

AMH08 SOIL FERTILITY AND NUTRIENT MANAGEMENT

UNIT-1 THEORY

- 1.1 Introduction to soil fertility and productivity- factors affecting.
- 1.2 Essential plant nutrient elements- functions, deficiency systems, transformations and availability.
- 1.3 Acid, calcareous and salt affected soils- characteristics and management.
- 1.4 Soil organic matter, pH in plant nutrition, soil buffering capacity. .
- 1.5 Integrated plant nutrient management.
- 1.6 Soil fertility evaluation methods, critical limits of plant nutrient elements and hunger signs.
- 1.7 NPK fertilizers: composition and application methodology, luxury consumption, nutrient interactions, deficiency symptoms, visual diagnosis.
- 1.8 Plant nutrient toxicity symptoms and remedies measures.
- 1.9 Soil test crop response and targeted yield concept.
- 1.10 Nutrient use efficiency and management.
- 1.11 Secondary and micronutrient fertilizer.
- 1.12 Fertilizer control order.
- 1.13 Manures and fertilizers classification and manufacturing process.
- 1.14 Properties and fate of major and micronutrient in soils.
- 1.15 Fertilizer use efficiency and management.
- 1.16 Effect of potential toxic elements in soil productivity.

UNIT-2 PRACTICAL

- 2.1 Analysis of available N, P,K and Micronutrients and interpretations.
- 2.2 Gypsum requirement of alkali soils.
- 2.3 Lime requirement of acid soils.
- 2.4 Determination of Boron and chlorine content in soil.
- 2.5 Sampling of fertilizer for chemical analysis.
- 2.6 Physical properties of fertilizers.
- 2.7 Estimation of ammonical nitrogen and nitrate nitrogen in fertilizer.
- 2.8 Estimation of water soluble P₂O₅, Ca and S in SSP, Lime and Gypsum.
- 2.9 Estimation of Potassium in MOP/SOP and Zinc in zinc sulphate.
- 2.10 Visiting of fertilizer testing laboratory.

References Books:

1. Yawalkar K S, Agarwal JP and Bokde S, 1992. Manures and Fertilizers. Agri. Horticultural Publishing House, Nagpur.
2. Tandon HLS, 1994. Fertilizers Guide. Fertilizers Development Consultation Organization, New Delhi.
3. Seetharaman S, Biswas B C, Yadav D S and Matheswaru S. Usage 1996. Hand Book on Fertilizers. Oxford and IBH Publishing Company, New Delhi.