

# **MOISTURE MEASUREMENT & CONVEYING DEVICES**

**BY**

**Gibson Mutuli, Department Of Environmental  
And Biosystems Engineering**

Seed Enterprises Management Institute

University of Nairobi

# Objective

- Explore moisture measurement devices
- Explore seed conveying devices in treatment process

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# Overview

- A seed can be regarded as a structure composed of complex substances
- This water is variable in quantity - it can be added to or removed

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# Moisture Measurement Devices

## Methods of Measuring Moisture Content:

- *Direct measurement:* water content is determined by removing moisture and then by measuring weight loss;
- *Indirect measurement:* an intermediate variable is measured and then converted into moisture content. Building up calibration charts before applying indirect measurements is a prerequisite;
- *Empirical measurement:* refers to methods such as biting, shaking, crunching, commonly used by both producers and small traders. These empirical measurements are both indirect and subjective.





# Moisture Measurement Devices

- ***Direct measurement:*** water content is determined by removing moisture and then by measuring weight loss; heating in an oven, use of microwaves or infrared radiation



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**Indirect measurement:** an intermediate variable is measured and then converted into moisture content. Building up calibration charts before applying indirect measurements is a prerequisite

- Capacitance
- Radio Frequency
- Near Infra Red (NIR)
- Conductivity
- hygrometer





# CONVEYING DEVICES

- Depends upon the utility



**TRANSPORT CONVEYOR**



**FLOOR MOUNT CONVEYOR**



**UNDER BIN CONVEYOR**



**UNDER CAR CONVEYOR**

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# Conveying Devices

- Bucket elevators may cause impact damage as seed is thrown at the head





# Conveying Devices

- Screw feeders may compress the seed to breakage



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# Conveying Devices

- Pneumatic conveyors may damage seed



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# Conveying Devices

- Belt conveyors are much better
- Vibrating conveyors are much better



# EQUIPMENT MAINTENANCE

- Mechanical parts
- Electrical parts

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# QUESTIONS

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