

## T.1.17 SOWING

### What is this?

The process of planting seeds or seedlings in the soil is called sowing.

Precision seeding is a method, usually a mechanical process that involves placing seeds at a precise distance and depth. It contrasts with broadcast sowing, where the seed is scattered over an area.

### Some additional information...

Sowing is the second step in tilling the soil. It includes arranging the soil and sowing the seeds or planting the seedlings.

The soil is arranged where a plough or harrows are used to tillage the soil. Soil is set in a way suitable for the crop to be grown. Soil is arranged by cutting furrows, building ridges, or making beds.

The process of sowing comes after arranging the soil. It is done in various ways. The seeds may be scattered on the field or poked into the soil one by one, or prepared seedlings may be transplanted. Crops like rice are sown by transplanting seedlings. Seedlings are first grown in a seedbed. A seedbed is made by piling soft soil on the ground. Sugarcane is planted in furrows made in the soil. Ladyfingers are sown on ridges, while leafy vegetables are grown in beds. The seeds of some cotton varieties, as well as those of pumpkin, bitter gourd, and watermelon, are sown by poking them into the soil one by one.

Sowing can be done by various methods, which include:

*Broadcasting* is a random scattering of seeds on the surface of the seedbeds. When carried out manually, it is characterised by uneven seed distribution and a higher rate of seed consumption.

*Dibbling* is a process where the seeds are placed in pre-made holes and then covered with soil. The seed holes are spaced at a fixed distance in the seed bed. These are made in the soil with a cone-shaped tool called a Dibbler. The method is time-consuming and is applied chiefly to vegetables or some large seeds. It is also called the linear seeding method.

*Sowing seed behind the plough* is a method where the seed is placed in the furrow behind the plough. It is applied manually or mechanically, but in both approaches, the process is slow and labour-intensive, which limits its application in modern agriculture.

*Drilling* is a method of sowing where the seeds are dropped as a continuous stream in furrow lines, then covered with soil. The application of the process can be manual or mechanised. In

modern agriculture, seed drills are used for this purpose. It provides control over the depth and distance of sowing and the number of seeds used. Seed drills allow the combined seeding process with the application of fertilisers and herbicides, which facilitates work and reduces costs.

*Transplanting* – This method is also known as the planting method. For its application, it is necessary to produce seedlings in a nursery in advance, after which the seedlings are planted in the prepared field. The activity can be carried out mechanised by a transplanter. The method is most often applied to vegetables and flowers.

*Hill dropping* – In this method, seeds are dropped at fixed spacing but not in a continuous stream. Unlike a drill, the spacing between plant to plant in a row is constant in this method.

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

Although manual seeding would ensure precision in the process, precision seeding is generally understood as a mechanical process carried out by seed drills. The actions carried out by the seeders include: opening the soil, placing the seed, and covering it, resulting in the formation of rows. The range of precision seeders available is vast, ranging from indoor seeders, through small farm seeders, to those that carry out large tasks. In general, the seeder allows adjustment of depth and spacing so that it can serve a range of crops.

A key advantage of precision seeding is the ability to carefully place one or several seeds at each position in the row. It greatly reduces the amount of seed used and reduces the need for thinning, allowing the plants to develop to their full potential. However, it is important to note that limited seed placement in the soil requires a high degree of germination to ensure an adequate number of plants per seeded area.



Source: <https://www.futurefarming.com/crop-solutions/amazone-presents-new-precision-seed-drill-at-sima-paris/>

Experts note that the precision seed drill has become one of the most valuable tools with the development of mechatronics and entry into agriculture.

It allows accurate seed deposition, thus reducing production costs, increasing profitability, and limiting negative environmental effects. Accuracy is expressed in controlling the number of seeds, the distance between them, and the sowing depth. These provide seeds with the best conditions for growth. The precision seeder allows the entire sowing process to be checked, making the production process more effective and efficient.

The benefits of using *precision seed drills* are obvious in larger production structures, where the optimised costs have a visible impact on the bottom line of the activity.

The evolution in mechanisation leads to the implementation in practice of the so-called pneumatic *precision seed drills* that significantly improve the results achieved with mechanical seeders. Although the two seed drills use the same principle of operation, there is a significant difference in their internal structure, which determines the difference in the final results.

The main advantage of the pneumatic precision seeder compared to the mechanical one lies in the greater flexibility of use since no precise seed arrangement is required. This is the next step forward in optimising the results of agricultural activity.

## Links

<https://en.wikipedia.org/wiki/Sowing>

<https://www.toppr.com/ask/content/concept/sowing-seeds-251042/>

<https://www.agriculturewale.com/sowing-and-methods-of-sowing/>

<https://www.agrifarming.in/seed-sowing-methods-types-of-sowing-in-agriculture>

<https://housing.com/news/how-does-sowing-work/>

[https://en.wikipedia.org/wiki/Precision\\_seeding](https://en.wikipedia.org/wiki/Precision_seeding)

<https://www.agri-motion.com/en/news/precision-seed-drill-what-it-is-for-and-how-it-works-agri-motion>

## Video

<https://www.youtube.com/watch?v=93qYdZl434c>

<https://www.youtube.com/watch?v=NKfhXDLsYMc>

## Keywords

*Broadcasting*

*Dibbling*

*Sowing seed behind the plough*

*Drilling*

*Transplanting*

*Hill dropping*

*Check row planting*

*Precision seed drills*