



DEPARTMENT OF AGRICULTURAL ENGINEERING

RCETAE002 - Principles of organic farming

Course outcomes:

- Students will be able to cultivate crops using principle of organic farming.
- Students will be able to design, acute the establishment and manage an organic farm for a crop.
- Students gain knowledge about cropping methods and crop rotation.

Syllabus:

UNIT I

Basics of Agronomy 1. Agronomy- definition, scope; role of Agronomist and relationship of Agronomy with other sciences. 2. Tillage - definition, objects of tillage, types of tillage, tillage implements and factors affecting tillage, Effect of tillage on soil and crop growth. 3. Tilth- definition, characteristics and ideal tilth; modern concepts of tillage, minimum, zero and stubble mulch tillage, importance of puddling. 4. Seed - definition, characteristics of quality seed, seed treatment and its objectives; methods of sowing seed and sowing implements.

UNIT II

Crop communities 1. Effect of plant population on growth and yield, planting geometry viz., solid, paired and skipped row planting. 2. Role of plant nutrients in crop production, Importance of manures and fertilizers and its classification. 3. Methods and time of application of manures, fertilizers and green manuring. 4. Nutrient use efficiency, meaning and factors affecting nutrient use Efficiency.

UNIT III

Growth and development 1. Growth and development- definition, growth curve and factors affecting growth and development. 2. Plant ideotypes - definition and types of ideotypes. 3. Crop rotation, its definition, principles and advantages of crop rotation. 4. Study of crop adaptation and its distribution.

UNIT IV

Weed management 1. Weeds, its definition, characteristics of weeds, merits and demerits of weeds. 2. Classification of weeds, meaning of crop weed competition and its period in different crops. 3. Principles and methods of weed management viz., cultural, mechanical, chemical, biological weed control methods



and integrated weedmanagement. 4. Classification of herbicides, its selectivity and resistance, Allelopathiceffect of weed.

UNIT V

Cropharveting 1. Crop harvesting, signs of maturity in different field crops; physiological and crop maturity. 2. Methods of threshing crops, cleaning, drying and storage of field crops. 3. Rainfed agriculture: Introduction, types, History of rainfed agriculture and watershed in India. 4. Problems and prospects of rainfed agriculture in India; Soil and climatic conditions prevalent in rainfed areas.

Reference Text Books:

1. Organic farming-Theory and Practice by S.P. Palaniappan and K. Annadurai
2. Principles of organic farming by S. R. Reddy
3. Principles of Agronomy by S. R. Reddy
4. Organic crop production (Principles and practices Vol-I: Principles and General Aspects) by J. P. Sharma
5. Principles and practices of organic farming by R. Balasubramanian, K. Balakrishnan and K. Sivasubramanian