



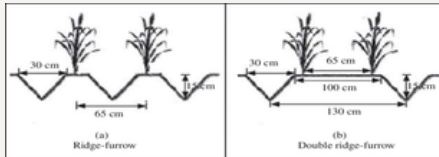
### C. Ridge and Furrow Sowing

In ridge and furrow system, the crops are sown on the raised bed known as the ridge and irrigation water is allowed to flow in the furrows. This technique is common for a variety of crops, including maize, cotton and vegetables.

#### Advantages

- Enhanced drainage for heavy soils
- Root growth and aeration improved
- Irrigation management efficiency
- Reduction in waterlogging and soil erosion

This technique is especially useful in regions with high rainfall or where the soil does not drain well.



### D. Precision Sowing / Planter Sowing

Precision sowing employs advanced planters and precision agriculture tools to precisely position seeds in a row at a predetermined location and depth. Planters with GPS guidance and automated seed meters provide accuracy for seed placement.

#### Advantages

- Uniform plant population
- Maximum use of land and nutrients
- Reduced seed rate
- Higher crop productivity

Precision sowing is also known to be applied in high-tech mechanized farming systems of maize, soybean, and sunflower.

### 3. Agronomic Benefits of Improved Sowing Methods

Better planting methods can offer a number of agronomic benefits with immediate effects on crop production and sustainability.

- Better crop establishment and germination
- Optimum plant population and spacing
- Efficient utilization of water, nutrients, and sunlight
- Reduced weed competition
- Higher yield and profitability

Correct seed placement and spacing allow for strong root development and efficient use of soil resources by individual plants, leading to healthier plants and higher yields.

#### 4. Key Recommendations for Farmers

- Use of good quality seeds and adequate seed rate.
- Use the recommended spacing between rows and plants for each crop.
- Use seed drills or planters rather than broadcasting.
- Proper land preparation, with adequate moisture in the soil, should be ensured before sowing.
- Sowing should be timely in accordance with the crop season.

#### CONCLUSION:

Better planting technology is important for higher crop yield and sustainable agriculture. Using modern methods like line sowing, seed drilling, ridge-furrow sowing, and precision seeding, farmers can increase crop establishment, best utilize resources and improve overall farm productivity.

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#### INTRODUCTION

Sowing is a key agronomic operation which brings direct influence on the crop establishment, plant population and final yield. The uniformity of germination and optimum plant spacing along with balanced and maximum use of soil moisture and nutrients can be achieved through proper sowing. Broadcast sowing is commonly associated with unevenness in seed distribution and low crop stands. Owing to the above facts, it is concluded that the use of better sowing techniques (line sowing, drilling, ridge-furrow planting, precision planting, etc.) predisposes to improved crop productivity and resource-use efficiency.

The investigation indicated that correct sowing practices enhance seedling growth, minimize inter-plant competition, and increase biomass and yield components. When seeds are placed uniformly, plants grow under equivalent access to sunlight, water, and nutrients, which leads to a better crop development and higher yields.



### 2. Major Improved Sowing Methods

#### A. Line Sowing

Line sowing is simply sowing the seeds in straight lines while maintaining adequate distance between two seeds and two rows. It keeps the plant population uniform and makes inter-cultural operations like weeding, irrigation and manuring easy.

#### Advantages

- Supportive of uniform crop stand and growth of plants
  - Less plant competition
  - Facilitation of weed control and inter-cultural operations
  - Application of fertilizer and irrigation water is uniform and efficient
- Line sowing, which is more resourceful than broadcasting, has been observed to enhance plant height, number of branches, biomass production, and yield in multiple studies.



#### B. Seed Drill Sowing (Drilling Method)

Seed drill sowing is a mechanized sowing method, where in the seeds are placed in the furrows at the desired depth and at equal spacing by using the seed drill equipment. After the seeds are placed, the seeds are then covered with soil by the machine.

#### Advantages

- Consistent seeding depth and spacing
- Enhanced seed-to-soil contact and germination
- Less wastage of seeds
- Labour and time saver

Field trials showed that seeding with seed drills enhanced crop yields about 10-30% over the traditional broadcasting which can be attributed to better crop establishment and higher efficiency in resource utilization.

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कोटा, राजस्थान



## Improved Sowing Methods for Higher Crop Yield: An Agronomy Perspective

संकलन

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