

Handling and Damage Prevention

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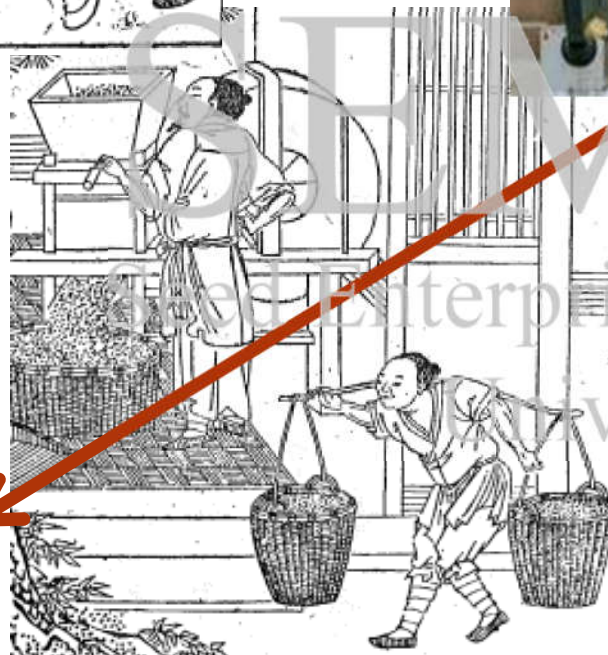
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Handling and Damage Prevention



Question:
How to move seeds from
University of Nairobi
to point B safer,
quicker, and easier while
maintaining seed quality and
purity?

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Handling Equipment - Requirement

- Efficient movement of seed into, through and away from the processing plant is a vital part of seed processing.
- Proper placement of correct seed conveying equipment can increase processing efficiency, reduce seed damage, and minimum contamination.
- The selected conveyor shall:
 - Minimize damage to the seed,
 - Have adequate capacity to serve the processing or storage equipment without reducing their efficiency, and
 - Be self-cleaning or easily cleaned.

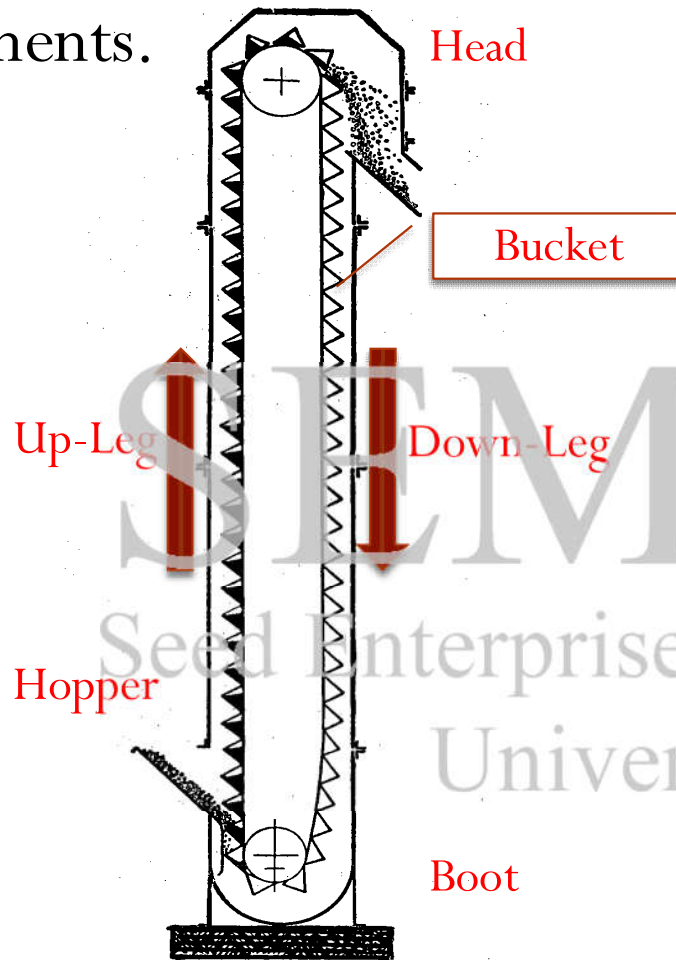


Handling Equipment - Type

- During processing it may be necessary to move seeds vertically, horizontally, or on an inclined plane.
- Conveyors can be classified as:
 - Bucket elevators,
 - Belt conveyors,
 - Vibrating conveyors,
 - Pneumatic conveyors,
 - Screw conveyors, and
 - Lift trucks.

Handling Equipment – Bucket Elevator

- Bucket Elevators: Most widely used in seed processing plant. It is quiet, efficient, long-lasting and minimum maintenance requirements.



Handling Equipment – Belt Type

- Belt Conveyor: Is an endless belt operating between two pulleys with idlers to support the belt and its load.
- Used to transfer seed between bins or loading, not widely used between the processing equipment.



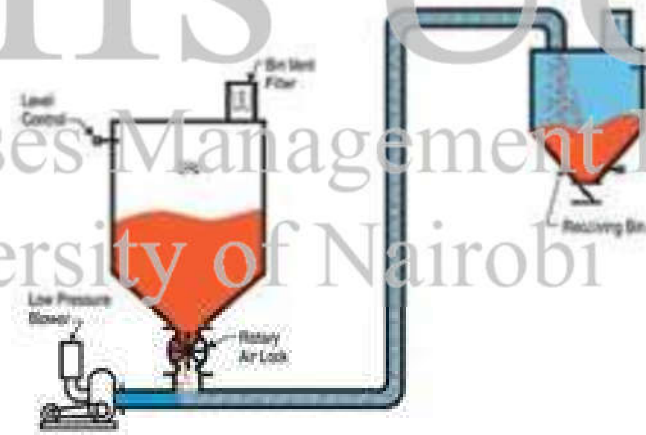
Handling Equipment – Vibrating Type

- Vibrating Conveyor: It moves material through a metal trough at horizontal or near horizontal angles.
- Very minor seed damage but limited to speed and distance.
- Chief limitation is that it must be mounted on a firm foundation.



Handling Equipment – Pneumatic Type

- Pneumatic Conveyor: It moves granular materials through a closed duct system by air.
- It is flexible, since the conveying pipes may be placed in any position and may be branched.
- Noise and seed quality reduced under high speed/impact.



Handling Equipment – Screw Type

- Screw/Auger Conveyor: Is one of the oldest and simplest methods of moving bulk materials.
- The screw may operate in a U-shaped trough for horizontal conveying, or through cylindrical tubes or casing when materials are moved vertically or on an inclined plane.
- Because of friction among seeds during conveying and cracking by improper clearance, it is NOT recommended for easily-damaged seeds.



Handling Equipment – Lift Truck

- Lift Truck: Well-constructed and planned tote boxes serve both as conveyors and as storage units.
- With pallets, the same lift truck that carries the boxes can also transport and stack bagged seed.
- It offers many advantages in cleanliness, maintenance of seed purity, damage-free handling, and flexibility.
- High investment and needs a skilled driver.



Questions?



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