

Habilitation of date factories to international food quality and safety standards**Mostafa Taha Mohammady Assous****Prof. and Head of Fruit Products Manufacturing Department,
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Egypt produces more than 1.6 million tons of dates. It is considered one of the first countries in the production of dates. However, the export of Egyptian dates does not exceed 5% of the total production. This is due to several reasons, including the low quality of some varieties, the perishable of some other varieties. Also, the low quality of dates due to not application of good agricultural practices completely in the small farm during harvest and after harvest. The application of quality and safety standards for dates in date factories, such as prerequisite programs, good hygiene practices for workers inside the food establishments, and the Hazard Analysis and Critical Control Points (HACCP) system are among the most important factors for the success of the date marketing. This article will present the basics of the quality and safety of dates in factories in terms of infrastructure, factory workers and some technical aspects of date products from the beginning of receipt to the marketing of these products.

Key words: date fruit, quality, safety, industries.**Objectives of applying food safety in date factories**

- 1- The qualifying date factories and their products for food safety requirements during the manufacturing and packaging chain is to reach the international level in the food safety management system and apply the legislative and regulatory requirements
- 2- Increasing competitiveness in the market inside and outside the country.
- 3- Reduces the possibility of major problems such as job losses and customer complaints.
- 4- Reducing risks and preventing the occurrence of any violation of the safety and health requirements of consumers.
- 5- It leads to the creation of team spirit and collective participation in it in order to achieve the objectives of the facility to produce safety and high quality products

Prerequisite Program: PRP

These are programs and practices developed to treat the role that the production environment plays in the production of safe food products.

Operational Prerequisite Program: OPRP

These are identified by a hazard analysis as essential to controlling the potential for contamination or the spread of food safety hazards in the product or in the environment surrounding the manufacturing process.

Basic requirements programs

- 1- Good Manufacturing Practices
- 2- Standard Procedures for Health Affairs
- 3- Product Identification - Product Return
- 4- Preventive maintenance - pest control - training

Items of Good Manufacturing Practices

- 1- personal practices
- 2- Requirements for the building and facilities

- 3- Requirements for designing devices and tools
- 4- Instructions for health affairs and production operations
- 5- Requirements for stores

Items of Good Manufacturing Practices

1- Personal Practices

- Personnel handling food must be of a high degree of hygiene
- Food handlers should refrain from personal behavior that could lead to food contamination, such as: smoking, spitting, chewing or eating, sneezing or coughing near food.
- Low level of personal hygiene can cause contamination of the product, resulting in spoilage of the product or the occurrence of a sick condition for consumers.

2- hand washing with the right procedure

- Personnel handling food should be of a high degree of hygiene
- Individuals should wash their hands frequently when personal hygiene is prospect to affect food safety
- Wash hands before entering in production area

How to wash hands

1. Put an amount of water on the palms of the hand
2. Put the soap on the palm of the hand by one click on the soap box
3. Rub the skin of the hand vigorously, including the palm, between and behind the fingers and behind the thumb
4. Hands are dried with hot air or paper towels
5. Time of hand washing is 1 minute

3- Clothes, jewelry and makeup

- 1- Personnel handling food wear appropriate clothing, head coverings and special footwear
- 2- Wounds should be covered with impermeable dressings
- 3- Clothes must be properly stored and protected from contamination
- 4- Personal belongings such as jewelry, watches and pins should not be wear during working in the factories

Visitor Policy(Apply the character to visitors like factory workers)

1. cover hair
2. Wear special clothes when entering the food establishment
3. Not wearing jewelry and leaving the mobile outside the production unit
4. Cover or take off shoes

Staff training and awareness

1. Training workers to know the symptoms of disease states that require reporting to those responsible, such as disease states that require workers to be excluded from food circulation
2. Ensure the activation of the exclusion procedure and the return of injured workers
3. The employees of the facility are trained, each according to their responsibilities, especially the HACCP team

Requirements for the building and facilities

- The location of the factory must be away from sources of pollution, taking into account adequate preventive procedures
- Erecting of an external fence around the factory and the external areas are paved and sewage closure provisions inside the factory
- The interior design of the facility prevents accidental pollution (the independence of the production halls from services, stores and receipt) to ensure product safety (with a separating door from air, plastic or other curtains)
- Provide adequate natural or mechanical ventilation to control temperature and humidity to prevent food contamination
- Provide and protect sources of adequate natural and artificial lighting
- The presence of toilets that do not open directly to the food circulation places - Availability of foot-opening garbage bins inside the toilets
- Drainage ducts in food handling areas are easy to clean and have tight-fitting lids
- Availability of hand washing facilities at all entrances to the manufacturing sites
- Hand washing facilities control the temperature of water and liquid soap and the presence of an appropriate method for drying hands

Requirements for devices and equipment

- Work surfaces, equipment and tools in direct contact with food should be made of stainless materials, easy to clean and disinfect, and smooth. - Ensure that the maintenance procedure is activated
- Having suitable tools for washing equipment and tools - storing tools used for washing in specific and appropriate places after cleaning
- Only food grade oils and greases should be used

Special requirements for production and follow-up operations

- Follow up on manufacturing processes and use equipment and tools in a proper manner during manufacturing according to instructions - Measure and record temperatures and flow path of production steps appropriate to ensure product safety
- Activate the maintenance plan
- Availability of preventive measures and appropriate means to control physical, chemical and microbiological hazards in accordance with the HACCP plan.

Store requirements

- ❖ Appropriate means must be monitored to control record and monitor critical temperatures in all warehouse areas.
- ❖ All inventories should be rotated or traded on a first-in-first-out basis to ensure the quality of both the raw materials used and the final products.
- ❖ Production dates and expiration dates must be monitored on all stocks, such as raw materials, chemicals or final products
- ❖ All raw materials and finished products in the warehouse must be arranged at a distance of 50 cm from the wall. This is due to the need to provide a distance for inspections, cleaning and rodent resistance.

Other required programs within the factory

- Document preservation - pest control - waste disposal - product recall

- Defending food from bioterrorism - Indoor food safety
- Training and audit plans - calibration plans for devices and equipment, examination of samples, water and personnel
- Nonconformities and Corrective Actions - Building and Workspace Design
- Utilities , air, water and energy - waste disposal - equipment suitability- cleaning and maintenance
- Material Management humanity- measures to prevent cross-contamination- cleaning and sterilization construction and building planning

HACCP

It is the science that takes care of all necessary measures to ensure quality food safety at all stages of its circulation, focusing on

1. Good Manufacture Practice
2. Hazard Analysis
3. Determine the critical step from which the danger may arise. Critical Control Points
4. Control it as previously mentioned from the raw material (farm or supplier) to the final product

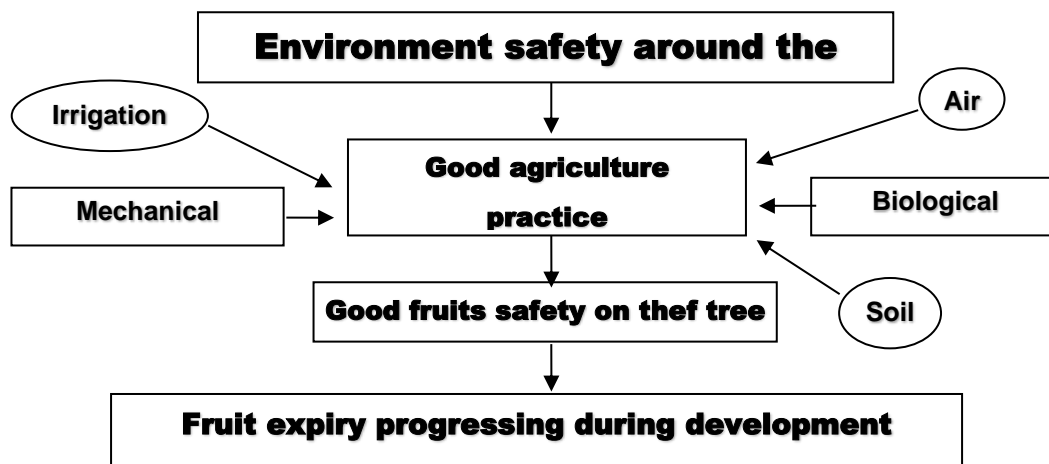
HACCP System Plan

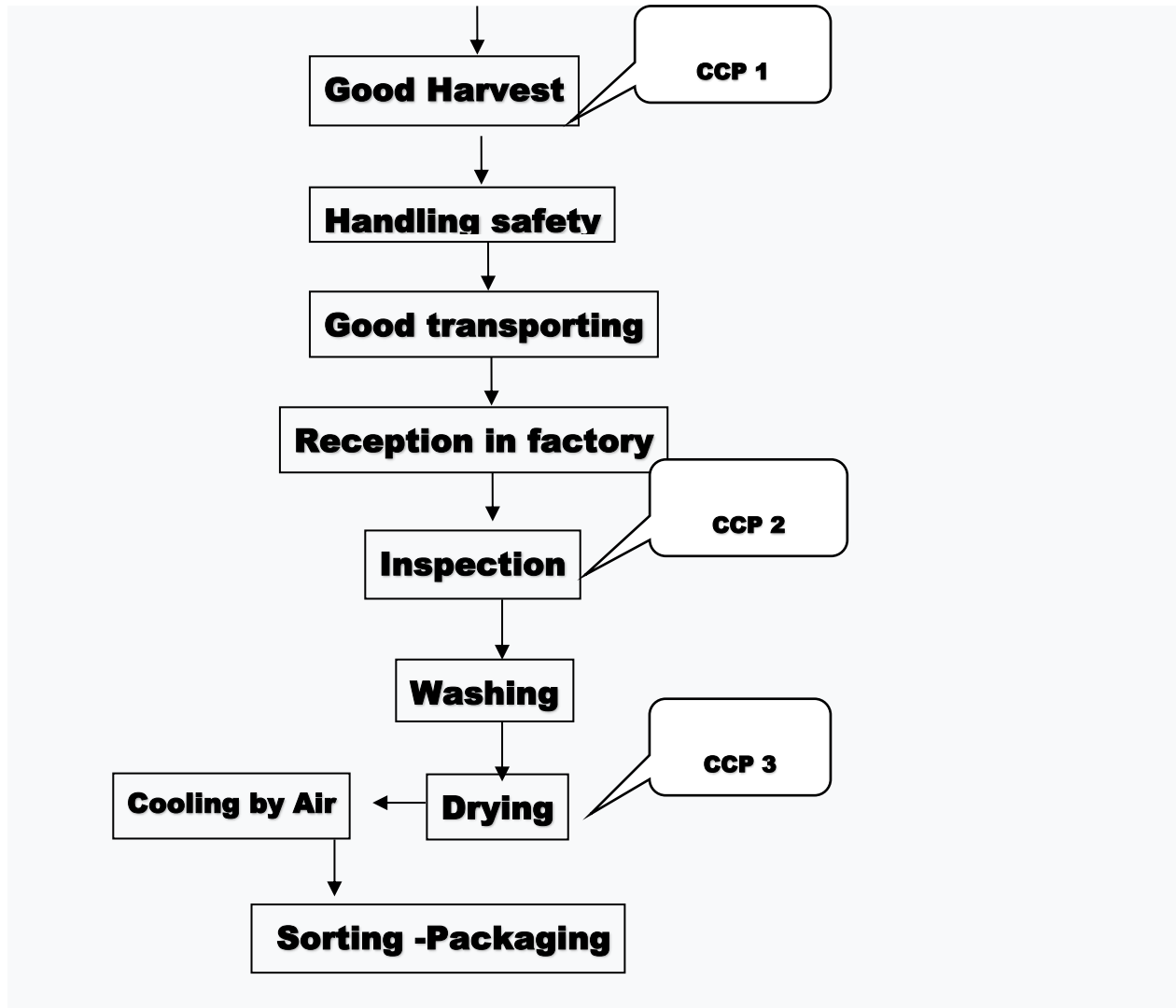
A set of steps or procedures that control the conditions of the production and manufacturing processes that take place in the facility in terms of providing the necessary requirements and conditions that lead to the production of safe food.

These programs include:-

1. Assemble and train the HACCP team
2. Describe the products and processes
3. Identify intended users
4. Construct a flow diagram
5. Validate the flow diagram
6. Conduct a hazard analysis (Principle 1)
7. Determine the critical control points (CCPs) (Principle 2)
8. Establish critical limits for each CCP (Principle 3)
9. Monitoring of control measures at each CCP (Principle 4)
10. Establish corrective actions (Principle 5)
11. Establish verification procedures (Principle 6)
12. Establish documentation and record-keeping (Principle 7)

Suggestion, manufacturing date fruits line according to HACCP





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