

6th SEMESTER
AGRICULTURE TECHNOLOGY
(SEED PRODUCTION AND PROCESSING)
SKILL ENHANCEMENT COURSE (SEC)

SPP620S: SEED PRODUCTION AND PROCESSING -III: SEED PROCESSING AND STORAGE

CREDITS: THEORY: 2, PRACTICAL: 2
MAX MARKS: THEORY: 30, PRACTICAL: 30
MIN MARKS: THEORY: 12, PRACTICAL: 12

Objectives: *To acquaint the students about the methods of storage and marketing of seeds*

THEORY (2 CREDITS)

UNIT I

Seed Dormancy, its types and mechanism Principles of seed processing; methods of seed drying. Relative humidity and equilibrium moisture content of seed. Seed treatments- methods of seed treatment, Seed treating formulations and equipments. Seed cleaning equipment and their functions, Preparing seed for processing; functions of scalprl debearder, scarifier, huller, seed cleaner and grader. Screen cleaners, specific gravity separator, indented cylinder, velvet-spiral-disc separators, colour sorter, delinting machines; seed blending.

UNIT II

Seed packaging principles, practices and materials; bagging and labeling. Seed storage, storage types with relation to the time, moisture and humidity. Cryopreservation. Methods to minimize the loss of seed vigor and viability; factors influencing storage losses. Storage methods and godown sanitation. Storage structures. Storage problems of recalcitrant and orthodox seeds and their conservation. Basic concepts in seed marketing, seed supply and demand.

PRACTICALS (2 CREDITS)

- Operation and handling of mechanical drying equipments.
- Effect of drying temperature and duration on seed germination and storability with particular reference to oil seeds and vegetable seeds.
- Operation of seed processing and seed treating equipments.
- Germination Testing (Paper, Sand and Soil Method).
- Seed vigour testing by physical method Viability test-tetrazolium test
- Determination of Seed moisture test and Physical purity analysis.
- Seed health test, Detection of important seed borne disease-major detection methods of major field crops using conventional methods.
- Seed health test, Detection of important seed borne insects.
- Visit to the Seed Research farms and Seed Testing Laboratory.
- Visits to Seed processing unit, stores, go downs and seed packing units

SUGGESTED READINGS:

1. Agrawal, P.K. & M. Dadlani, 1995. Techniques In Seed Science And Technology (2nd Ed.) South Asian Publ. New Delhi.
2. Agarwal RL. 1997. Seed Technology (IInd Ed.) Oxford & IBH Publ. Co. Daryaganj, New Delhi.
3. Baill R Gregg, Alvin, G. Law, S.S. Virde and Balis, J.S. Seed Processing. Cooperatively published by NSC, New Delhi and Mississippi State University and UNSAID.
4. Barton LV. 1985. Seed Preservation and Longevity. International Books and Periodicals
5. Supply Service, New Delhi.
6. Chakravarty, A. Post-Harvest Technology of Cereals, Pulses and Oil Seeds.
7. Copeland, R.A. 1996. Enzymes: A Practical Introduction to Structure, Mechanism, and Data
8. Analysis. VCH Publishers, New York.
9. Desai, B.B., Kotecha, PM and Salunkhe, D.K. 1997. Seeds Handbook. Marcel Decker Inc., New