

# AMH12 PRECISION FARMING AND PROTECTED CULTIVATION

## UNIT-1 THEORY

- 1.1 Precision farming– laser leveling, mechanized direct seed sowing;
- 1.2 Seedling and sapling transplanting, mapping of soils and plant attributes, site specific input application, weed management, insect pests and disease management,
- 1.3 Good Agricultural Practices in precision farming, yield mapping in horticultural crops.
- 1.4 Green house technology, Introduction, Types of Green Houses; Plant response to Greenhouse environment, planning and design of greenhouses,
- 1.5 Design criteria of green house for cooling and heating purposes.
- 1.6 Green house equipment's, materials of construction for traditional and low cost greenhouses.
- 1.7 Irrigation systems used in greenhouses, typical applications.
- 1.8 Passive solar greenhouse, Temperature Control Mechanism- heating and cooling systems, High–tech nursery raising,
- 1.9 Choice of crops for cultivation under greenhouses: tomato, capsicum, cucumber, melons.
- 1.10 Problems/constraints of greenhouse cultivation and future strategies.
- 1.11 Growing media, soil culture, Selection Criteria for soil media, soil pasteurization.
- 1.12 Peat moss and mixtures, rock wool and other inert media for soilless culture, nutrient film technique (NFT)/ hydroponics.
- 1.13 Cost estimation and economic analysis.

## UNIT-2 PRACTICAL

- 2.1 Study of different types of greenhouses based on shape, construction and cladding materials; .
- 2.2 Calculation of air exchange rate in a greenhouse;
- 2.3 Estimation of drying rate of agricultural products inside greenhouse;
- 2.4 Testing of soil and water to study its suitability for growing crops in greenhouses;
- 2.5 The study of fertigation requirements for greenhouse crops and estimation of E.C. in the fertigation solution;
- 2.6 The study of various growing media used in greenhouse crops and their preparation and pasteurization/sterilization. Visit to commercial greenhouses.
- 2.7 Economics of protected cultivation.

## References Books:

1. Balraj Singh. 2006. Protected cultivation of vegetable crops. Kalyani Publishers, Ludhiana.
2. Brahma Singh, 2014. Advances in Protected Cultivation. New India Publishing Agency. New Delhi.
3. Reddy P. Parvatha, 2003. Protected Cultivation. Springer Publications. USA.
4. Reddy, P. Parvatha. 2011. Sustainable crop protection under Protected Cultivation. Springer Publications. USA.