

## Narrative for Harvester Operation Video

- a. The purpose of this video is to show how to operate a potato harvester in a way that reduces bruise damage.
- b. The harvester does three main jobs - separate soil from potatoes, separate vines from potatoes, and then convey those potatoes up into the truck. Those processes involve a lot of transition points between conveyors, and a couple of changes in direction. All of that movement provides plenty of opportunities to bruise the crop.
- c. It is very common to see a steady increase in bruise damage on the harvester as the potatoes make their way from the primary up to the boom and into the truck. Excessive bruise damage leads to a loss in quality, increased disease in storage and reduced value of the crop. However, following the concepts provided in this video will help minimize bruise damage.
- d. One of the most common causes of bruise damage on potato harvesters is not carrying enough soil on the primary conveyor. If the soil load on the primary is too light, potatoes tumble and roll as they reach the top of this conveyor. Harvester operators should constantly monitor the soil load and adjust forward speed so that some soil is carried over onto the secondary conveyor. This layer of soil provides cushioning to potatoes as they fall from the primary to the secondary.
- e. It is important to change forward speed by changing the tractor gears instead of using the throttle as this maintains the relationship between forward speed and conveyor speeds.
- f. Another cause of bruise damage is too few potatoes on the rear cross, side elevator and boom - causing potatoes to fall onto bare chain. The speed of each of these conveyors should be adjusted so that there is a full layer of potatoes across the entire conveyor, which will cushion the fall from one conveyor to another.
- g. Harvester operators should also check that there is a layer of cushioning material, such as belting, along any surfaces where potatoes can strike bare metal. This includes the back wall of the rear cross, the outside of the elevator, and along the front edge of the boom. This will keep potatoes from hitting bare metal as they make the transition from one conveyor to the next.
- h. Of course, cushioning materials and flights only work well if they are not worn through or damaged. Harvester operators should take time each day to look for worn chains, rollers and flights, and have them replaced immediately.
- i. Finally, the drop from the boom discharge into the truck should be as small as possible. Drops of over 6 inches, especially when potato temperatures are below 50F, can lead to high levels of bruising.
- j. Final list of tips for operation –
  1. Change tractor gears to speed up when soil load on the primary conveyor is too light, and slowdown in wet spots. Do not adjust the throttle as the change in rpm changes conveyor speeds relative to ground speed.
  2. If too few potatoes are on the rear cross, side elevator or boom slow them down so that there is a full layer of potatoes across the entire conveyor.
  3. Make sure belting and/or cushioning material is attached to places where potatoes can strike bare metal, and check regularly that it is not caked with soil or damaged.
  4. Lower the discharge end of the boom as close as possible to the pile of potatoes in the truck to minimize the drop height.