

- Forms a ridge along the seed row ensuring seeds are covered by soil
- Check the seeding rate of the planter (calibration) before planting or drilling cotton seeds.

### Advantages of mechanized Cotton planting

- Reduces seed wastage
- Reduces planting and thinning labour requirement
- Uniform distribution and easy control of fertilizer usage
- Can be used with minimum tillage practices to plant in the ripped rows
- Ensures achievement of the recommended plant population
- Row planting makes it easy to manage weeds and pests



*Mechanized planted Cotton field*



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**Design and Layout:** Odipo S.N

**KALRO/NAVCDP Brochure No.156/2024**



## MECHANIZATION OF COTTON PRODUCTION

### (Tillage and Planting)



## Introduction

Mechanization is the performance of farm operations using machines. Importance of mechanization include:

- Helps to achieve timeliness of farm operations
- Saves on labour
- Reduces input losses through correct metering.

Cotton mechanization areas are in land preparation and planting and fertilizer application.

### a). Mechanized Tillage

- Commonly, farmers use animal or tractor drawn plough equipment.
- Majority small holder farmers use hand held tools such as jembes and pangas.

Climate smart tillage practices is recommended and these comprises of the following:

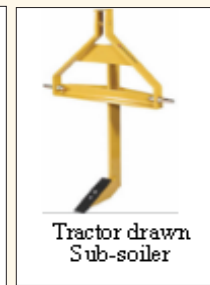
#### i) Ripping

- Use of chisel-shaped implement (ripper) to break hardpans
- Opens soil in narrow slot furrows, 5-10cm deep
- Improves field water infiltration and harvesting
- Slots made are used for planting cotton.



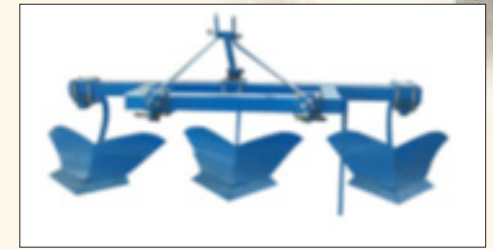
#### ii) Sub - soiling

- Use of a narrow tine implement (sub-soiler) to break hardpans at deeper soil layers
- Works at deeper depths than a ripper
- Sub-soiling to 50cm depth in every 3 - 4 years is recommended
- Allows easy water infiltration into the soil.
- The implement fits well in most plough frames for animal, 2 wheel or 4 wheel tractors
- Implement is available in the market.



#### iii) Ridging

- This is the gathering and heaping of loose soil to make ridges
- Ridges are for planting and to conserve water
- Encourages water storage in the crop root zone
- Ridging tool has two mould-boards placed side by side hinged to a wheel at the rear.
- Slight tool modifications allow making of tied ridges.



**Ridger**

### Advantages of Climate smart mechanized tillage

- Improves water infiltration and retention
- Used on dry ground to crack and shatter hardpans
- Tillage operation when the soil is wet lead to serious compaction and must be avoided
- Follow contours in tillage operations
- Leaves mulch on soil surface conserving moisture
- Improves water availability to the cotton crop.

### b). Mechanized Planting

This is the use of machinery in seed and fertilizer placement on the farm.

- Has a high work rate leading to timely planting
- Saves labour
- Requires de-linted and graded seeds.
- Manual, animal and tractor drawn planters are available.

### Functions of mechanized planter

- Opens planting furrow or hole
- Meters the seed and fertilizer
- Positions seeds in the soil and buries them at a specific pre-determined depth