

*Perspective*

## Production of plants and techniques of production

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### DESCRIPTION

Plant production refers to the cultivation of agricultural products, ornamental plants, and edible mushrooms for human use in an economic and technical agricultural business.

Insofar as these are not plants, a plant product refers to goods of plant origin that are unprocessed or have undergone simple treatment.

One of the greatest worldwide issues facing the earth is increasing the sustainable production of plant food and fibre products during the next 50 years. The underlying genetic and physiological regulations on plant growth, the impact of soil, water, nutrients, disease, and pests on plant growth, and the influence of management operations are all part of the plant production system. Implementing innovations across all parts of the production system, while more efficiently managing resources and decreasing negative environmental consequences, will be required to achieve enhanced sustainable plant productivity. This major will prepare you to contribute to this worldwide revolution by providing instruction in plant biology, soil science, plant protection, sustainable crop management, automation, and precision agriculture.

The process of propagating new plants is known as plant propagation. Sexual and asexual reproductions are the two types of reproduction.

#### Sexual

The union of pollen and egg, which draws on the genes of two parents to form a new, third individual, is known as sexual reproduction. The floral components of a plant are used in sexual propagation.

#### Asexual

Taking a piece of one parent plant and causing it to regenerate into a new plant is known as asexual propagation. The new plant that emerges is genetically identical to its parent. The vegetative elements of a plant, such as stems, roots, or leaves, are used in asexual propagation.

#### Seed

To get high-quality plants, start with good seed from a reputable source. Choose kinds that will produce the required size, colour, and growing habit. Choose types that are suitable to your region and will mature before an early frost.

Many of the new vegetable and flower varieties are hybrids, which are more expensive than open-pollinated versions. Hybrid plants, on the other hand, typically have more vigour, uniformity, and yield than non-hybrids, and may also have specific disease resistance or other cultural features.

Some gardeners save seed from their own gardens, but this seed is the result of random pollination by insects or other natural agents, and it may not grow plants that are similar to the parents. This is especially true when it comes to the numerous hybrid varieties.

#### Germination

When certain internal prerequisites are met, germination will commence. A developed embryo, large enough endosperm to maintain the embryo during germination, and adequate hormones to start the process are all required in a seed. In average, expect only 65 to 80 percent of newly planted seeds to germinate. Expect 60 to 75 percent of those that germinate to yield good, strong, and sturdy seedlings. Water, oxygen, light, and heat are the four environmental components that influence germination.

#### Water

The imbibition or absorption of water is the first step in the germination process. Despite the fact that seeds have a high absorption capacity due to the nature of their seed coat, the amount of available water in the substrate has an impact on water uptake. It's critical to have a steady supply of water to enable germination. A dry interval after the germination process has begun can result in the embryo's mortality.

#### Light

Some forms of seed are known to be stimulated or inhibited by light. The light reaction at hand is a complicated one. Ageratum, begonia, browallia, impatiens, lettuce, and petunia are some of the crops that require light to help seed germination.

#### Oxygen

Respiration occurs in every fertile seed. Although dormant seed respiration is modest, some oxygen is necessary. Because the rate of germination increases the rate of respiration, the substrate in which the seeds are planted should be loose and well-aerated. Germination can be substantially slowed or impeded if the oxygen supply during germination is limited or diminished.

#### Temperature

Another crucial prerequisite for germination is a warm

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environment. It has an impact not only on germination percentage but also on germination rate. Some seeds germinate in a wide range of temperatures, while others require a specific temperature range. It's also crucial to remember that the required temperatures must be maintained at all times of the day. There is fear that future agricultural output in emerging countries would pose environmental risks, as production will need to

increase to meet rising food demand. Important portions of these inputs are lost to the atmosphere as nutrient leaching into groundwater and gaseous losses. Growing demand for productive land and degradation of the current agricultural land base may put additional strain on existing agricultural land. Agriculture expansion almost always results in enormous deforestation.