Bruising risk assessment advice sheet - 14

Grading

Storage length and temperature influences tuber physiological age. As tubers age, cell walls within the tuber become weak and membranes leaky. This can result in compression damage in bulk stored crops. Tubers also suffer moisture loss resulting in low tuber turgidity and this increases bruising susceptibility.

Potatoes graded below 8°C are more susceptible to bruising and it is recommended for crops colder than 6°C they are warmed prior to grading. Where rapid warming of crops takes place, skins lose moisture and should be allowed a recovery period of 24 hours to allow skins to regain their original moisture, otherwise thumb nail damage may occur.

A sparsely filled grading line can lead to bruising at various points. Full conveyors, cleaning units and graders will cushion tuber drops. Excessive drop height will further contribute to bruising, particularly when it is greater than 150mm and on belting with a hard surface underneath.

The use of electronic potatoes can be helpful in identifying areas of concern on grading equipment.

ACTION

- **Do not pile bulk stores greater than 4 metres.**
- **Optimise ventilation and automatic controllers to avoid excess moisture loss.**
- **Warm potatoes to 8°C prior to grading.**
- **Prevent rapid warming of tubers.**
- **Check grading equipment daily for wear and tear.**
- **Keep lines filled but avoid overloading cleaning units and the grader.**
- **Check for tuber damage once a day and when changing batches.**

BPC National Bruising Survey

Only 6% of respondents to the survey thought moderate or greater bruising happened as a result of storage. 25% of respondents thought moderate or greater bruising happened during store unloading and 42% thought moderate or greater bruising happened during grading (including box emptying and filling).

For further information on storage of potatoes see BPC Store Managers' Guide available on www.potato.org.uk/sbeu or telephone BPC Publications on 01865 782222

Potatoes are more likely to bruise.....

...with a long storage period.
...where excessive weight loss has occurred during storage resulting in low tuber turgidity.
...in bulk stores where piles are in excess of 4 metres.
...when handled and graded below 8°C.
...where they incur excessive drop height, especially where there is no cushioning or lines are sparsely filled so other potatoes do not break the fall.

Potatoes are less likely to bruise.....

...with a short storage period.
...where little weight loss has occurred and tubers have remained turgid.
.. in bulk stores where piles are below 4 metres.
... when warmed to a minimum temperature of 8°C prior to grading.
...where drop heights are minimised, cushioning material is used and lines are adequately filled so potatoes cushion other potatoes from excessive drops.