

Experiment no. 1: Seed certification

Aim: To study the classes of seeds and the procedure of seed certification

Classes of Seeds

Four main classes of seeds are defined by the Association of Official Seed Certification Agency. They are:

1. Nucleus Seeds
2. Breeder Seeds
3. Foundation Seeds
4. Certified Seeds

Seed Certification Procedures

The Seed Certification Department is the legally authorized body to manage the production, multiplication and monitoring of the seed quality. As per the Seed Act 1966, seed certification is voluntary. Seeds which are certified by the Seed Certification Agency are called certified seeds, which passes through both the field and seed standards as specified by the certification body. Seed standards are specified and uniform throughout the country, whereas the seed certification procedures and fee vary from one State to another State. The details mentioned in the following pages pertain to the State of Tamil Nadu. It may slightly vary in other States.

Aim of the Seed Certification Department

Producing high quality seeds of the crop varieties that are notified by the Central and State Governments and make them available to the farmers is the prime aim of the Seed Certification Department.

Steps Involved in Seed Certification

1. Application for seed production
2. Registration of sowing report
3. Field inspection
4. Seed processing
5. Seed sample and seed analysis
6. Tagging and sealing

1. Application for seed production

Any person who wants to take up certified seed production should submit a sowing report in triplicate to the Assistant Director of Seed Certification to register the crop and season with a registration fee of Rs. 25/- (Rupees twenty five only) and prescribed certification charges. The fee is for a single crop variety for an area up to 25 acres and for a single season. Along with this fee for seed certification the label of the seed source should be submitted. Separate sowing reports are required for different crop varieties, different classes, and different stages. Separate sowing reports are required to be registered for the same crop variety if the seed production fields are separated by more than 50meters, sowing or planting dates differ by more than 7 days and if the seed farm area exceeds 25 acres. The sowing report should reach the concerned Assistant Director of Seed Certification within 35 days from the date of sowing or 15 days before flowering whichever is earlier. In the case of transplanted crop the sowing report should be sent 15 days before flowering.

2. Registration of sowing report After receiving the application of the sowing report, the Assistant Director of Seed Certification scrutinizes and registers the seed farm and duly assigns a Seed certification number for each sowing report.

3. Field Inspection

The objective of the field inspection is to check for the factors that may affect the genetic purity and physical health of the seeds. Field inspection will be conducted by the Seed Certification Officer (SCO) to whom the specific seed farm has been allocated. The specific date of inspection and details of the seed farm will be intimated by the Seed Certification Officer through a copy of the sowing report sent to him. Number of field inspections will differ from crop to crop depending upon the growth stages of the crop. Generally field inspections would be carried out during the following growth stages of the crop.

- Pre flowering stage
- Flowering stage
- Post flowering and Pre harvest stage
- Harvest time

For each crop at least two field inspections should be conducted. Apart from the assigned field inspections, the Seed Certification Officer can visit the seed farm at any time during the crop growth stage. Two field inspections in a same seed farm are not allowed in a same day.

Re-inspection should be done to confirm that the shortcomings found during the first inspection have been solved.

The following things are normally checked during field inspection.

a. Inspection during pre-flowering stage

- Verification of the location and area of the seed farm in the farm map as shown in the sowing report.
- Verification of the seed source.
- Verification of the acreage of the seed farm.
- Verification of the uniform planting ratio and border rows.
- Verification of the isolation distance as specified.
- Also guide the grower in identifying and removal of off-types.
- Check for proper rouging.

b. Inspection during flowering stage

- Ensuring maintenance of isolation distance.
- Confirming the removal of off-types and proper rouging

c. Inspection during post flowering / pre harvest stage

- Confirming that the findings made in the previous inspections are taken care of.
- Explaining to the grower about when and how to harvest the seed crop.

d. Inspection during harvest stage

- Verification of the maturity of the crop.
- Guiding the grower in processing and handling techniques.

Other Steps in field inspection

Uninformed field inspection should be conducted during the flowering stage for all the crops other than the self-pollinated crops. The complete details of the seed certification programme should be explained to the farmer if he / she is new to the seed certification programme. The grower/producer should accompany the Officer during the field inspection. The details of the field inspection report should be explained to the producer of the seeds. The inspector should inspect the entire stretch of the field without any bias. The details of remedial actions that have to be implemented and the time limit for the same should also be mentioned in the inspection report. In the inspection report, the seed certification officer will record the rough sketch of the seed farm with boundaries and directions.

Rejection of the seed field

The seed production fields, which do not conform to the required standards for any of the following factors will be rejected.

- When the size of the seed farm exceeds the registered size
- When there is no cultivation of the crop in the registered seed farm
- Drying of the seed farm due to water scarcity
- Inability to carry out the minimum number of field inspections
- Lodging of the crop in one third of the seed farm
- Seed crop affected by flood or very poor crop management
- Difference found in the seed farm when compared with the sowing report
- Not allowing the Seed Certification Officer to take the count

Seed processing

Once the seeds are harvested from the seed farm by following the required field standards, it should be taken to the processing plant. Processing should be done only in the approved seed processing units. Each seed lot should accompany the processing report and each seed lot in the unit is verified with this report. Processing includes cleaning, drying, grading, treating and other operations to improve the seed quality. Seed Certification Officer will inspect the processing plant to check the possibility of mechanical mixtures. The seed lot should correlate with the estimated yield. Seed lots should have prescribed moisture level with proper labelling. In case of paddy, float test (Take 400 numbers of seeds from the processed seed and put it into a tumbler of water and count the number of floating paddy seeds. Maximum float admissible is 5%, If it exceeds the limit, airflow is adjusted in the processing machine has to be conducted in order to test the quality of processing. In the processing plant the seed lots should be processed within three months from the date of delivery. In case of delay in processing, permission should be obtained from the Assistant Director of Seed Certification. Processed seeds should be properly weighed, bagged, sealed and labelled. Assigning lot numbers is done at this stage as below: E.g. Apr 13-22-10-01 It means,

APR 13 represents seed harvested in April'13.

22 – seed crop raised in Tamil Nadu State.

10 – seed processing unit number

01 – seed produce code

Processing label includes the details of the S.C. No., kind, variety, class of seed, lot number, date of sampling, quantity in kgs, number of bag/total numbers of bags along with the signature of the Seed Certification Officer.

4. Seed sampling and analysis

Seed sample should be sent to the seed testing laboratory for analysis through the Assistant Director of Seed Certification. The fee of Rs.30/-(Rupees thirty only) for seed analysis should be paid during the registration of the seed farm. To analyse the genetic purity of the seed sample, the producer should pay a fee of Rs. 200/- (Rupees two hundred only) to the Assistant Director of Seed Certification. Seed lots which meet the prescribed seed standards like purity, free of inert matter, moisture percentage and germination capacity alone will be allotted the certification label. White colour label for foundation seeds and blue colour label for certified seeds should be bought from the Assistant Director of Seed Certification

5. Tagging

Approved seed lots should be tagged with certification tag within two months from the date of the receipt of seed analysis report or within 30 days from the date of genetic purity test performed. On receipt of the seed tags, it is verified by the Seed Certification Officer. All the prescribed details are entered in the tag without any omission. The green colour (10 – 15 cm size) producer tag should also be attached to the seed lot along with the certification tag. Avoid stitching more than once on the tags. All the tagging operations should be done in the presence of the Seed Certification Officer.

Validity period

The certified tagged seed is valid only for a limited period of time, say nine months from the date of seed sample testing for all seed crops. If the particular seed lot is not sold out within this period, revalidation of additional six months can be made only if the seed lot meets out necessary seed standards.

Certification of seeds as organic

A prerequisite for farmers following organic cultivation methods is that they should use organically certified seeds in their farms .However, certified organic seeds are not commonly available in the markets. To overcome this situation, certified organic farmers could take up the production of quality certified organic seeds in consultation with the Department of Seed Certification and an Organic Certifying Agency.Farmers should follow all the organic certification standards according to the National Programme for Organic Production (NPOP) in addition to the seed certification standards for the production of certified organic seeds. For the production of such seeds, farmers have to register their land with any of the accredited organic certification bodies in India and also the seed crop with the Department or Board of Seed Certification in the respective State.

Precautions to be followed while procuring seeds

Seeds should be procured / purchased only from the authorized outlets. Check the following details in the producer label on the packet.

- Label No.
- Crop
- Variety
- Lot number
- Inspected date, month and year
- Expiry date, month and year
- Germination percentage (minimum)
- Physical purity (minimum)

- Genetic purity (minimum)
- Net weight
- Organic certification logo
- Organic seed producer label.
- Name and address of the producer who offers for sale, sells or suppliers.

Collect the receipt from the dealer with the details of the seeds purchased and retain the same along with the seed packet till the crops are harvested/ sold.