

# SEED

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**-the first basic agri-input**



# Reproduction is the Goal of Plant

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- A plant is a living material and its ultimate goal is the multiplication of the parent material. It is done through one or another part of the body.

There are several parts of the plant which act as the “Seed”.

- Matured and fertilized ovule turns into seed example maize and rice.



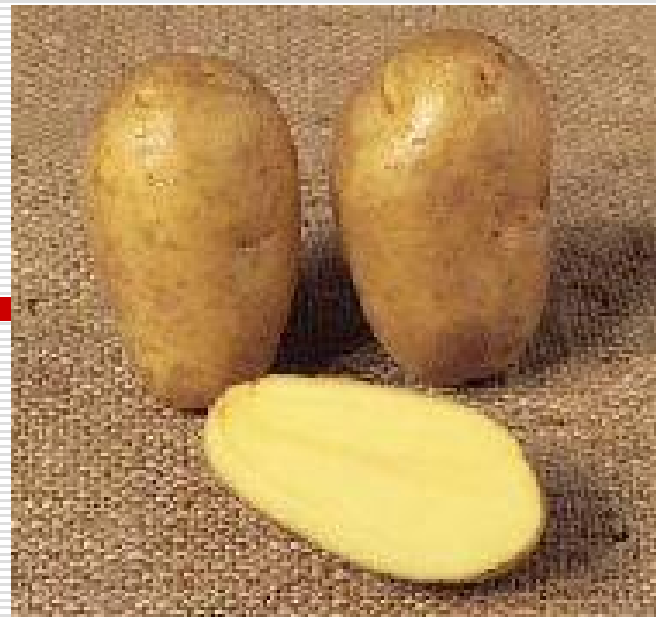
- A part of the stem can grow into a plant, example cassava and sugarcane.



- An underground stem, that grows horizontally and sends up leaves and flowers, can grow into a plant, example ginger and certain flowers.



- A tuber or underground stem, acts as seed, example potato and yam, etc.



- Some plants grow small offshoots from the lower part of the plant. Which grow into new plant, example pineapples, plantains and bananas.



# Importance of Seeds

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## **“You Reap what You Sow”**

- Seed is the starting point in crop production.**
- Seed is the most important inputs.**
- Seed carry a specific genetic potential**
- Farmer can increase yield up to limit of seed potential.**

# Importance of seed

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- Agri - inputs and proper farm practices, help to exploit the genetic potential of the seed.**
- Seed is living matter and can deteriorate if not handled and stored properly.**

# Types of Seed

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**Seed is produced mostly by transfer of pollen (male parts) to female parts of the flower and is called-Pollination.**

**It is carried out by wind, insect, birds, or other natural agents.**

## **Open-pollinated Varieties (OPV) seed**

- 1. An open – pollinated Variety seed is one in which pollination is carried out from either the same (parent) plant.**

# Self-pollinated Crops seed

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Those plants that pollinate themselves by accepting pollen from within their own flower before it opens.

The seed saved from both an open and self-pollinated variety can be used for planting in a few subsequent years on.



# Hybrid seeds

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**Hybrid seeds are produced through a controlled cross pollination of one specific variety of a class of plant with the pollen of another genetically different variety of that class.**

# Genetically-Modified Organisms (GM or GMO) seeds

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**Genetic modification is the transfer of specific genes into the plant in a laboratory.**

**The genes introduced in the plants include the capability and characteristics of the species of plants, bacteria, or animals that have been transferred from external sources**

# Genetically-Modified Organisms (GM or GMO) seeds

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**GM Seeds resist the attacks from certain insects**

**Genes are inherited by the progeny as if they belonged to the parent plant**

**Examples maize, Soya and cotton.**

# Hybrid Seeds

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**High crop yield**

**Better response to fertilizer**

**Better resistance to disease**

**Better gross margins**

**More expensive seed**

**Farmer grown seed not recommended**

**F 1 generation seed should only be planted**

# OPV SEEDS

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**Low yield potential**

**Low response to fertilizer**

**Low resistance to diseases**

**Less expensive seed**

**FSS not recommended to seed deterioration**

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# Facts About Farmers Saved Seeds

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**Most farmers have a tendency to save their own seed for economic reasons.**

**1 This should only be self or open-pollinated varieties.**

**2 Seed is not well cleaned and treated, which lead to problems with weeds, plant diseases, and consequently low yields.**

## Facts About Farmers Saved Seeds (FSS)

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3. Farmers continue to use their own saved seed for many years; the seeds get mixed from crossing with surrounding inferior varieties or become susceptible to diseases.
4. Seed renewal is therefore critical every 3-4 years, if the farmer is to continue profitable farming.

# Stages in Development of Improved Seed

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- 1 Breeder Seed** - Breeder seed is the initial seed produced by the breeders under controlled conditions
- 2 Pre-Basic or Foundation Seed** - Progeny of the breeder seed produced under the supervision of the breeder



# Stages in development of improved seeds

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**3. Basic or Registered Seed-Registered seed produced under the supervision of a breeder/ designated agency under the control of a seed quality control agency.**

**4 Certified Seed-Produced by contract growers, from the registered seed and Inspected by seed quality control agency**

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# Seed processing

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## Drying-

Seed received from farmer's field is dried to required moisture content.

## Cleaning

All foreign material should be removed by sieving, winnowing and other methods.

# Seed Processing

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**Seed Treatment-** seed must be treated to protect it during storage and also in the initial stages after planting

Seed is treated with fungicides and insecticides for protection.

**Bagging or Packaging-**The seed should be packaged in bags and Labeled, providing necessary information.

# Seed Packaging & Labeling

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**It is mandatory, to pack and label the certified seeds and the label should carry the following information:**

- Name of the species and variety.**
  - Lot number and name of producer.**
  - Purity or the percentage by weight of the named species.**
  - Percentage by weight of foreign material- this must be very low or zero.**
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# Seed packaging & labeling

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- % by weight of non-seed matter.
- % by weight of weeds
- Germination percentage.
- Net weight of bag or container.
- Date when material tested.
- Origin or where the seed was grown.
- Treated seed-especially when the chemical used is toxic.

*Example of a seed tag*  
**Mexipak Wheat**

<b>Lot Number: 31 W-ET</b>	<b>Germination: 98%</b>
<b>Purity: 99%</b>	<b>Net Weight: 50 kgs</b>
<b>Other Crop: 00.04%</b>	<b>Date: 01/17</b>
<b>Inert: 00.05%</b>	<b>Origion: Mbale</b>
<b>Weeds: 00.01%</b>	<b>Treated Seed – Do not use for food</b>
<b>Produce d by: Seedco</b>	

# Handling & Storage of seed

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**Seed is living matter and if not handled and stored properly seeds “die” .**

**The main reasons for seed deterioration are as follow:**

- High temperature in the seed store
- High humidity in the storage area.

# Handling & storage of seed

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- High moisture content of the seed itself.
- Storage in improper packaging that cannot prevent moisture from entering the package.



# Handling & storage of Seed

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- Use of incorrect chemicals for seed treatment.
- Seed bags should not be thrown carelessly.
- Storage of un-cleaned and untreated seed.
- Presence of pests and diseases.

# Handling & storage of seed

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- Seed bags should be stored in dry, well-ventilated stores.
- Always use dunnage -wooden pallets or PVC sheets spread on floor.
- Extreme temperature (too hot or too cold) can lead to serious seed damage.
- Recommended moisture contents for seed storage is 12%.

# Handling & Storage of Seed

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- High humidity in the store can lead to serious seed damage through mold formation.
  - High humidity also encouraged growth of insects and pests in the store.
  - Avoid storage of seeds together with chemicals, especially those that emit vapors.
  - Avoid the sale of seed from open bags or containers.
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