- Black necrotic strains or grooves
- Marked bruising
- Damage caused by pests or low temperature
- Abnormal external moisture, excluding condensation following withdrawal from cold storage
- Any foreign smell and taste



Spectra of different mango varieties



Spectra of 'Keitt' mango during maturity

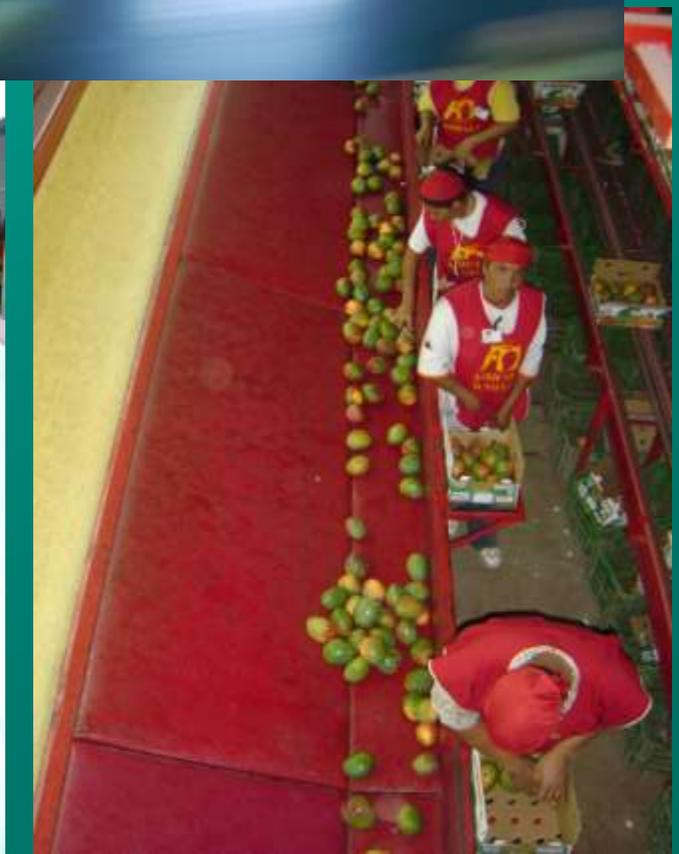


4. WEIGHT (4.1 Weight (Size))

Size is determined by the weight of the fruit. Mangoes are sized according to the following size groups:

Reference number	Weight (g)	Maximum permissible difference of weight (g)
26	165 - 175	10
24	181 - 190	10
22	196 - 210	10
20	221 - 240	15
18	251 - 270	15
16	281 - 300	15
14	316 - 350	25
12	366 - 420	25
10	436 - 480	30
9	506 - 535	30
8	561 - 610	30
7	641 - 700	45

The minimum weight of mangoes must not be less than 165 g and maximum weight must not be higher than 700 g.





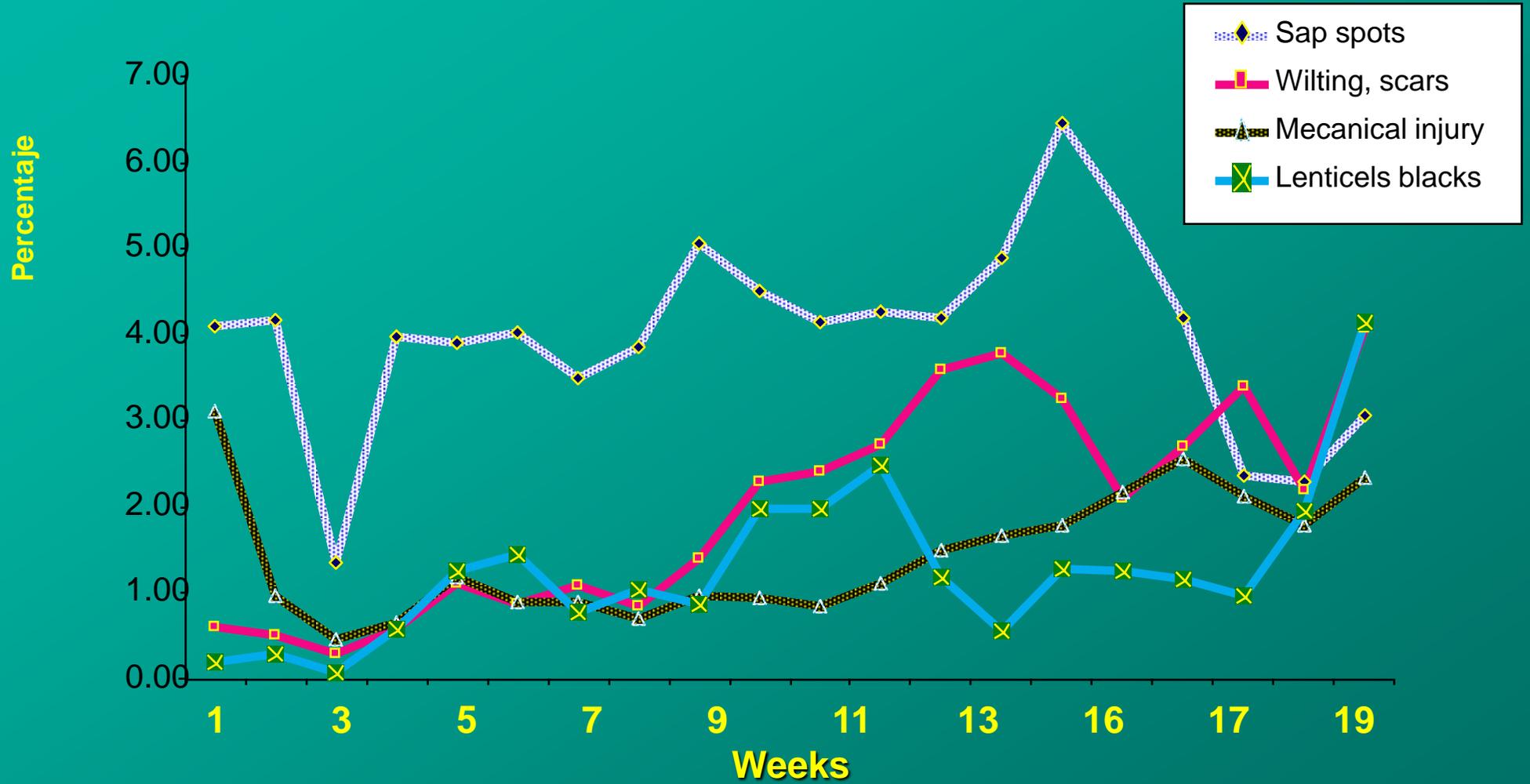








MAIN INJURIES















Production Systems

Inputs (Agrochemicals/Materials)

Process

Product Finished





National Archives and
Records Administration

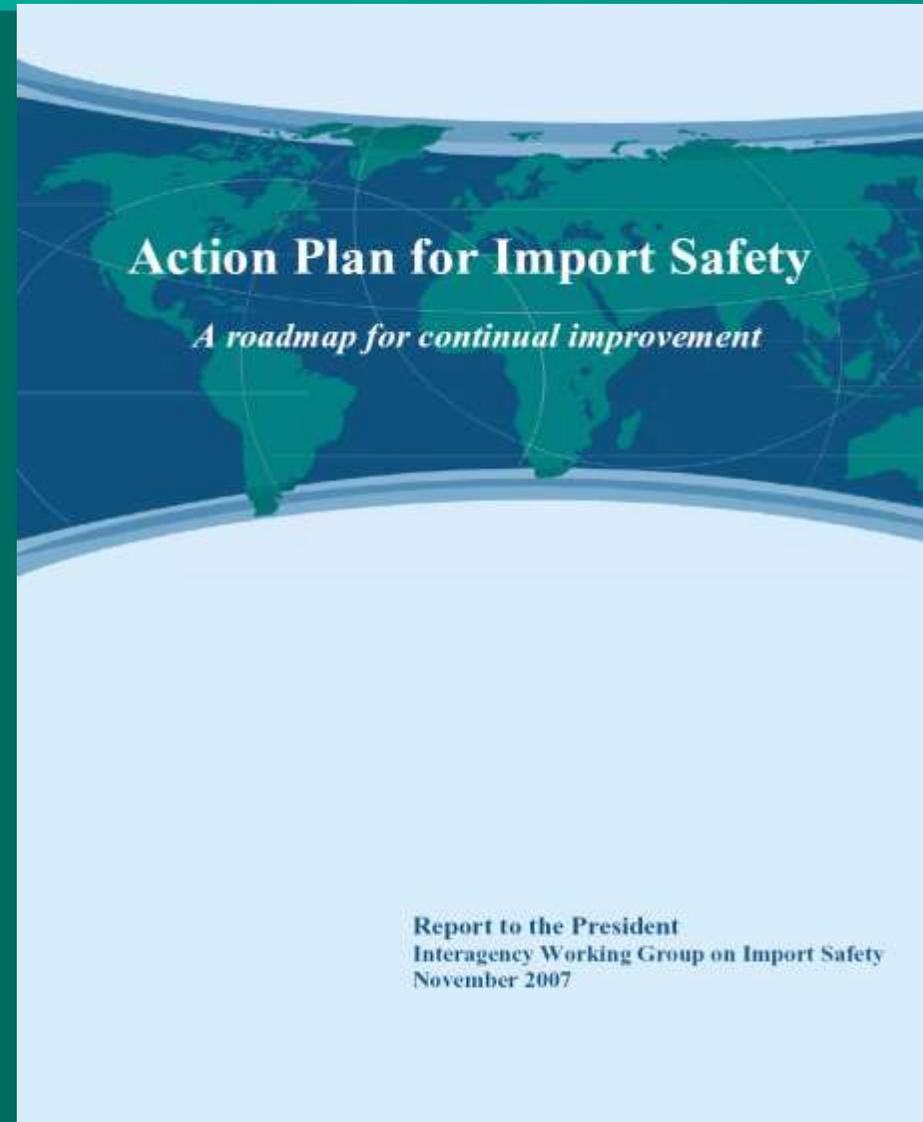
code of
federal regulations

IMPORTANCE

November 2007, President Bush announced the "Action Plan for Import Safety: A roadmap for continual improvement."

We will continually improve the import safety of imported products in a manner that expands global trade and protects the health and safety of every American.

President George W. Bush



IMPORTANCE

RECOMMENDATIONS

A. Prevention with Verification

1. Safety Standards
2. Certification
3. Good Importer Practices
4. Penalties
5. Foreign Collaboration and Capacity Building

IMPORTANCE

B. Intervention

6. Common Mission

7. Interoperability

8. Information Gathering

9. New Science

10. Intellectual Property Protection

C. Response

11. Recall

12. Federal-State Rapid Response

13. Technology

14. Track-and-Trace

“Americans enjoy unprecedented choice and convenience in filling the cupboard today, but we also face new challenges to ensuring that our food is safe. This Food Protection Plan will implement a strategy of prevention, intervention and response to build safety into every step of the food supply chain.”

Michael O. Leavitt

Secretary of Health and Human Services

U.S. Department of Health and Human Services



Department of Health and Human Services

U.S. Food and Drug Administration

Food Protection Plan

An integrated strategy for protecting the nation's food supply

NOVEMBER 2007

PREVENTION · INTERVENTION · RESPONSE

IMPORTANCE

PUBLIC LAW 111–353—JAN. 4, 2011 124 STAT. 3885 Public Law 111–353 111th Congress An Act

To amend the Federal Food, Drug, and Cosmetic Act with respect to the safety of the food supply.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; REFERENCES; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the “**FDA Food Safety Modernization Act**”.

(b) REFERENCES.—Except as otherwise specified, whenever in this Act an amendment is expressed in terms of an amendment to a section or other provision, the reference shall be considered to be made to a section or other provision of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.).

(c) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

Sec. 1. Short title; references; table of contents.

IMPORTANCE

TITLE I—IMPROVING CAPACITY TO PREVENT FOOD SAFETY PROBLEMS

- Sec. 101. Inspections of records.
- Sec. 102. Registration of food facilities.
- Sec. 103. Hazard analysis and risk-based preventive controls.
- Sec. 104. Performance standards.
- Sec. 105. Standards for produce safety.
- Sec. 106. Protection against intentional adulteration.
- Sec. 107. Authority to collect fees.
- Sec. 108. National agriculture and food defense strategy.
- Sec. 109. Food and Agriculture Coordinating Councils.
- Sec. 110. Building domestic capacity.
- Sec. 111. Sanitary transportation of food.
- Sec. 112. Food allergy and anaphylaxis management.
- Sec. 113. New dietary ingredients.
- Sec. 114. Requirement for guidance relating to post harvest processing of raw oysters.
- Sec. 115. Port shopping.
- Sec. 116. Alcohol-related facilities.

IMPORTANCE

TITLE II—IMPROVING CAPACITY TO DETECT AND RESPOND TO FOOD SAFETY PROBLEMS

Sec. 201. Targeting of inspection resources for domestic facilities, foreign facilities, and ports of entry; annual report.

Sec. 202. Laboratory accreditation for analyses of foods.

Sec. 203. Integrated consortium of laboratory networks.

Sec. 204. Enhancing tracking and tracing of food and recordkeeping.

Sec. 205. Surveillance.

Sec. 206. Mandatory recall authority.

Sec. 207. Administrative detention of food.

Sec. 208. Decontamination and disposal standards and plans.

Sec. 209. Improving the training of State, local, territorial, and tribal food safety officials.

Sec. 210. Enhancing food safety.

Sec. 211. Improving the reportable food registry.

IMPORTANCE

TITLE III—IMPROVING THE SAFETY OF IMPORTED FOOD

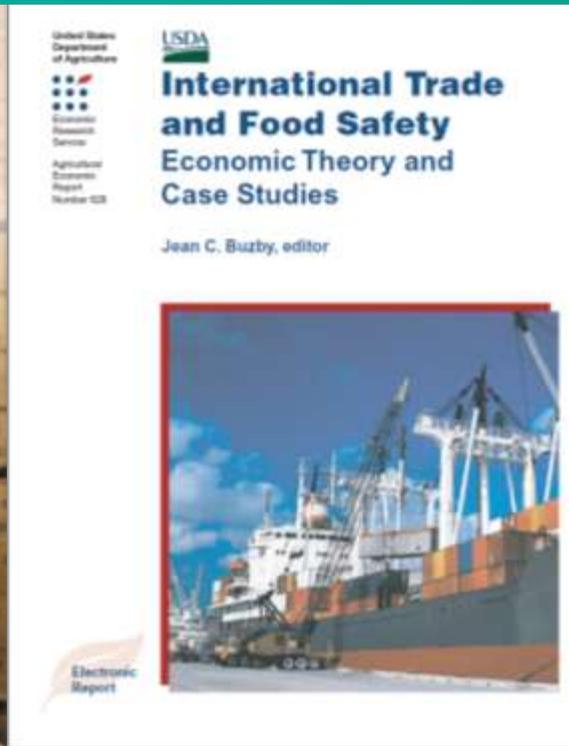
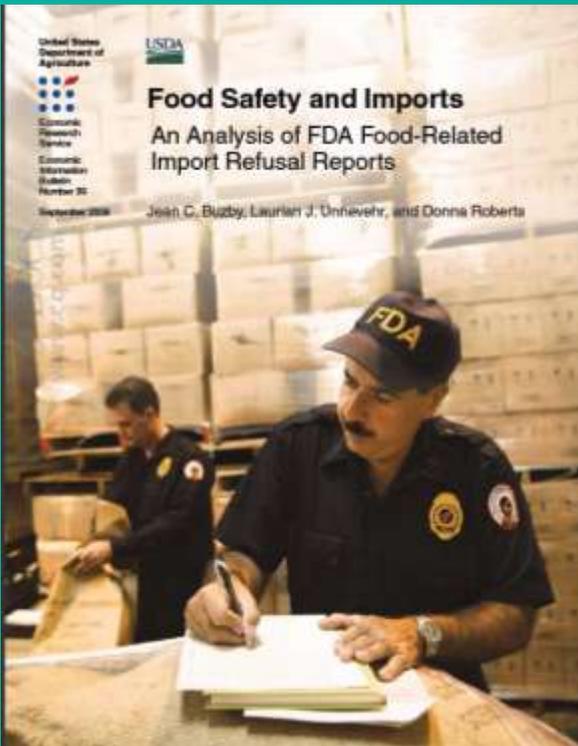
- Sec. 301. Foreign supplier verification program.
- Sec. 302. Voluntary qualified importer program.
- Sec. 303. Authority to require import certifications for food.
- Sec. 304. Prior notice of imported food shipments.
- Sec. 305. Building capacity of foreign governments with respect to food safety.
- Sec. 306. Inspection of foreign food facilities.
- Sec. 307. Accreditation of third-party auditors.
- Sec. 308. Foreign offices of the Food and Drug Administration.
- Sec. 309. Smuggled food.

TITLE IV—MISCELLANEOUS PROVISIONS

- Sec. 401. Funding for food safety.
- Sec. 402. Employee protections.
- Sec. 403. Jurisdiction; authorities.
- Sec. 404. Compliance with international agreements.
- Sec. 405. Determination of budgetary effects.

GREATER ATTENTION TO IMPORTED PRODUCTS

- Increased vigilance for imports
- Focus on products, fruits, vegetables, fish and seafood
- More actions at the border
- Customer shall be responsible for ensuring that the international supplier complies with food safety issues



THE U.S. FOOD INDUSTRY RESPONSE



January 22, 2009

The Honorable Edward M. Kennedy
The Honorable Michael B. Enzi
Senate Committee on Health, Education, Labor, and Pension
U.S. Senate
504-413 Dirksen Senate Office Building
Washington, DC 20510

Dear Chairman Kennedy and Ranking Member Enzi:

Our organizations urge you to quickly enact food safety reforms. Americans continue to enjoy the safest food supplies in the world but rising food imports and changing consumer preferences pose new challenges that require Congress and the Administration to modernize our food safety net.

In particular, we urge you to:

- **Require Food Safety Plans.** Congress should require every food company manufacturing food for the US market to conduct an evaluation of food safety risks that identifies potential sources of contamination, identify appropriate food safety controls, and document those controls in a food safety plan available for FDA review.
- **Require Foreign Supplier Safety Plans and Build Foreign Capacity.** Congress should build the capacity of foreign governments to regulate food safety and to require every food importer to police their foreign suppliers. In particular, Congress should require that food importers document the food safety measures and controls being implemented by their foreign suppliers, and to require food importers to make a foreign supplier food safety plan available for FDA review.
- **Enforce the Safety of Fruits and Vegetables.** Congress should give FDA the power to establish safety standards for certain fruits and vegetables -- when risk and science demonstrate that standards are needed. FDA should be permitted to work with states and others to tailor standards to meet local growing conditions and to ensure that standards are being met.
- **Adopt a Risk-Based Approach to Inspections.** Congress should increase food safety inspection and should focus domestic and foreign inspections on facilities that pose the greatest risk of contamination that could result in foodborne illness or injury.
- **Authorize Mandatory Recalls.** Congress should give FDA the authority to order a mandatory recall when a company has refused to conduct a voluntary recall and there is a significant risk to public health. Specifically, when the responsible party refuses to voluntarily recall a product for

- Require food safety plans.
- Demand from foreign suppliers of food safety plans and help countries in development.
- Assure the safety of fruits and vegetables (establish regulations of safety for certain products).
- Adopt a strategy of inspections based on risk.
- Authorize mandatory withdrawals from food.

- Food Marketing Institute
- Grocery Manufacturers Association
- International Bottled Water Association
- International Dairy Foods Association
- National Fisheries Institute
- National Restaurant Association
- Retail Industry Leaders Association
- Snack Food Association
- United Fresh

¿WHO WRITES OVER THE SAME?



- Disease outbreaks associated with imported vegetables affects not only consumers and producers involved, but other suppliers of the same product, including producers in the U.S.
- Standards and safety costs tend to increase for all the producers of the product involved.
- The impact on trade of outbreaks of diseases, depends on if the external producers manage to quickly correct the problem of contamination and convince buyers that products do not already possess risks.
- Efforts to address issues of food safety involves producers, producer organizations, distributors and retailers and the Government.

**2004. Calvin, L.
Response to U.S.
Foodborne
Illness Outbreaks
Associated
With Imported
Produce. USDA –
ERS.**



WHAT YOU DO?

Comply with the obligation



HOW DO IT?

Implement a system that manage compliance



Mandatory failure: action of the Authority (consumer protection) and consumer



MANAGEMENT SYSTEMS



TO DO BUSINESS



**Implementation of economically-viable systems
(cost of quality)**



Cost of prevention of failure → >Revenue\$ \$



$$\text{REVENUE} = \text{SALES PRICES} - \text{PRODUCTION COST}$$



COMPETITION
(Differential Prices)



RISK (Analysis)
Food safety
Quality
Yield



IMPROVEMENT
(Management Systems)



Quality Assurance Systems

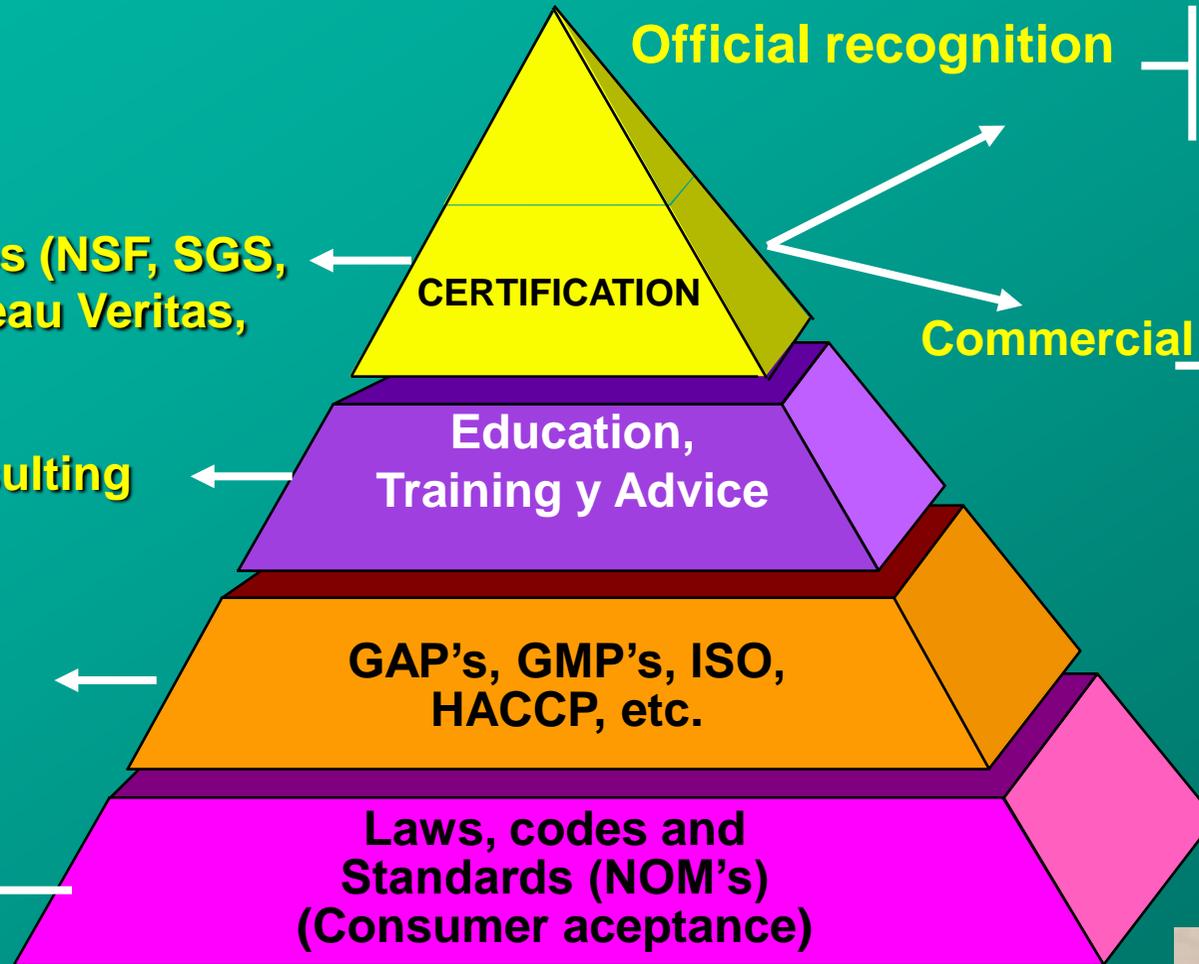


Certification Bodies (NSF, SGS, SCS, Intertek, Bureau Veritas, Siliker, etc.)

Consulting

Management Systems or Tools

Governments
Producers
Consumers



Official recognition

Government Ministries

Commercial



GLOBALG.A.P.

Calidad Suprema



Recognition Official

Standards, Laws and Regulations of obligatory in nature that are audited or verified by an authority or authorized by the corresponding unit.



Commercial Certification



Complementary management systems on a voluntary basis who are audited or verified by an accredited certification body (IEC-17065) demonstrating competence. Alternative mechanisms?

A certification that requires compliance with official rules of the country of origin and the country of destination

code of federal regulations



REGULATIONS

- FACILITIES
- EQUIPMENT AND TOOLS
- INPUTS (SUPPLIES)
- PERSONNEL SAFETY AND HYGIENE PRACTICES
- MANDATORY PROCEDURES
 - Cleaning and Sanitation
 - Maintenance
 - Pest Control



Production System

Inputs (Supplies)



Water
Chemical (Pesticides-Fertilizers)
Packing materials
Disinfectants, among others



Process



Tools for harvest
Employees
Facilities (packinghouse, clasification sheds)
Hot water tratment equipment, among others



Finished Product

FOOD SAFETY
QUALITY





What is Quality?

- ❖ Fruit Appearance
- ❖ Fruit Maturity
- ❖ Fruit Safety



Quality is all!!



Market Response



Wal-Mart Becomes First Nationwide U.S. Grocer To Adopt Global Food Safety Initiative Standards

Nation's largest grocery chain requires suppliers of private label and select food products to comply with standards above FDA or USDA requirements by end of 2008

BENTONVILLE, Ark., Feb. 4, 2008 – Wal-Mart Stores, Inc. has become the first nationwide U.S. grocery chain to require suppliers of its private label and other food products such as produce, meat, fish, poultry and ready-to-eat foods to have their factories certified against one of the internationally recognized Global Food Safety Initiative (GFSI) standards.

A group of major international retailers committed to strengthening consumer confidence in the food they purchase, the GFSI now lists Wal-Mart among the companies who have agreed to improve food safety through a higher and consistent auditing standard.



Doing Our Part 2008 Sustainability Report

- Require all suppliers to submit a food safety audit based on the internationally recognized Global Food Safety Initiative (GFSI) standards beginning in 2009



Due to the serious food safety problems and recalls that have occurred over the past couple years, we would like to encourage you and your company to learn more about becoming certified to a GFSI recognized food safety standard.

The SQF (Safe Quality Food) Program is a third-party GFSI recognized food safety standard.



State Partners September 5, 2008

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News Release

National Restaurant Association Announces Key Partnership with the Global Food Safety Initiative

Food service and food retail join forces on food safety

May 01, 2008
Contact: [Mike Donohue](#) (202) 331-5902, [Maureen Ryan](#) 202-331-5939

(Washington, DC) – The National Restaurant Association today announced a major new strategic alliance to share best food safety practices and the use of common food safety standards worldwide. The National Restaurant Association and the Global Food Safety Initiative (GFSI), managed by CIES - The Food Business Forum, will now work closely together to strengthen food safety systems and increase consumer confidence.



Food Safety & Quality Management Certification

To ensure that our suppliers meet or exceed all federally mandated food safety standards we are requiring that they are certified by an accredited, third-party certification company. These objective companies are highly qualified to evaluate growers, manufacturers or processing facilities. One such program is Safe Quality Food (SQF), which is managed by FMI and recognized by the Global Food Safety Initiative (GFSI). GFSI was established by international food retailers in 2000 to pursue continuous improvement in our food safety systems.



FDA News

FOR IMMEDIATE RELEASE
January 15, 2009

Media Inquiries:
Christopher Kelly, 301-796-4676
Consumer Inquiries:
888-INFO-FDA

FDA Issues Guidances for Industry to Improve the Safety of Food, Feed and Drugs

The U.S. Food and Drug Administration today issued three guidances designed to help ensure the safety of FDA-regulated products in the supply chain. The documents issued today include the following:

- Final Guidance for Industry on Voluntary Third-Party Certification Programs for Foods and Feeds;
- Draft Guidance for Industry on Submission of Laboratory Packages by Accredited Laboratories; and
- Draft Guidance for Industry on Standards for Securing the Drug Supply Chain – Standardized Numerical Identification for Prescription Drug Packages.

"The guidance documents reflect the FDA's continued vigorous efforts to minimize the chances of unsafe products reaching American consumers," said Jeffrey Shuren, M.D., J.D., associate commissioner for policy and planning.

The Final Guidance for Industry on Voluntary Third-Party Certification Programs for Foods and Feeds discusses the attributes of a third-party certification program that would merit the FDA's confidence in the quality of the program's

Guidance for Industry

Voluntary Third-Party Certification Programs for Foods and Feeds

Additional copies of this guidance are available on the Internet at <http://www.fda.gov/oc/guidance/thirdpartycert.html> or <http://www.regulations.gov> or from the Office of Policy and Planning, Food and Drug Administration, U.S. Department of Health and Human Services 10903 New Hampshire Avenue, White Oak Building 1, Silver Spring, MD 20993, (301) 796-4840.

For questions on the content of this guidance, contact the Office of Policy and Planning at to (301) 796-4840.

United States Department of Health and Human Services
Food and Drug Administration
Office of Policy
January 2009

FDA Recognition

- new guidelines for recognition of certifications
- Independent third party certification programs of integral management systems
- It is not considered private programs and requires absence of conflict of interest

NOT participation of programs whose certification bodies owned, operated or controlled by producer or buyer

Not participation when auditors are producers or buyers consultants to certify and they are controlled by associations of producers or producers to certify

INTEGRITY OF MANAGEMENT SYSTEMS

- **TRADE MARK (Standard, System, Process)**

- Consulting to implement it



- **ACCREDITATION ENTITY (IAF/IEC-061)**



- **CERTIFICATION BODY (IEC-065)**

- Audit

- Continuous improvement

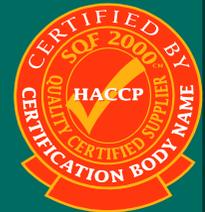
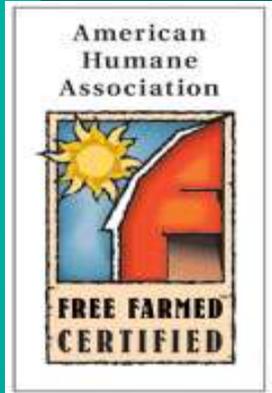


Global Certifications



• Characteristics of the ideal certification:

- That it is and where it comes?
- How is it set?
- Who accepts it?
- That authority is?
- How is compliance certified?
- How is it given?
- How strengthens its transparency



Global Certifications

Transparency and recognition of the certifications are given by:

- Adherence to international systems
- Review by external agencies and agents
- Constitution of technical and advisory committees
- Documentation and publication of all its processes and procedures
- Benchmarking against other standards





The Consumer Goods Forum (CGF)

- The Consumer Goods Forum (CGF) is a global, parity-based industry network, driven by its members.
- It brings together the CEOs and senior management of over 400 retailers, manufacturers, service providers and other stakeholders across 70 countries and reflects the diversity of the industry in geography, size, product category and format.
- Forum member companies have combined sales of EUR 2.5 trillion.
- Their retailer and manufacturer members directly employ nearly 10 million people with a further 90 million related jobs estimated along the value chain.

Programs of the CGF

Five strategic priorities –

- Emerging Trends
- Sustainability
- Safety & Health
 - Global Food Safety Initiative
 - GFSI Working Groups
 - Global Markets Manufacturing
 - Global Markets Primary
 - Global Markets Communication
 - Auditor Competence
 - Storage And Distribution
 - Guidance Document
 - Global Regulatory Affairs
- Operational Excellence and,
- Knowledge Sharing & People Development



Global Food Safety Initiative

- The Global Food Safety Initiative is no longer just a benchmarking organisation.
- While this remains one of its key activities, its collaborative approach to food safety brings together international food safety experts from the entire food supply chain at Technical Working Group and Stakeholder meetings, conferences and regional events to share knowledge and promote a harmonized approach to managing food safety across the industry.



GFSI Recognised Schemes

On 5th January 2011, GFSI released the Sixth Edition of its Guidance Document

Scopes covered by schemes in benchmarking process

- Food safety management systems (ISO)
- Best practices for agriculture, manufacturing and distribution
- HACCP
- In addition, the document sets the requirements to grant audits and certifications based on these standards.

GFSI Recognised Schemes: Benchmarking Results

GFSI Technical Working Groups



COMMERCIAL RECOGNITION

Benchmarking – What does this mean?

« Once certified, accepted everywhere »



THE BRITISH RETAIL CONSORTIUM



GLOBAL STANDARD FOR FOOD SAFETY ISSUE 6

- This Standard covers food safety and management of product quality in food packing and processing operations.
- The BRC Food Standard was one of the original GFSI Benchmarked schemes and is used around the world with certificates in over 100 countries and has in excess of 15,000 certificated sites.
- The Standard is owned by the BRC and written and managed with the input of an international multi-stakeholder group made up of food manufacturers, retailers, food service and certification body representatives



BRC/IOP GLOBAL STANDARD FOR PACKAGING AND PACKAGING MATERIALS ISSUE 4

- Standard for the manufacture and conversion of Packaging materials for both food and non food use; with approx. 2,000 certificated sites around the world.
- The standard covers the hygienic production of packaging materials and the management of quality and functional properties of the packaging to provide assurance to customers.
- The Standard is operated by the BRC in conjunction with the Packaging Society and an advisory committee of stakeholders.



Scopes of Recognition

- D Pre Processing Handling of Plant Products
- EI Processing of Animal Perishable Products
- EII Processing of Plant Perishable Products
- EIII Processing of Animal and Plant Perishable Products (Mixed Products)
- EIV Processing of Ambient Stable Products
- L Production of (Bio) Chemicals
- M Production of Food Packaging

THE INTERNATIONAL FEATURED STANDARD (IFS)



- IFS FOOD VERSION 6

- IFS Food is a standard for auditing food safety and quality of processes and products of food manufacturers. The standard has been in existence since 2003 and is currently operating its sixth version. Over 11,000 certificates in 90 different countries were issued in 2011.
- IFS Management has 5 regional offices worldwide, coordinates technical working groups in different languages (German, French, North American, Spanish and Italian) with different stakeholders (retailers, industry, certification bodies and food services) and relies on a continuous improvement process of IFS standards, database and Integrity Program among others.



Scopes of Recognition

EI Processing of Animal Perishable Products

EII Processing of Plant Perishable Products

EIII Processing of Animal and Plant Perishable Products (Mixed Products)

EIV Processing of Ambient Stable Products

Scope Extension

C Animal Conversion

D Pre-process Handling of Plant Products

L Production of (Bio) Chemicals



GLOBALG.A.P. GLOBAL G.A.P.

GLOBALG.A.P. Integrated Farm Assurance Scheme and Produce Safety Standard

G.A.P. stands for Good Agricultural Practice – and GLOBALG.A.P. is the worldwide standard that assures it. GLOBALG.A.P. is an affiliate organisation of a not-for-profit trade association with a crucial objective: safe, sustainable agricultural production worldwide.

It sets voluntary standards for the certification of agricultural products around the globe.

The GLOBALG.A.P. flagship standard is the Integrated Farm Assurance (IFA) standard which covers crops, livestock and aquaculture and emphasizes a progressive, holistic approach to farm certification.

The Produce Safety Standard (PSS) only focuses on the Food Safety and Traceability elements of the IFA standard. This standard is a subset of the IFA standard that was developed for the North American market where the demand for compliance with the Food Safety elements of the IFA standard has priority above the non-food safety components.

Scopes of Recognition

BI Farming of Plants

D Pre Processing Handling of Plant Products





FSSC 22000

Food Safety System Certification 22000 (FSSC 22000) is a robust, ISO-based, internationally accepted certification scheme for assessment and certification of food safety management systems in the whole supply chain. FSSC 22000 uses the existing standards ISO 22000, ISO 22003 and technical specifications for sector PRPs.

The certification is accredited under ISO guide 17021 and recognized by GFSI. The non-profit Foundation for Food Safety Certification retains the ownership, copyright and the licence agreements for certification bodies.

Scopes of Recognition

- C Animal Conversion
- D Pre-process Handling of Plant Products
- EI Processing of Perishable Animal Products
- EII Processing of Perishable Plant Products
- EIII Processing of Perishable Animal and Plant Products (Mixed Products)
- EIV Processing of Ambient Stable Products
- L Production of (Bio) Chemicals
- M Production of Food Packaging

PUBLICLY AVAILABLE SPECIFICATION

PAS 220:2008

Prerequisite programmes on food safety for food manufacturing



CIAA
COUNCIL FOR INTERNATIONAL ASSOCIATIONS OF ANIMAL PRODUCTION

DAKQMI
DANSK KØD- OG MESEKSEKTØREN

IRAF
IRISH RED CATTLE ASSOCIATION

NISUS
NEDERLANDSE INDRUKSINDUSTRIË

U
UNION OF UDAHERN

BSI
British Standards

ISO 22000:2005
INTERNATIONAL STANDARD FOR FOOD SAFETY MANAGEMENT SYSTEMS

INTERNATIONAL STANDARD

ISO 22000

Préface
adoption

Food safety management systems — Requirements for any organization in the food chain

Systèmes de management de la sécurité des denrées alimentaires — Exigences pour tout organisme appartenant à la chaîne alimentaire

Reference number
ISO 22000:2005

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
ISO
1000

© IEC 2005



SQF CODE

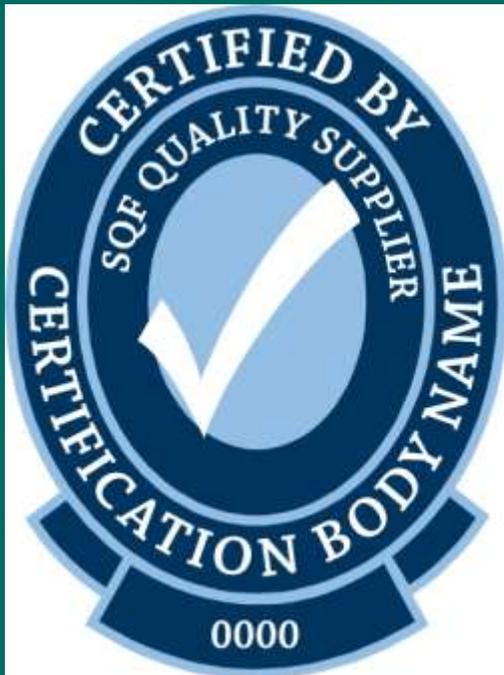


- **7TH EDITION LEVEL 2**

- The SQF Code has been redesigned for use by all sectors of the food industry from primary production to transport and distribution. Edition 7 applies to all industry sectors and replaces the SQF 2000 Code edition 6 and the SQF 1000 Code edition 5.
- The SQF Code is a process and product certification standard. It is a Hazard Analysis Critical Control Points (HACCP)-based food safety and quality management system that utilizes the National Advisory Committee on Microbiological Criteria for Food (NACMCF) and the CODEX Alimentarius Commission HACCP principles and guidelines.
-
- The SQF Code is intended to support industry or company branded products and offers benefits to suppliers and their customers. Products produced and manufactured under the SQF Code certification retain a high degree of acceptance in global markets.



The SQF Code is intended to support industry or company branded products and offers benefits to suppliers and their customers. With the consistent application of the SQF program by certification bodies that have been accredited to ISO/IEC guide 65: 1996 products produced and manufactured under the SQF Code certification retain a high degree of acceptance in global markets.



SQF CODE

Scopes of Recognition

- AI: Farming of Animal Products
- BI: Farming of Plant Products
- C: Pre-Processing of Animal Products
- D: Pre-Processing of Plant Products
- EI: Processing of Animal Perishable Products
- EII: Processing of Plant Perishable Products
- EIII: Processing of Animal and Plant Perishable Products
- EIV: Processing of Ambient Stable Products
- L: Production of Biochemicals
- M: Production of Food Packaging



SQF Code

A HACCP-Based Supplier Assurance
Code for the Food Industry

Edition 7.1
JULY 2013

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www.sqf.com

SQF Institute is a division of the Food Marketing Institute (FMI).



CanadaGAP (Canadian Horticultural Council On-Farm Food Safety Program)

CanadaGAP™ is a food safety certification program for companies that produce, pack and store fresh fruits and vegetables.

Launched in 2008 by the Canadian Horticultural Council, the scheme is owned and operated by not-for-profit Canadian corporation CanAgPlus as of November 2012.

The standard comprises two manuals, one specific to Greenhouse, the second for other Fruit and Vegetable operations, developed in consultation with the horticultural sector and reviewed annually for technical soundness by Canadian government officials.

The manuals are based on a rigorous hazard analysis applying the seven principles of the internationally-recognized Hazard Analysis and Critical Control Point (HACCP) approach.

The program now has over 2,000 participating producers across Canada.

Scopes of Recognition

BI Farming of Plants

D Pre-process Handling of Plant Products



Schemes in Benchmarking Process



THE DUTCH HACCP CODE

- SCV-FSM, fundación para la certificación de la Inocuidad de Alimentos, creada en el 2004 por la Dutch National Board of Experts HACCP (NBE) y organismos de certificación.
- La norma existe desde 1996.
- SCV es el cuerpo administrativo del NBE cuyo objetivo es el desarrollo y mantenimiento del sistema de Inocuidad de alimentos basado en HACCP y los requerimientos del sistemas de certificación holandés, conocido como Dutch HACCP
- SCV es el propietario de la norma y trabaja con organismos de certificación acreditados y actúa como vocero de Dutch HACCP.
- HACCP bajo el enfoque de SCV está alineado con el Codex Alimentarius.
- Se ha convertido en un estándar de corte mundial.
- Busca alinearse con ISO 22000 y participan en el comité de trabajo de ISO 22000



PrimusGFS is a private scheme that establishes requirements for the certification of products of the Agricultural sector in a voluntary manner at a world-wide level.

The Scope of PrimusGFS is focused on Food Safety of those products of the Agricultural sector designated to human consumption in their fresh or minimum processed way. With that intention is how PrimusGFS establishes series of requirements for managing of the production, handling, processing and storing operations, which should be considered to ensure consumers' safety.

The Standard has defined 3 fundamental areas that a company of the Agricultural sector must consider at the moment of producing or manufacturing their products:

- I. Food Safety Management System
- II. Good Agricultural and/or Manufacturing Practices (one or both)
- III. HACCP System.



SYNERGY 22000



Empresa Privada con sede en Suiza que ofrece los servicios para la gestión de la Inocuidad en Alimentos.

Synergy 22000 es una norma basada en los siguientes estándares:

Synergy PRP 22000. Sistema de Gestión de la Inocuidad — Requerimientos de los Programas de Pre-requisitos (PRPs) para cualquier organización en la cadena de alimentos.

Synergy 22000. Esquema de Certificación para organismos que proporcionan la auditoría y certificación del Sistema de Gestión de la Inocuidad Synergy PRP 22000



HACCP
Certified
by primus labs

AIR SHIPPED MANGO

PRODUCE OF BRAZIL

Red Mango

Class 1
Net weight 2kg Approx.



Address:
Country:
Street Name:
City:
Post Code:
Phone Number:
E-mail:
Fax:
Part of UK Limited for
the UK Market

