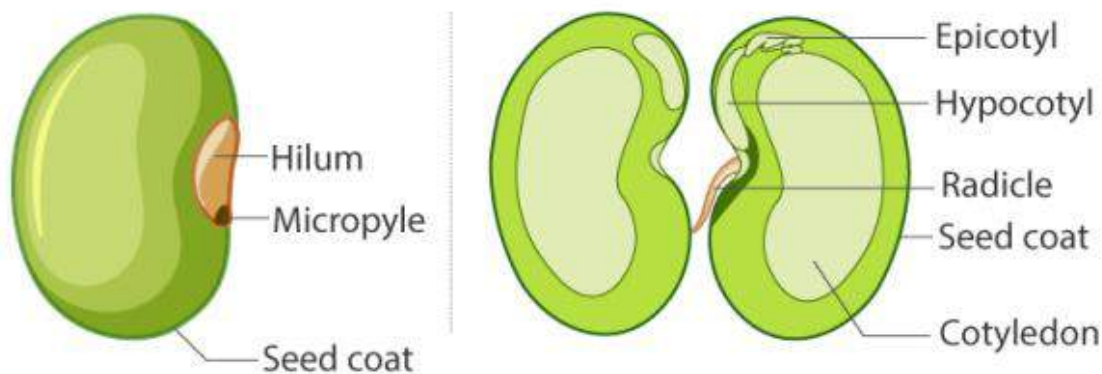


## Seed Technology

Seed technology is the methods through which the genetic and physical characteristics of seeds could be improved. It involves such activities as variety development, evaluation and release, seed production, processing, storage and certification.



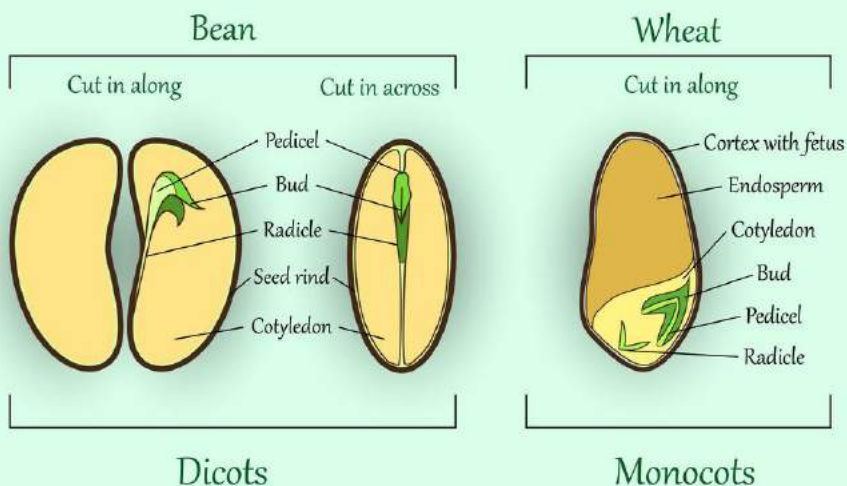
### Types of seeds according to number of cotyledons:

There are two types of seeds

**A) Monocotyledonous seeds:** These seeds contain only one cotyledon for e.g. - Wheat, Bajra, maize and rice

**B) Dicotyledonous seeds:** These seeds contain two cotyledons for e.g. Mango, Gram and pea.

### The structure of the seed in dicots and monocots





### Monocotyledon vs Dicotyledon

Monocotyledon	Dicotyledon
The monocot embryos have a single cotyledon	The dicot embryos have a pair of cotyledons
They have a fibrous root system	They have a tap root system
Leaves in monocots have parallel venation	Leaves in dicots have reticulate or net venation
In monocot flowers, the count of parts of the flower is a multiple of three or equal to three	The count of parts in a dicot flower is a multiple of four or five or equal to four or five
The roots and stems of Monocotyledons do not possess a cambium and cannot increase in diameter	The roots and stems of Dicotyledons possess a cambium and have the ability to increase in diameter
A few examples of monocotyledons are garlic, onions, wheat, corn and grass	A few examples of dicots are beans, cauliflower, apples and pear

### Characteristics of good quality seed:

#### 1. Higher genetically purity:

- Breeder/ Nucleus Seed -100%
- Foundation Seed -99.5 %
- Certified Seed - 99.0%

#### 2. Higher physical purity for certification:

- Maize, Bhendi - 99%
- All crops -98%
- Carrot-95%
- Sesame, Soybean & Jute - 97 %
- Groundnut - 96%

#### 3. Optimum moisture content for storage:

- Long term storage: 6-8%
- Short term storage: 10-13%
- Dried to the safe storage moisture level of 10-12 % for cereals and 7-9% for oil seeds (on wet basis) for a safe storage period of 6-12 months.

#### 4. Objectionable Weeds of Seed Crop Plants



Crop	Objectionable weeds
Berseem	Chicory( <i>Chicorum intybus</i> )
Cucurbits	Wild Cucurbita sp.
Kasuri methi	Melilous sp.
Lettuce	Wild lettuce( <i>Lactuca sativa</i> )
Bhendi	Wild <i>Abelmoschus</i> sp
Rape & Mustard	<i>Argemone mexicana</i>
Wheat	<i>Convolvulus arvensis</i> (Hiran kuri)
Paddy	Wild paddy ( <i>Oryza sativa</i> var. <i>Fatua</i> )

**5. Should be free from designated diseases:**

E.g. loose smut of wheat - For this the certification distance has been prescribed as 180 meters

Other

6. High vigour
7. Higher field establishment
8. Good shape, size, colour etc., according to the specification of variety
9. High longevity / shelf life.
10. High market value

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