



## UNIT 4 TOPIC – 9

### **Principles and operation: maize sheller, husker sheller for maize, groundnut decorticator, castor sheller**

#### **1. Maize Sheller:**

- **Principle:** A maize sheller is a machine designed to remove the maize kernels from the maize cob efficiently.
- **Operation:** The operation involves feeding the maize cobs into the sheller. Inside the machine, there are rotating components like blades or cylinders that separate the maize kernels from the cob. These components can be adjusted to accommodate different sizes of maize cobs. As the maize cobs are processed, the kernels fall out, and the separated cob remains. The kernels are collected as the output.

#### **2. Husker Sheller for Maize:**

- **Principle:** A husker sheller combines the operations of husking (removing the outer protective husk) and shelling (separating kernels) for maize.
- **Operation:** The machine typically involves a feed mechanism that takes in the maize ears. The husking process removes the outer husk layer, exposing the maize cob. Then, the shelling mechanism separates the kernels from the cob, similar to a maize sheller. The separated kernels are collected as the final product.

#### **3. Groundnut Decorticator:**

- **Principle:** A groundnut decorticator is used to remove the outer shell or husk from groundnut (peanut) pods.
- **Operation:** Groundnuts are fed into the decorticator, where they come into contact with a rotating drum or abrasive



surface. This process causes the outer shell to be removed from the groundnut kernels. The separated shells and kernels are then usually separated using a combination of air flow and screens or sieves, with the kernels being collected as the output.

#### 4. Castor Sheller:

- **Principle:** A castor sheller is designed to remove the outer husk or shell from castor beans (castor seeds).
- **Operation:** Castor beans are fed into the sheller, where they typically come into contact with a rotating drum or abrasive surface. The outer husk is removed, leaving the cleaned castor seeds as the output. Like groundnut decorticators, castor shellers may also use air flow and screens to separate the husk from the seeds.

These machines are essential in agricultural processing as they help farmers and producers efficiently separate valuable crop components from inedible or less valuable parts, saving time and labor. The specific design and operation of each machine can vary based on the manufacturer and the scale of operation. Proper maintenance and adjustment are crucial to ensure optimal performance and minimize crop loss during processing.