

**Seed Certification:** It can be regarded as a legally sanctioned system for quality control for seed multiplication and production and it consists of 3 control measures in 3 general area: (i) Field (2) Pre and post control plot (3) Laboratory test for seed quality

### **Purposes of seed certification**

- Is to maintain and make available to the public high quality seeds and propagating materials of superior crop or plant varieties grown and distributed as to ensure genetic and varietal purity
- Is to maintain a reasonable seed quality standard
- Protection against foreign pollen.
- Isolation distances
- Deterioration of seed stocks.

### **Lecture 6. Deterioration of seed stocks may arise from:-**

- (a) Cross pollination
- (b) Substituting one cultivar for another due to wrong labelling
- (c) Poor viability status
- (d) Genetic shift, etc.

### **Lecture 7. Contract Growing of Seeds**

Contract – growing, philosophy, principles and application. Contract growing of seed is encouraged where the seed needed is in enormous quantity and shortage of land, equipment,

personnel and other resources make it impracticable for seed companies/government agencies e.g National Seed Service (NSS). Farmers enter into contractual agreements with the seed company, sometimes with legal transactions. The quantity and quality must be guaranteed. Processing of harvested seed could be made in the premises of the farmer or in the seed processing depot of the seed company. In principle, difficult or new varieties are given as contract only to experienced farmers who have the experience and the facility to cope with them. There is usually freedom of entry/exit from the contract. The contract document is signed by both parties.

### **Practicals**

Seed dormancy breaking techniques:

Depending on the type of dormancy, methods for breaking dormancy in the laboratory/field would include:-

**(i) Hard seed coat dormancy** – Scarification, rubbing on abrasive surface or in the laboration, rubbing seed on sand paper.

**(ii) Embryo immaturity:** Time factor is important here. Importance and definition of after- ripening stressed here.

Note: During after – ripening, it is discovered that chemical/physical changes do occur within the seed or seed coat; composition of storage material may alter, germination promoters may appear while inhibitory ones disappear, embryo may also complete its growth.

**(iii) Temperature requirements:** Stratification defined, during which a number of changes occur e.g. embro growth may be completed, Application of GA3 replaces chilling requirement; also some seeds require alternating temperature to break their dormancy.

- For light – requiring seeds and use of coumarine in inducing/replacing light requirements etc.

- Germination inhibitors e.g Cyanide, Flouride Azide, etc should be demonstrated. ABA, Coumarin are also popular.

Growth regulators promoting germinators include:-

- $KNO_3$ ,  $H_2O_2$ , Thiourea, Gibberellins, Auxins (IAA), Cytokinnins, Ethylene etc.

- Application of Pesticides to seeds – their implications on undried seed stressed.

Visits to commercial seed processing companies: National Seed Service (now National Seed Council in Abuja), MANR, Asero, Abeokuta.