Reference: - eagri.org

Component of Tractors

- **Clutch** is a device, used to connect and disconnect the tractor engine from the transmission gears and drive wheels.
- **Power transmission system of a tractor:** Transmission is a speed reducing mechanism,
- equipped with several gears. It may be called a sequence of gears and shafts, through which the engine power is transmitted to the tractor wheels.
- **Transmission gears:** A tractor runs at high speed, but the rear wheel of the tractor requires power at low speed and high torque.
- **Differential unit** is a special arrangement of gears to permit one of the rear wheels of the tractor to rotate slower or faster than the other.
- **Differential Lock**: Differential lock is a device to join both half axles of the tractor so that even if one wheel is less resistance, the tractor comes out of the mud etc. as both wheels move with the same speed and apply equal traction.
- **Final drive** is a gear reduction unit in the power trains between differentials and drive wheels. The system, governing the angular movement of front wheels of a tractor is called steering. It is a mechanism in a tractor to raise, hold or lower the mounted implement or semi mounted equipment's by hydraulic means.
- **Average command area of a tractor** (26.1 kW) is about fifteen hectares. For calculating power availability from tractor on the farm, a weighted average of 26.1 kW power per tractor is considered.
- **Hydraulic Control System:** It is a mechanism in a tractor to raise, hold or lower the mounted implement or semi mounted equipment's by hydraulic means.

Power Tiller

- Also called hand tractor or walking type tractor.
- For calculating power availability from power tiller on the farm, a weighted average of 7 kw per unit is considered. Average command area of a power tiller (7.46 kw) is five hectares, where one pair of bullocks can command about two hectares only.
- 1920: Power tiller concept come in the world.
- 1947: First power tiller designed in Japan.
- 1950-65: Power tiller production increased.
- 1963: Power tiller first introduce in India.
- Japan is first country to use power tiller.
- Pressure of tyre: 1.1 to 1.4 kg/cm2

Famous power tiller in India

1. sato
2. krishi
3. Kubota
4. Yammer
5. Mitsubishi
6. Iseki (kerosene engine)

Components of power tiller:

- **Main Clutch:** Power goes from engine to main clutch through V-belt-pulley arrangement.
- **Transmission Gears:** Transmission gears consist of gears, shafts, and bearings. Transmission gears reduce speed of the engine and increase the torque at the wheels.
- **Wheel:** two to four ply pneumatic tyres are used.
- **Rotary Unit:** Power tillers have a rotary unit for field operation. Rotary tines are used in rotary unit for soil cutting and pulverizing purposes.