



Potato Harvest and Storage Management to Reduce Storage Losses

July 2004

In preparation for the upcoming potato storage season, we must be aware of the potential for the storage of potato tubers infected with late blight (*Phytophthora infestans*). Since there is no chemical that can be applied to tubers going into storage to control late blight, careful harvest preparation and wise storage management decisions are your best defences. You cannot cure tubers of late blight, but you can minimize storage losses from tuber infections.

No potato cultivar is immune to late blight and cultivars differ in susceptibility. Norkotah and Shepody are very susceptible. Handle potatoes carefully.

Kill vines well in advance, allowing two to three weeks between topkill and harvest. Green living tissue (such as stems, which tend to resist top kill) may harbour viable spores that can be washed down to the tubers through cracks in the soil or contact tubers during harvest. Tubers can be infected during harvest when spores are present, so make sure vines are DEAD. Continue your regular fungicide spray program until the vines are completely dead. Application of a copper fungicide after topkill may be beneficial in protecting tubers from infection during harvest.

Grade out any tubers showing late blight. Leave infected tubers in the field as long as possible so they will decay or show signs of infection and will be easier to remove. The current recommendation is not to store potatoes if more than 5% late blight or other tuber rots are present. You may need extra people on the harvester or bin loader to remove as many visibly diseased tubers as possible.

Map out your field, locate any problem areas, and harvest these areas last. If the tubers must be stored, put them in an area that is readily accessible to allow easy removal from storage.

Avoid conditions that are conducive to the spread of late blight. Do not harvest during wet weather - if it is raining, stop harvesting. Handle tubers to minimize bruising - infection can occur through wounds. Remove as much soil and debris as possible - restricted airflow in storage leads to hot spots and tuber breakdown.

Blighted tubers are subject to secondary infections. **Minimize the potential for soft rot** by drying the tubers as quickly as possible. Continuous air movement (minimum 2 cfm/barrel or 1.2 cfm/cwt) for the first 30 days may be necessary. Do not wet the tubers going into storage.

Cool the pile to the holding temperature as quickly as possible. Avoid harvesting tubers with a pulp temperature above 15 °C (60 °F).

Do not overfill the storage. This hampers air flow and increases the chances of tuber breakdown from soft rot and pink rot. There should be at least 0.6 m (2 feet) between the top of the pile and the storage ceiling.

Wet conditions late in the season increase the risk of Pink Rot (*Phytophthora erythroseptica*) and **Pythium leak** (*Pythium* spp.). Tubers grown in areas where water accumulates can become infected with pink rot in the field. Pythium leak invades tubers through wounds. These diseases can hasten the spread of bacterial soft rot in storage through watery ooze from infected tubers. Good ventilation in storage is essential to control these diseases. With adequate air circulation, infected tubers will become mummified and not undergo a wet rot. If we have late rains this season, be on the look out for pink rot and Pythium leak.

Harvest and Storage Checklist:

- ✓ Map out the field and identify problem areas.
- ✓ Vines should be dead for at least two weeks before harvest.
- ✓ Harvest during dry periods, do not wet tubers.
- ✓ Harvest problem areas, low-lying areas and spray tracks last.
- ✓ Grade out infected tubers before storage.
- ✓ Make the pile as clean as possible, remove dirt and debris.
- ✓ Do not overfill the storage.
- ✓ Adequate ventilation is essential to dry tubers and prevent secondary infections.
- ✓ Avoid free moisture in or on the pile.
- ✓ Monitor the pile closely for any signs of hot spots.
- ✓ Be prepared to move the tubers quickly if necessary.



Late blight



Leak



Pink Rot