

Certis Guide to Good Potato Storage

1. Inspect

- **Annual inspection** of buildings and hardware is very important - preferably carried out a few weeks prior to store loading.
- Carry out a **risk assessment** to assess the risk to anyone working in the store and surrounding area.

2. Hygiene

- **Clean the store. Thoroughly.** Clean any equipment that will come into contact with the harvested crop.
- Remove as much dirt and dust as possible. **Total removal of disease inoculum¹ is required.**
 - **Vacuuming is the best** form of dust and debris removal.
 - Brushing, both by hand and mechanically, is not ideal. This can just move dust and disease inoculum¹ from one place to another.
- **Disinfect all cleaned surfaces, handling equipment, fabric and boxes.**
 - It is imperative to only use disinfectants after the area has been cleaned - the presence of organic matter can reduce the effectiveness of disinfectants.
 - Jet5 is perfect for this application
- Contractor services are available to undertake such disinfecting:
 - Using pressure washers and thermal foggers
 - Ozone generators can also be hired
- Leaving boxes outside will allow **UV light to kill fungal spores.**
 - However, leaving them outside for an extended period of time can reduce box life by circa 30%.

3. Careful Handling

- Get stocks as clean and free from **disease inoculum¹** as possible (soil and debris).
- **Minimize damage, minimise handling.**
 - Any operation where tubers are handled risks damage - bruises and skin wounds.
- Skin Set and Curing² are fundamental to maintaining a barrier against disease and preventing moisture loss.
 - Curing² minimises disease inoculum¹ getting into any wounds (Dry Rot and Gangrene).
 - Curing² is fastest in recently harvested tubers.
- Try to **fill the store within 7 days** - a maximum of 14, if possible.
 - Ventilate within an hour or two to remove surface moisture.
 - Consider the use of curtains to divide the store into smaller sections that are easier to control.
- **Dry rapidly, keep dry.**
 - When using a liquid seed treatment, ensure adequate conditions for the tubers to dry.

4. Airflow

- Air can be the best fungicide there is.
- Stores should have **positive and uniform airflow.**
 - Minimising still and stale air.
- Stack Boxes to a uniform height and ensure they are aligned with the main airflow.
 - It can be tricky to distribute air to all areas of the building - **air will always take the path of least resistance.**
 - Consider investing in a dividing curtain or plenum to separate and return air.
- Be wary of **Air Leaking** from the store.
 - This can be a major problem, increasing running costs and tuber weight loss.
 - *Consider an Air Leakage AP50 Analysis on older stores.*

5. Temperature and Condensation

- Moisture on the skin of tubers, exacerbates the risk of disease taking hold.
- **Ensure that moisture does not appear in store.**
 - Condensation can occur on the tubers themselves, if the air surrounding the tubers is warmer than they are.
 - Avoid this by regular monitoring and control of Temperature in store.
- **Reducing the temperature**
 - The rate of Curing² is influenced by temperature.
 - Decrease the temperature as soon as possible.
- Research has shown that dry curing the crop significantly reduces tuber diseases developing.

6. Records

- Comprehensive records can help **identify opportunities for improvement** - efficiency, quality and safety.
- **Records are valuable in times when things might not have gone as planned.**
- Monitor and keep records of:
 - Incoming and outgoing crop
 - Seed Treatment applications
 - Store **energy use**
 - **Carbon dioxide levels** (Below 2500PPM)
 - Temperature
 - Disease Development
 - Sprouting

Notes

¹ For diseases, the **inoculum** is any part of a pathogen that can initiate infection. In the case of *Fusarium spp* (Dry Rot) the inoculum is Fungal Spores, present on or in organic matter - such as crop debris or soil.

² The tubers natural wound healing process.

Please refer to the AHDB Store Managers guide.