

**Workflow: Packhouse Management**

# Toolkit 4.7

## Storage

### target audience

Packhouse managers, supervisors, and team leaders.

### what it is

Although storage has been addressed at the various stages of the packhouse process, this toolkit summarises the key success factors related to storage.

This toolkit deals with two topics:

- The various stages where storage of fruit is required:
  - Receiving.
  - De-greening.
  - Waiting pallets.
  - Land transport.
  - Containers.
  - Warehousing and cooling rooms at port.
  - Shipping.
- The “storage” of the packhouse between the packing seasons if it going to be completely or largely dormant.

### why it is important

Your primary mission is to deliver fruit of the highest quality to the end consumer. As perishable, fresh produce any unnecessary or avoidable delay in the processing and transporting of fruit is damaging. However, storage, whether at the packhouse during the packing process or during transit, is unavoidable and needs to be managed as well as possible.

Additionally, packhouses are seasonal operations and, although maintenance or improvement projects will take place between packing seasons, the safe management of the plant, machinery, and technology during the dormant period is very important to minimise the cost of restarting up.

## success factors

A. The key success factors related to storage of fruit are summarised briefly as follows.

➤ **Receiving**

- The time from picking to packhouse – collaborate with the farm to optimise this period.
- Waiting time before drenching – Ideally, out of the sun if this is more than a couple of hours.
- Storage over weekends prior to processing – Ideally after drenching to remove field heat, and preferably in an enclosed area.

➤ **Degreening**

- After delivery inspection, pre-sorting and drenching.
- Compliance to Ethelyn, carbon dioxide, and humidity control.
- Disciplined tracking of batches to ensure timing and control of batches.
- Compliance to SOPs for cleaning and sanitising of de-greening rooms.

➤ **Waiting pallets**

- Efficient final PPECB inspection.
- Compliance to 5S – well organised, batched for efficient loading.
- Under roof.
- Excellent communication with logistics to ensure lowest dwell time.

➤ **Land transport**

- Loading in accordance with defined standards.
- Efficient loading in accordance with routing to facilitate last-in-first-out drop off.
- Efficient routing and coordination with ports to ensure minimal waiting times and bottlenecks.

➤ **Containers**

- Containers secured well in time to ensure availability.
- Containers <5years old and in good condition.
- Loading of containers according to best practice (see [Toolkit 5.7 – Cold Chain and Shipping at Required Temperatures](#)).

➤ **Shipping**

- Tracking and temperature control in place.

B. The key success factors related to preparing the packhouse for the dormant period are summarised briefly as follows.

➤ **Understand the risks**

- Galvanic/Bio corrosion.
- Mould, mildew etc.
- Moisture.

- Poor maintenance procedures.
- Poor 5S.
- Loss of data/knowledge.

➤ **Preventative actions**

- Deep clean at the end of the season.
- Remove of processing materials.
- Follow expert and manufacturers advice on equipment preservation.
- Remove as much moisture as possible, especially from tanks, pipes and pressure vessels.
- Remove all chemical substances.
- Cover machinery and packing lines with plastic sheeting to control dust and bird droppings.
- Cover certain machine surfaces with approved protective spays (thin layer) where required.
- Separate dissimilar metals.
- For pumps, compressors and machinery, close all vents and use the lubricants recommended by the manufacturer.

➤ **Instruments and controls**

- Maintain the driest, most dusty free environment possible
- Use desiccant packages, dehumidifiers etc.

➤ **Data and Information**

- Ensure that all data and information is properly archived, including time-based information.
- Comply with your off-site data protection protocols.

➤ **Shutdown and start-up protocols**

- Ensure that you have documented shutdown protocols. These may also include records and instructions of any disassembled machinery and how this is stored, any lubrication procedures that need to be considered when commissioning machinery again etc.
- Ensure that you have documented start-up protocols, both regarding recommissioning procedures and schedules (timing).
- Machine rotation or movement during the shutdown period – If machinery needs to be rotated, e.g., 90 degrees, or moved slightly to reduce stress due to weight being stationary during dormancy, ensure you have clear SOPs in place.

➤ **Security**

- Maintain security
- Ensure that alarms and fire-prevention systems remain active.
- Ensure that insurance remains in place.

➤ **Maintenance**

- Apply best practice and excellent 5S for any maintenance in the off season to prevent knock-on or unintended consequences and poor site management.
- Control and monitor contractors on site.

## execution steps

See success factors above.

## assessment questions

**Please Note:** There is no minimum / maximum number of questions you can add.

|     |                                                                                                                                                     |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Do you manage any waiting or storage period at receiving according to best practice?                                                                |
| 2.  | Is your de-greening process and control up to standard?                                                                                             |
| 3.  | Are the waiting times of completed, as well as half pallets below a set and acceptable threshold?                                                   |
| 4.  | Is your loading time, process, and routing of land transport optimal?                                                                               |
| 5.  | Do you manage your container procurement optimally?                                                                                                 |
| 6.  | Do you control the loading of containers according to best practice?                                                                                |
| 7.  | Is your cold chain management and tracking up to standard?                                                                                          |
| 8.  | Have you included all waiting, storage and shipping processes and periods in your process mapping?                                                  |
| 9.  | Do you have clear KPIs and metrics that provide feedback with regard to all waiting, storage, dwell times, and transit risks and performance?       |
| 10. | Do you follow systematic, documented shutdown and start-up procedures for the packhouse as a whole and for every piece of equipment and technology? |