

Successfully Storing Problem Potatoes

Storing hot or cold, wet or disease-infected potatoes is challenging but, with the right care and attention, possible.

First, know your risk: wet tubers combined with disease infection is a dangerous combination. Wet tubers combined with disease pressure and high temperature is deadly.

Second, manage airflow. Uniform airflow is absolutely critical to managing all tubers, especially problem potatoes. Wet soil and broken-down tubers will limit airflow through those sections of the pile. Air systems should be designed such that the slowest air velocity is in the plenum, the next slowest is in the laterals, and the highest air velocity is at the lateral openings. The plenum and laterals should be pressurized so that all laterals and all openings receive an even distribution of air, regardless of distance from the source. If designed in this manner, air will flow evenly through the pile and the pressure drop throughout the pile will be negligible.

Unfortunately, dealing with unsound or poor condition tubers often requires one treat both the problem potatoes and the surrounding, healthy, dry potatoes in the same manner. If at all possible, adjust airflow to specific areas. Periodically close laterals to healthy sections of the pile or increase airflow only to problem sections to reduce unnecessary shrink and pressure bruise to sound tubers.

Cold tubers should be managed in the opposite manner: close off laterals under cold tubers to allow them to warm slowly, since warm air with a dew point higher than cold tubers will cause condensation.

Ideally, consider installing a secondary air system in the same bin in order to maximize flexibility and variable airflow control. Storing tubers in multiple independent bins also allows for increased management control of tubers with varying condition and temperature.

Third, monitor the pile intensively. Measure the air and tuber temperature on an ongoing basis. An infrared thermometer can help identify potential hot spots.

Also monitor relative humidity. While surface moisture favours disease progression, microorganisms cannot access water vapour. As such, optimal relative humidity can be maintained even in cases of disease pressure so long as dew point is managed correctly. That said, if tuber breakdown begins, the relative humidity of the supply air should be lowered to dry the liquid released from tubers.

Finally, watch carefully for depressions at the top of the pile or liquid in the laterals, and be on guard for the distinctive smell of tuber breakdown. All the high-tech equipment in the world cannot replace the necessity of a vigilant and observant storage manager.

Though a poor crop can never be improved, it can be saved.

