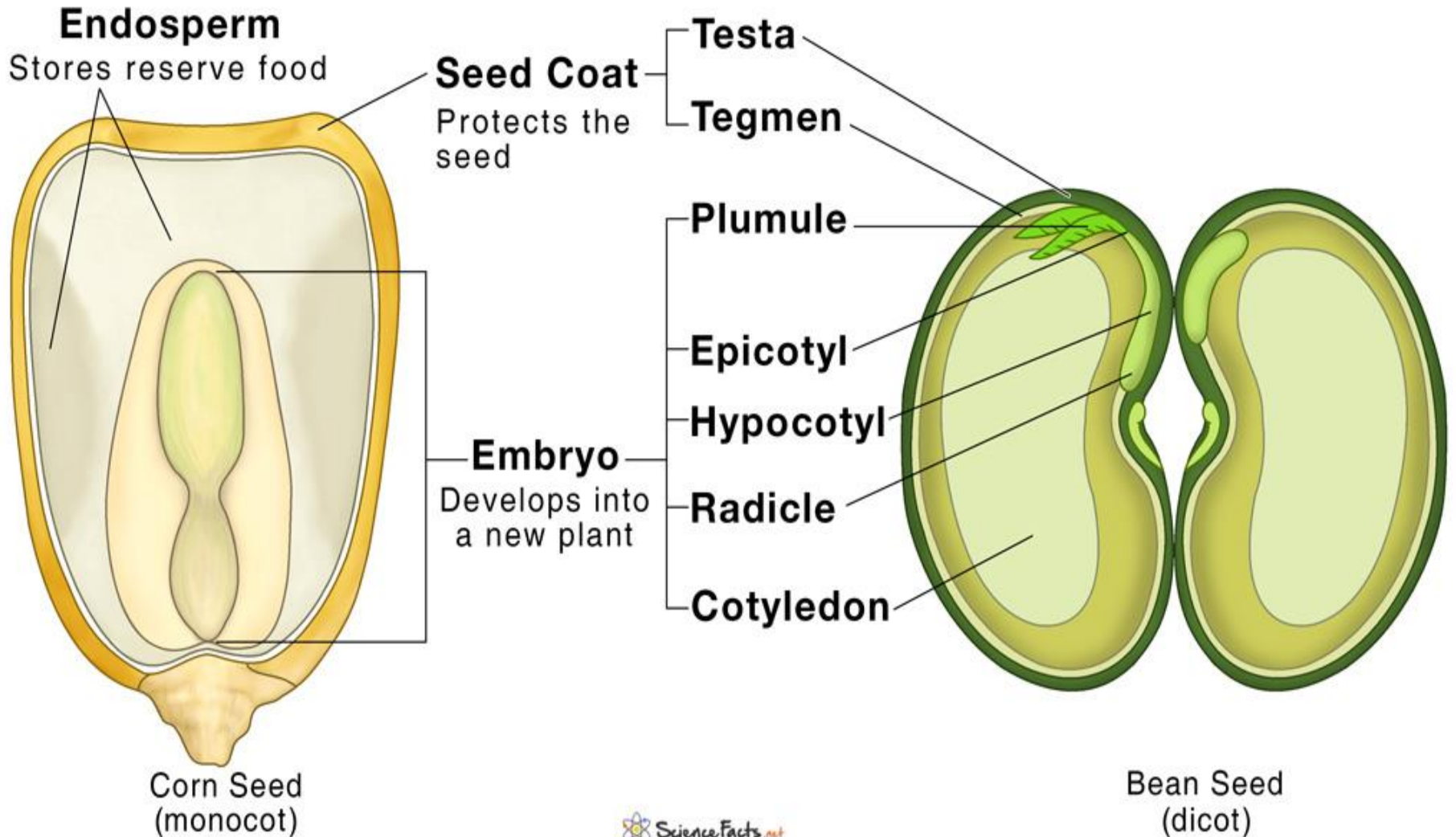


# SEED QUALITY



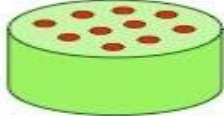
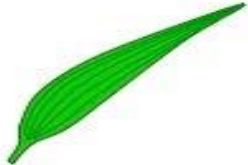


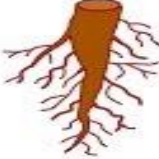
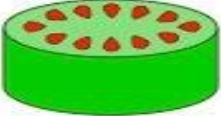


- Seed is a basic input in agriculture
- It is a fertilized matured ovule containing embryo embedded in the food storage tissue surrounded by a protective coat
- Any part (or) organ of plant which has the capability to regenerate into a new plant
- Any propagative material

# Parts of a Seed with Functions



# SEED TYPE

| Monocots                           | Dicots                                    |
|------------------------------------|---|
| Embryo with single cotyledon       | Embryo with two cotyledons                |
| Pollen with single furrow or pore  | Pollen with three furrows or pores        |
| Flower parts in multiples of three | Flower parts in multiples of four or five |
| Major leaf veins parallel          | Major leaf veins reticulated              |
| Roots are adventitious             | Roots develop from radicle                |
| Secondary growth absent            | Secondary growth often present            |

|                | Seed  | Root  | Vascular  | Leaf  | Flower  |
|----------------|---|---|---|---|---|
| <b>Monocot</b> |   |   |   |   |   |
|                | One cotyledon   | Fibrous roots   | Scattered   | Parallel veins  | Multiples of 3  |
| <b>Dicot</b>   |  |  |  |  |  |
|                | Two cotyledon   | Tap roots   | Ringed  | Net-like veins  | 4 or 5  |

# ROLE OF SEED TECHNOLOGY

- ❖ A carrier of new technologies
- ❖ A basic tool for secured food supply
- ❖ The principal means to secure crop yields in less favorable production areas
- ❖ A medium for rapid rehabilitation of agriculture in cases of natural disaster:

The establishment of National Seed Reserve Stocks should receive high priority for meeting natural calamities for rapid production of food grains

# GOALS OF SEED TECHNOLOGY

1. Rapid multiplication of popular varieties.
2. Timely supply of improves seeds/Propagules in time and space.
3. Assurance of high quality seeds.
4. Availability of seeds at a reasonable price



# Seed Quality

- Seed quality is the sum of all properties contributing to seed performance. The quality of seed can decide whether a farmer's crop will be good, bad or indifferent.
- Seed quality is determined by the following characteristics:
  1. Physical Attributes
  2. Physiological Attributes
  3. Genetic Attributes
  4. Storability



# Seed Quality

## 1. Physical Attributes

- A minimum of damaged seed
- A minimal amount of weed seed or inert matter
- A minimum of diseased seed
- Near uniform seed size

## 2. Physiological Attributes

- **Germination Percentage or Viability**

The germination percentage or viability is an indicator of the seed's ability to emerge from the soil to produce a plant in the field under normal conditions

- **Seed Vigour**

Seed vigour is the capacity of seed to emerge from the soil and survive under potentially stressful field conditions and to grow rapidly under favourable conditions

# Seed Quality

## **3. Genetic Attributes**

- Seed of the same variety
- Adapted to the local conditions
- Pest and disease tolerance
- High yielding ability

## **4. Storability**

- Moisture content
- Temperature of the environment
- Seed treatment



# CRITERIA OF QUALITY SEED

- ▶ 1. They are **genetically pure** (true to type).
- ▶ 2. The good quality seed has **high return per unit area** as the genetic potentiality of the crop can be fully exploited.
- ▶ 3. Less infestation of land with weed seed/other crop seeds.
- ▶ 4. **Less disease and insect** problem.
- ▶ 5. Minimization of **seed/seedling rate** i.e., fast and uniform emergence of seedling.
- ▶ 6. They are **vigorous, free from pests and disease**.
- ▶ 7. They can be adopted themselves for **extreme climatic condition** and cropping system of the location.