

How to avoid expensive disasters with effective monitoring of potato storage conditions

Potatoes are a high-value crop with rigorous quality standards and tight market specifications. Stringent protocols need to be met to ensure that a quality crop is safeguarded and in optimum condition for sale. The safe storage of potatoes is complex and depends on several factors, meaning that efficient store monitoring is essential.

Poor storage control and monitoring can result in significant problems, such as disease development, rots and sprouting. All lead to potato loss and additional grading requirements.

- High store temperatures and air flows are important at lifting to encourage prompt curing (wound healing).
- Store humidity is important to minimise moisture loss (potatoes continue to respire when in store).
- Quality Control and Assurance – automation of verification of compliance with applicable QA and customer audit requirements



Given the above, it is beneficial to understand if the farm's on-site storage (both ambient and cold) is effective at maintaining the required conditions.

Potato storage is a critical part of the quality chain and a specialist activity that can have a significant impact upon quality parameters, marketability, and financial return to the farmer.

Monitoring and management of storage temperature is a critical component in managing potato quality and minimising disease impacts. Incorrect in-store measures can have potentially catastrophic consequences leading to physical crop breakdown and a subsequent loss of market value.

Clearly it is important from the farmer's perspective to ensure that the value of the crop is not lost due to poor storage conditions and hence an alarm function is vitally important should equipment fail or the integrity of the store be compromised.

Maintaining consistent records to meet QA and customer audit requirements can be onerous. An automated system is beneficial in terms of consistency and time saved.

SmartRural offers potato farmers and store managers piece of mind by deploying temperature & humidity sensors in the potato store. The data from these easily deployed devices drives a monitor/alarm function, feeding data back to an app that monitors the internal potato store temperature and humidity.

The insulation material used in the store does not affect the workings of the devices, nor does the mass of the potatoes and storage boxes. Working examples on a Demonstration Farm show the solution working through the full store.

