Harvest 2019

Harvest 2019 has been a stop start affair so far with recent rainfall making conditions very sticky. While just getting the crop lifted is the primary concern at the moment it is still important to take your time and to reduce tuber damage as much as possible. Remember, settings on the harvester may have to be adjusted from day to day depending on the conditions.

1. Ensure the diablo rollers are aligned with the drills. Avoid having too much downward pressure as this will squash tubers near the surface. This is important in wet conditions to avoid “Bulldozing” of the drills.

2. Check the depth of the share; too shallow and tubers will be sliced. Too deep and extra soil will be brought onto the web and will need extra separation which will slow down the operation.

3. Check disc setting, if it is too wide you risk bringing extra soil and even stones onto the webs. Too deep and again tubers may be sliced.

4. Aim to have the sieving web at 85% filled with tubers (pic.1). If the web is too slow then you risk tubers being forced to the side and damaged. Too fast, tubers will roll back down the web.

5. Keep agitation of the tubers to the minimum level required to remove soil. Bouncing the tubers will cause excessive bruising.

6. Check the speed of the rollers - if they are turning too fast they can throw tubers up in the air, too slow and they can “grab” the tubers.

7. Watch out for wear on all padding material and side curtains, where gaps appear tubers can get trapped or banged.

8. When transferring to the trailer/box, make sure there is good communication between the drivers. Cushion the fall of the tubers as much as possible. Drop height from the harvester to the trailer can result in significant bruising. Dropping tubers from a height of more than 1m onto a hard floor will result in bruising. Also remember that dropping a tuber more than 1m onto another tuber will damage both!

9. Always check the operator’s manual or consult with the manufacturer when changing settings for different conditions.

10. Carry out daily checks using a hot box for bruising. Set the temperature at 34 -36° C and leave the samples overnight. Inspect the tubers and assess the numbers bruised. Use these inspections to inform the drivers of any issues at harvest.

Pic. 1: Ensure web is well filled
Potatoes will not improve in condition in store but they certainly can deteriorate. Store hygiene is critical when it comes to maintaining quality. Remove all dust and soil before the new crop comes into store. Dust will contain disease spores which will in turn act as a source of contamination for the new crop. Where rots are seen on the grading table disinfect the equipment daily to prevent contamination of the next day’s crop. Products like Jet 5 (peroxyacetic acid) will help to reduce the transfer of infection.

Pink Rot (Pic. 2) and bacterial soft rots are common this year. They are generally more common in warm wet soils.

Make sure that crops are properly dried and cured before going into store, remember temperature has an important effect on the rate of curing see Table 1.

<table>
<thead>
<tr>
<th>Tuber Temperature (°C)</th>
<th>Initial Suberisation (Days)</th>
<th>Periderm Complete (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5</td>
<td>7 - 14</td>
<td>21 - 42</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>7 - 14</td>
</tr>
<tr>
<td>20</td>
<td>1 - 2</td>
<td>3 - 6</td>
</tr>
</tbody>
</table>

Filling the store and box stacking are also an important part of getting the fridge unit working correctly. Make sure all boxes are filled no higher than water level and that the boxes are stacked in the correct manner to aid air flow. (See fig. 1)

Remember air will always take the easiest route back to the fridge so make sure that there are no obstacles or alleys in the stack which will result in uneven air flow through the boxes.

There should be at least 10-12 probes in the boxes to monitor temperature. Remember these are sending info back to the fridge telling it when to turn on and off. For box stores a ventilation rate of $0.02 \text{m}^3/s/t$ is recommended. Over ventilation will result in excess moisture loss and decrease weight, as well as costing money. Under ventilation can result in $CO_2$ build up, condensation etc. which can spread disease.

A good guide to managing potato stores can be found on the AHDB website at; https://potatoes.ahdb.org.uk/publications/store-managers-guide or use the QR code below to view it on your smartphone.

![QR code](https://via.placeholder.com/150)
PEST DAMAGE

Again in 2019 there are plenty of reports of pest damage such as wireworm and slugs (Pics. 2 & 3) even though the crops were treated. Target these crops that need to be lifted first as the damage will only get worse the longer they are left in the ground.

Pic. 2; Wireworm eating a potato

Pic. 3; Slug damage

Chemical control for both slugs and wireworm can be unreliable but it tends to be the first control measure that we look at. Application methods also tend to be unreliable as both these pests live under ground near the tubers so unless these chemicals are placed alongside these tubers control will be variable.

In reality the only true control measure for either is prevention. Therefore identifying fields with these problems and avoiding them is the best solution.

Try to put in control measures where possible such as crop rotation, stubble cultivation and try to reduce the population before the potato crop goes in, this will be difficult in short term land leases.

At this stage there are no control options other than harvesting the crops as soon as possible. Grade the crop as hard as possible before going into store and try to remove as much of the damaged material as possible to reduce the storage costs. Label the boxes according to the field and separate them in store.

DESICCATION

Many growers have tried out different desiccation options this year in preparation for life after diquat. It's important to record the differences observed e.g. burndown time harvest implications, stolon detachment issues, disease or storage issues so that this information can be used going forward. From trials carried out the different options used certainly slower than diquat so growers need to come up with a plan for 2020.

Pic. 4: Diquat vs Spotlight Plus

Shay Phelan
Potato specialist
087-7985195
shay.phelan@teagasc.ie