



FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES

Seeds and sowing

Seeds-

Plant propagation is made in two ways, sexual (by seeds) and asexual (by vegetative means). Biologically, seed is a ripe, fertilized ovule and a unit of reproduction of flowering plants.

Drilling consists of dropping the seeds in furrow lines in a continuous flow and covering them with soil. Seed metering may be done either manually or mechanically. The number of rows planted may be one or more. This method is very helpful in achieving proper depth, proper spacing and proper amount of seed to be sown in **Types of seeds**

1. Monocots
2. Dicots

Sowing-

Sowing or seeding is an art of placing seeds in the soil to have good germination in the field. A perfect seeding gives correct amount of seed per unit area, correct depth at which seed is placed in the soil and correct spacing between row-to-row and plant to plant.

Sowing methods

1. Broadcasting
2. Dibbling
3. Drilling
4. Seed dropping behind the plough
5. Transplanting
6. Hill dropping
7. Check row planting

1. Broadcasting

Broadcasting is otherwise called as random sowing. Literally means scattering the seeds broadcasting is done for many crops. Broadcasting is mostly followed for small sized to medium sized crops. This is the largest method of sowing followed in India since; it is the easiest and cheapest and requires minimum labours. To have optimum plant population in unit area certain rules should be followed. Only a skilled person should broadcast the seeds for uniform scattering. the ploughed field should be in a perfect condition to trigger germination.

The seeds are broadcasted in a narrow strip and the sowing is completed strip by strip. To ensure a good and uniform population, it is better to broadcast on either direction. This is called **criss-**

cross sowing. If the seed is too small, it is mixed with sand to make a bulky one for easy handling.

After broadcasting, the seeds are covered gently either using a country plough with a shallow ploughing or some wooden planks are used to cover the surface. In some cases, tree twigs or shrub branches are used. If the seeds are large, levelers collect the seeds and leave in the other side. Comb harrow is the best one.

Disadvantages

- All the seeds broadcasted do not have contact with the soil. 100 % germination is not possible.
- enhanced seed rate is required
- seeds cannot be placed in desired depth. Desired length ensures perfect anchorage. Lodging (falling down) is common in broadcasting.

2. Dibbling

Dibbling is the process of placing seeds in holes made in seedbed and covering them. In this method, seeds are placed in holes made at definite depth at fixed spacing. The equipment used for dibbling is called **dibbler**. It is a conical instrument used to make proper holes in the field. Small hand dibblers are made with several conical projections made in a frame .This is very time consuming process, so it is not suitable for small seeds. Mostly vegetables are sown in this way. This is actually line sowing. The seeds are dibbled at 2/3rd from top or 1/3rd at bottom of the ridge.

Advantages

1. Uniform population
2. better germination
3. reduced seed rate

	Dibbling (line sowing)	Broadcasting
1	Costlier	cheaper
2	Takes considerable time	Quickest and time saving
3	Mechanization is possible e.g weeding, harvesting	Not possible
4	Fixed seed rate	Higher seed rate
5	Uniform utilization of resources(land ,water, light, nutrient)	Resource utilization is un-uniform

3. Drilling or drill sowing

the field. Drilling can be done by

- a. Sowing behind the plough
- b. Bullock drawn seed drills
- c. Tractor drawn seed drills

4. Seed dropping behind the plough

It is very common method in villages. It is used for seed like maize, gram, peas , wheat and barley. A man drops seeds in the furrow behind the plough. Sowing behind the plough can be device known as malobonsa. It consists of a bamboo tube provided with a funnel shaped mouth. One man drops the seeds through the funnel and other man handles the plough and the bullocks. This is a slow and laborious method.

5. Transplanting

Transplanting consists of preparing seedlings in nursery and then planting those seedlings in the prepared field. It is commonly done for vegetable and flowers. It is very time consuming operation. Equipment for placing plants in the soil is called transplanter.

Advantages

1. Can ensure optimum plant population
2. Sowing of main field duration, i.e.management in the main field is reduced
3. Crop intensification is possible under transplanting

Disadvantages

1. Nursery raising is expensive
2. Transplanting is another laborious and expensive method.

6. Hill dropping

In this method, seeds are dropped at fixed spacing and not in a continuous stream. Thus the spacing between plant to plant in a row is constant. In case of drills, the seeds are dropped in continuous stream and the spacing between plant to plant in a row is not constant.

7. Check row planting

It is a method of planting in which row to row and plant to plant distance is uniform. In this method, seeds are planted precisely along straight parallel furrows. The rows are always in two perpendicular directions. A machine used for check row planting is called check row planter.