

# Land Preparation-tillage implements



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## Introduction

Equipment used for land preparation are classified as either primary or secondary tillage implements

## Primary tillage equipment

### 1. Moldboard plow

The moldboard plow is the most popular plow used in animal based and wet farming systems. It relies on killing weeds by incorporation, but does not handle obstacle such as stumps or rocks well.

### 2. One-way disc plow

The one-way disc plow throws soil one way, requires less power than moldboard, and relies on its own weight for penetration. They have higher maintenance costs than moldboards, but are able to contend with obstacles better.

### 3. Offset or 2-way disc plow

The offset plow is made up of 2 gangs of discs. One gang throws soil one way, and then the following gang throws soil in the reverse direction. This increases soil disturbance and leaves the soil surface in a more level state.

## Secondary Tillage Implements

### 1. Tine Cultivator

The tine cultivator is made up of evenly spaced tines mounted on a single or multiple tool bars. They are used after the initial plowing to reduce the clods sizes, control weeds and level the soil surface. They can be used in both flooded and dry conditions. They rely on killing weeds by cutting the roots and leaving them on the surface.

### 2. Disc cultivators

These are made up of 2 or 4 gangs of discs. The disc sizes are much smaller than the one-way disc (50 cm) and may be scalloped or plain. Scalloped discs are more aggressive than plain discs. It kills weeds and reduces clod sizes by cuttings and burying. They need to operate faster than other plows to maximize performance..

### 3. Rotavators

A rotovator works by hoes mounted along a PTO driven shaft pulverizing the soil in the direction of travel. It kills weeds and breaks down soil clods through pulverization, and has high energy requirements. Rotovators are often used for wet puddling, not handle obstacles well and have high repair and maintenance costs.

