

## 6<sup>th</sup> SEMESTER

### SKILL ENHANCEMENT COURSE (BOTANY)

#### BO617S: SEED TECHNOLOGY -II

CREDITS: THEORY-2, PRACTICALS-2

#### THEORY (2 CREDITS)

##### UNIT 1: SEED PATHOLOGY AND ENTOMOLOGY

- Introduction and importance of seed pathology; Brief account of seed borne fungi, bacteria, viruses and nematodes (any two examples of each group); mechanism of seed infection and transmission of seed pathogens; Influence of environmental factors on seed borne diseases; Methods of seed crop management.
- Introduction to seed entomology; economic importance and losses caused by insects.
- Study of insect, their nature of damage and management of following crops:  
Paddy – *Grasshopper*  
Maize – *Army worm*  
Pea – *Pea pod borer*  
Cabbage – *Caterpillar*  
Tomato – *Leaf minor*
- Methods of insect pest control (cultural, mechanical, physical and chemical).

##### UNIT 2: SEED FARM MANAGEMENT AND MARKETTING

- Scope, basic principles in seed farm management. Concept of various production practices, field practices as tillage, green house, irrigation, sowing, plant protection, harvesting and threshing; maintenance of soil fertility, weeds and their control.
- Concept of crop rotation; mixed cropping, multiple cropping and dry land farming.
- Basic concepts of marketing; supply and demand; Seed market surveys; seed industry in relation to global market; concept of WTO (World Trade Organization); Seed Quarantine: introduction, objectives and importance.

#### PRACTICAL WORK (2 CREDITS):

1. Detection of fungal/bacterial pathogens of some common crop seeds by visual/stereoscopic microscopic examinations and or washing techniques.
2. Detection of seed borne fungi of some common crops (Maize, Soybean) by any incubation method.
3. Study the morphological; features of seed insects and their mouth parts (grasshopper, leaf minor).
4. Study the garden soil characteristics (pH, bulk density, water holding capacity) by any method.
5. Study some common weeds of crop plants and crop seed nurseries.
6. Description and chemical formula of some recommended seed fungicides and insecticides using charts/photographs.
7. Study some common seed borne viruses and their symptoms from electron micrographs/photographs.

#### SUGGESTED READINGS:

1. Agarwal VK & Sinclair JB. 1997. *Principles of Seed Pathology*. Boca Raton.
2. Neergaard P. 1988. *Seed Pathology*. Mac Millan.
3. Kohls RL & Uhl JN. 1980. *Marketing of Agricultural products*. Mac Millan.
4. Karuna V. 2007. *Seed Health Testing*. Kalyani.
5. Kundu KK & Suhag KS. 2006. Teaching Manual on Seed Marketing and Management. Department of agricultural Economics CCS HAU Hisar.
6. Anonymous 1992. Legislation on Seeds. NSC Ltd. Department of agriculture & Cooperation, Ministry of agriculture, New Delhi.
7. Nema NP. 1986. *Principles of Seed Certification and Testing*. Allied Publications.