

Generation System of Seed Multiplication

Seed is the cheapest and basic input for sustained agricultural production. At the time of release of a variety, small quantity of seed normally known as nucleus seed is available with the plant breeder. Commercial quantity of seed is produced after a series of multiplication steps. Starting from maintenance programme in which nucleus seed is multiplied in a generation system of multiplication as breeder, foundation and certified seed.

a. Three - Generation model

Breeder seed - Foundation seed - Certified seed

b. Four - Generation model

Breeder seed - Foundation seed (I) Foundation seed (II) - Certified seed

c. Five - Generation model

Breeder seed - Foundation seed (I)- Foundation seed (II) -Certified seed (I) - Certified seed (II)

Breeder seed: The progeny of nucleus seed multiplied in large area as per indent of Department of Agriculture and Cooperation (DOAC), Ministry of Agriculture, Government of India, under supervision of plant breeder / institute / SAUs and monitored by a committee consisting of the representatives of state seed certification agency, national / state seed corporations, ICAR nominee and concerned breeder. This is also hundred percent physical and genetic pure seed for production of foundation seed. A golden yellow colour certificate is issued for this category of seed by the producing breeder.

Foundation seed: Foundation seed is the progeny of breeder seed and is produced by State Farm Corporation of India, National Seed Corporation, State seed Corporation under technical control of qualified plant breeders or technical officers. Its production is supervised and approved by certification agency. The genetic purity of foundation seed should be maintained at 99.5 per cent. A white colour certificate is issued for foundation seed by seed certification agencies.

Certified seed: Certified seed is the progeny of foundation seed and its production is supervised and approved by certification agency. The seed of this class is normally produced by the State and National Seeds Corporation and Private Seed companies on the farms of progressive growers. This is the commercial seed which is available to the

farmers and its genetic purity should be 99 per cent. A blue colour certificate is issued by seed certification agency for this category of seed.

Other categories of seed

Truthfully labeled seed (TL): When a seed is sold based on the result of the laboratory established by the producer then the seed is considered as TL seed e.g., seed produced and sold by many private agencies. In government sector, many times seed is not able to fulfill seed certification standard for any one parameter, marginally. This seed may be sold by making correction (increase the quantity/ bag if germination percentage is low) after getting certification by the authorized Seed Certification Agency. The price of TL seed is always lower than the certified seed in government sector. Seed rejected due to genetic impurity or presence of objectionable disease, pest or weed is not labeled as truthful. Many times some government organizations sell the seed of high standard as TL seed with their own trade name for seed to make variety popular.

Registered seed: Registered seed shall be the progeny of foundation seed that is so handled as to maintain its genetic identity and purity according to standard specified for the particular crop being certified. A purple colour certificate is issued for this category of seed.

Difference between certified seed and truthful labeled seed

Certified Seed	Truthful labeled Seed
Certification is voluntary	Truthful labeling is compulsory for notified kind of varieties
Applicable to notified kinds only	Applicable to both notified and released varieties
It should satisfy both minimum field and seed standards	Tested for physical purity and germination
Seed certification officer, seed inspectors can take samples for inspection	Seed inspectors alone can take samples for checking the seed quality.

LABELLING OF BREEDER SEED

Breeder seed shall be supplied in sealed containers, duly stitched and sealed. A cloth-lined label of 12 cm x 6 cm containing following information shall be fixed on the container.

	Label No.
Crop	
Variety	
Class of seed	
Lot No.	Breeder seed
Date of test	
*Pure seed	%
*Inert matter	%
*Germination	%
**Oil content	%
Producing Institution (name and address)	

*Based on actual.

**It shall be applicable for sunflower crop only.

‘The container should also have printed on it and the kind, variety and name of Institution’

2. The label shall be rubber-stamped with signature, name and designation of the concerned breeder. Colour of the label shall be Golden Yellow No. 356 (IS:5-1978)

3. Every breeder/breeding institute shall maintain the account of labels printed and issued.

SPECIFICATION FOR CERTIFICATION TAG

Length : 15 cm
Breadth: 7.5 cm

Quality---it shall be made of durable material such as thick paper, paper with cloth lining, wax coated paper, plastic coated paper or any other material which is durable in nature and water and tear resistant.

Colour—Both sides shall be white for Foundation class and blue (ISI No.104-Azure blue) for Certified class.

Contents and layout

TAG No.....	CA's	Certified Seed
KIND.....	EMBLEM	Class of seed.....
		Certificate No.....
		Date of issue of
Variety.....	Name & Address of	Certificate.....
	Certification	Date of test.....
Lot No.....	Agency	
"Use of the seed after expiry of the validity period by any person is entirely at his risk and the holder of the certificate shall not be responsible for any damage to the buyer of seed. No one should purchase the seed if seal or the certification tag has been tampered with"		Certificate valid up to..... (Provided seed is stored under cool and dry environment)
		Validity of certificate further extended upto
Name and Full Address of the Certified Seed	
Producer.....		

N.B. If tag is to be affixed on a smaller container then the size of the tag may be reduced proportionately. However, length and breadth ratio and contents would remain the same.
(CA's : Certification Agency's)

Nucleus Seed:-

It is the initial amount of pure seed of improved variety or parental lines of a hybrid produced under supervision of the plant breeder who has evolved that variety or hybrid. The nucleus seed is genetically cent percent pure and does not contain other physical impurities. The nucleus seed is produced strictly under isolation so as to avoid both genetically and physical contamination. Nucleus seed should retain original vigour of the variety or parental line.