

## PLACING POTATOES INTO STORAGE

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Many storage losses stem from the way potatoes are placed into storage. Potatoes never improve with storage time.

### PRE-HARVEST EVALUATION

All potato fields should be evaluated by a random sampling method to determine solids, size, yield, external and internal defect level and rot. Notes should be kept on wet areas and weeds.

From this information, storability can be evaluated. Poor quality potatoes should go into short term storage or not be stored at all.

### WHEN TO START STORING

In general, potato harvest for storage starts too late to deliver the best quality tubers.

Tuber pulp temperature should determine when to start harvest rather than time of day or date in the season. The least mechanical damage occurs at pulp temperatures above 45° F.

Good air storages with air flows of 17 to 20 cfm per ton and good means of adding relative humidity can take field pulp temperatures of up to 65° F. without problem. With this in mind we can deliver to storage in mid September (see figure 1). Experience has shown that early morning hours would have to be used to keep pulp temperatures below 65° F.

Maximum pulp temperature for non-air storages should be 55° F and loading could not take place till later in the season.

### CLEANLINESS MEANS GOOD STORAGE

Potatoes which are delivered to storage clean will store better than those which are not. Foreign material fills air spaces, reduces air flow, resulting in hot spots and finally decomposed spuds.

The remainder of dirt and foreign matter should be removed at the piler. Removal of rot and undersized tubers also aids in storability.

### HOLD HARVEST DAMAGE TO A MINIMUM

Harvest damage costs the potato industry in the Basin a minimum of \$10.00 per ton in losses.

We can control many factors which contribute to bruise including harvest pulp temperature, diggers, trucks, and pilers. Damaged tubers increase storage shrink considerably.

Low tuber temperatures contribute more to harvest damage than any other factor (see Figure 1.). Tubers which are below 45° F bruise more easily than above. Optimum temperature is between 50° and 60° F.

Other factors in favor of early harvest and high pulp temperatures is less sugar development and greater storability in that early stored tubers do not break dormancy and sprout as easily. The reason for this is that they have not gone through a chill period and then warmed up to storage temperature.

Generally in late season harvest, pulp temperatures are highest at 4 o'clock in the afternoon and lowest at 8 o'clock in the morning. In general the best harvest time in cold temperatures is from 11 a.m. to 11 p.m. (see figure 2 & 3).

Storage harvests should be planned so that it can be completed by October 15th as can be seen by Figure 1.

Areas in the digger which contribute to bruise are digger blade adjustment, chain speeds and drop heights. Digger chains should always be loaded to capacity and should remain loaded on corners.

Many trucks have too few or misplaced boards which adds to bruise.

When piling, the pile should be tiered so as to eliminate roll back. Many times drops between the truck bed and the piler are excessive.

IN ESSENCE WHAT YOU PUT INTO STORAGE WILL DETERMINE WHAT YOU GET OUT.

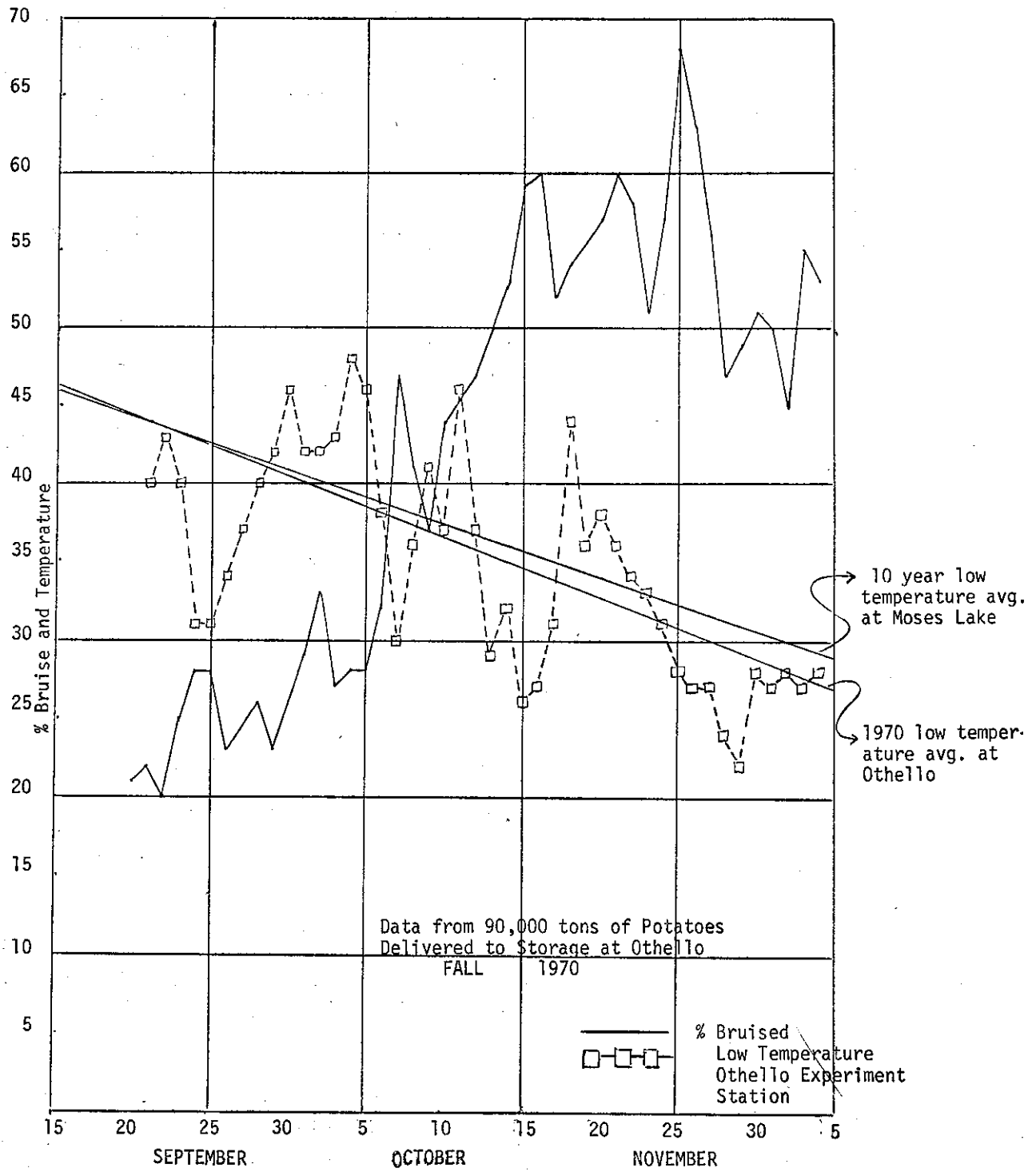


FIGURE 1

prepared by Mel Martin, Potato Specialist, Chef Reddy Foods Corp.

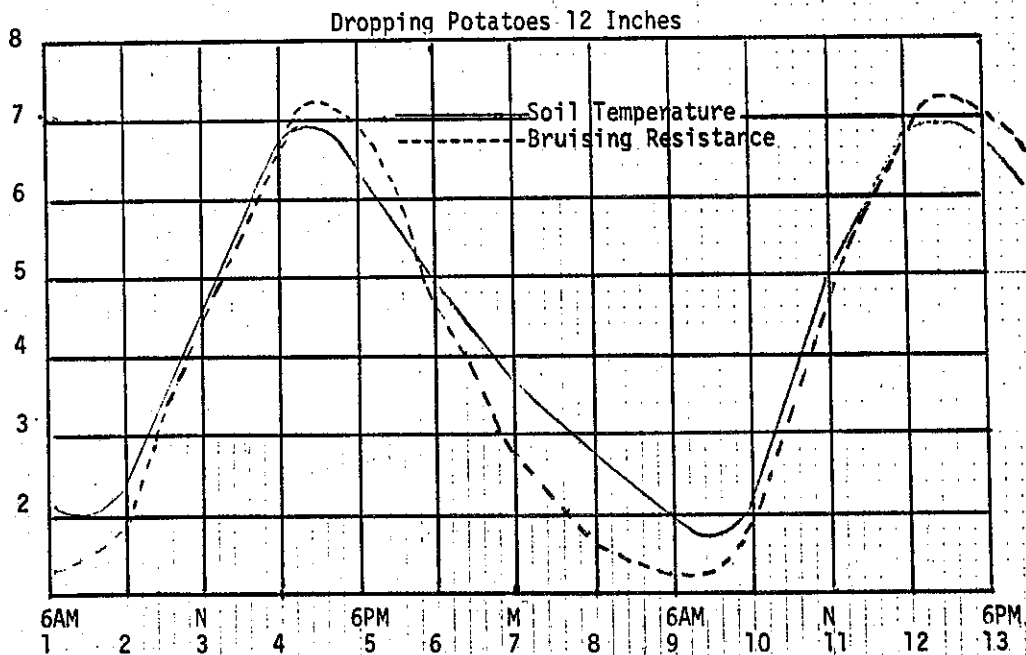
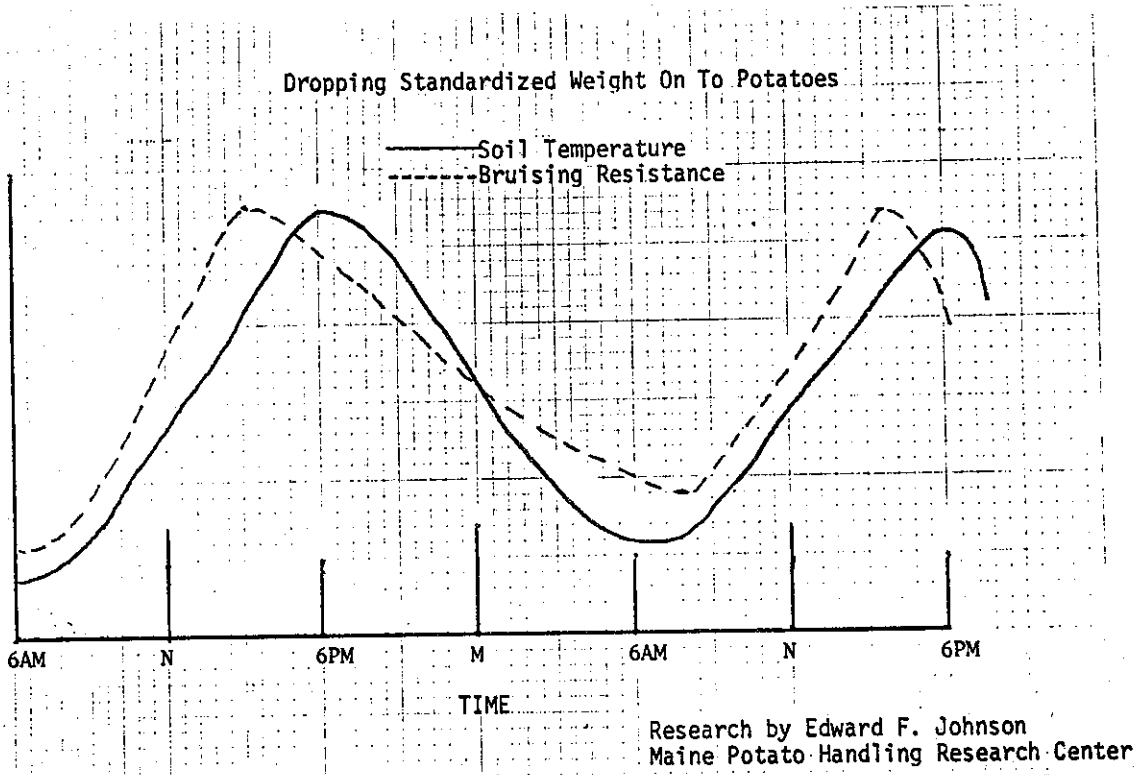


Figure 2 - Graphs showing the relationship of cycles in bruise rating to the cycle of soil temperature using average data in 1966.

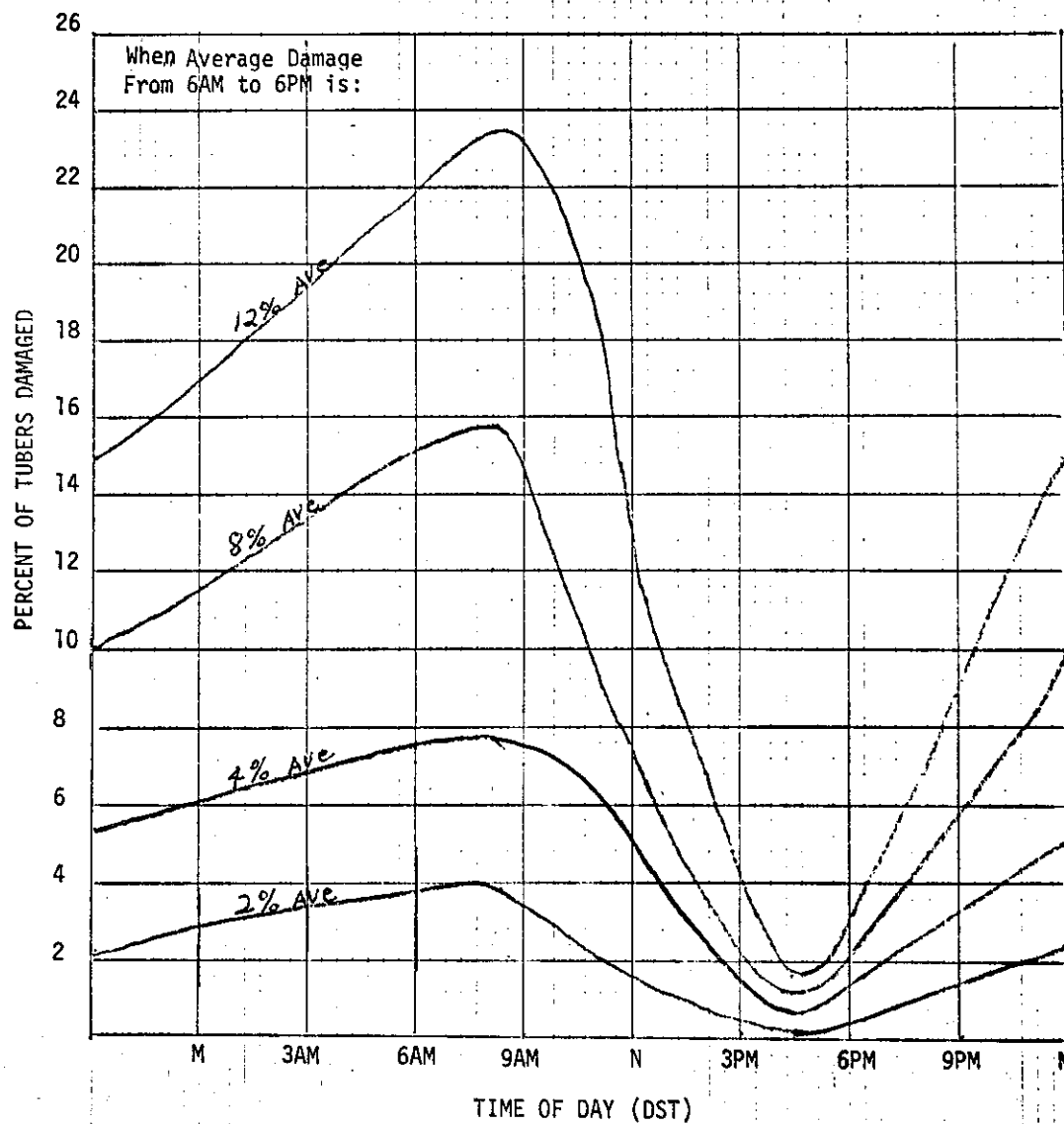


Figure 3 - Estimated amount of bruising damage that would have occurred during an average day when harvesting in 1966 for operations whose average damage between 6AM and 6PM equals 2, 4, 8, or 12 percent.

Research by Edward F. Johnson  
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