

SUBJECT: AGRICULTURAL SCIENCE

CLASS: SS1

WEEK: 3

TOPIC: FARM MACHINERY AND IMPLEMENTS

TERM: 3RD TERM

DEFINITION OF FARM MACHINERY

Farm machinery are the machines that farmers make use of to carry out various activities in the farm in order to reduce drudgery or tiredness and increase productivity. Examples are tractors, bulldozers, incubators, Sheller's, milking machines etc.

SOME FARM MACHINES ARE;

TRACTOR

Tractor is a powerful vehicle used for pulling or lifting farm implement. It has power take off (P.T.O). Shaft and hydraulic system for lifting implement under the control of the operators. It has internal combustion engine which uses diesel or petrol. Tractor can also be used for transporting crops and other products from the farm to collection centers.

BULLDOZER

Bulldozer is a self-propelled and powerful machine used for clearing the land and demolishing unwanted structures on the farm land under the control of the operator. It also works with aid of internal combustion engine.

SHELLERS

Shellers can be operated manually, mechanically or electrically. Sheller's is used for processing of agricultural products. Its major function is to remove the grains from the cobs and husks. The machine parts consist of hopper, drum, bucket, and winders.

DRYERS

Dryer is another powerful machine that is very important in the processing of agricultural products. This machine is a stationary machine that works with electricity to generate heat used for reducing the moisture contents of agricultural products.

INCUBATORS

Incubators is a machine designed basically for keeping eggs embryo warm and hatching fertilized eggs artificially. It takes 21 days for fertilized eggs of domestic fowls to develop and hatch inside incubators.

MILKING MACHINES

Milking machine is used for extracting milk from the udder of cattle or other milk-producing animals like goat mechanically. This machine is power electric motor, vacuum pump, trap pails, vacuum controllers, and milk tank and tea cups.

TRACTOR –COUPLED IMPLEMENT

Farm implements are mechanical instrument used on the farm to carry out both field and post-harvest operations. These implements include;

Harrows

Plough

Planters

Ridgers

Harvesters

Sprayers etc.

PLOUGH

Plough is a primary tillage implement used for clearing the land before planting. Plough are not self-propelled, they are driven by tractor or animals. The plough consists of the following parts;

Beam

Coupling point

Scraper

Concave disc

Disc bearing

Furrow wheel

There are two types of plough namely;

- i. Disc plough
- ii. Moldboard plough

FUNCTION OF PLOUGH

- I. Generally ploughs helps to control weeds
- II. Plough pulverizes the soil.

- III. Plough increases aeration of the soil.
- IV. It improves water infiltration capacity of the soil.

HARROW

This implement is used for secondary tillage practice and for land preparation. It is a driven implement, tractors and harnessing animals are used to drive it.

FUNCTIONS OF A HARROW

- 1. Harrow pulverizes the soil to produce fine tilts.
- 2. It breaks up soil clods into smaller soil and eradicates the weeds.
- 3. It can be used to mix the soil with fertilizer and manures.

There are two types of harrow namely;

- i. disc plough
- ii. spring-tine type

RIDGER

This is a secondary tillage implement used for land preparation. The ridger is used after harrowing and before planting. The important parts of ridgers are colliers, scraper, standard and coupling point.

FUNCTIONS OF RIDGERS

- 1. They are used for making ridges.
- 2. They make soil easier for roots of plants to penetrate.
- 3. They control erosion
- 4. They improve soil aeration
- 5. They facilitate the harvesting of root crops
- 6. They prevent the growth of weeds.

PLANTERS

Planters are planting implements. They are machines used for planting or sowing seeds. The implements are powered by tractor in most cases through the power take off (P.T.O). A planter is a specialized device which can be adjusted to plant some root crops. We have the following;

Precision planter

Broadcast crop planter

Row crop planter

Seed drill planter

SPRAYER

These are equipment designed to contain chemicals in liquid form. Sprayers are of different types which include hand gun, knapsack, boom, motorized sprayer etc. The most common is knapsack sprayer.