

## **SYLLABUS**

### **DIPLOMA IN SUGARCANE PRODUCTIVITY AND MATURITY MANAGEMENT**

#### **SUBJECT: SUGARCANE AGRONOMY (THEORY)**

**CODE: SM/101**

**MAX. MARKS: 100**

1. Sugar Producing Plants.
2. History, Origin and Distribution of Sugarcane, Major Sugarcane producing countries in the world. Area under sugarcane cultivation in different states in India.
3. Soils: Definition, weathering and soil formation, Composition and classification of Indian Soils.
4. Cultivation of Sugarcane, preparation of land, period of sowing, cane seed,
5. Methods of planting, irrigation, optimum conditions for germination, tillering and growth and maturity of the crop, water and weed management in Sugarcane Crop.
6. Nutrition of Sugarcane, Major (Macro) and Micronutrients and their deficiency symptoms and remedies.
7. Ratooning in sugarcane & its management Practices.
8. Sugar beet: Importance of sugar beet in sugar production in the world, brief idea on cultivation of sugar beet including time of sowing, fertilizers and irrigation and its comparison with sugarcane.

#### **SUBJECT: POST-HARVEST DETERIORATION AND PROCUREMENT OF SUGARCANE (THEORY)**

**CODE: SM/102**

**MAX. MARKS: 100**

1. Pre- harvest maturity survey of sugarcane
2. Methods of testing maturity in sugarcane
3. Methods of harvesting and transport of sugarcane.
4. Measures to control harvesting and transport in order to supply fresh and mature cane to sugar factory.
5. Procurement practices in different states
6. Sugarcane control Act, FRP and SAP

#### **SUBJECT: SUGARCANE VARIETAL DISTRIBUTION & OTHER CROPS INSECT PESTMANAGEMENT (THEORY)**

**CODE: SM/103**

**MAX. MARKS: 100**

1. Recommended varieties and their main characteristics suitable areas
2. Plant Protection Measures for Sugarcane
3. Major diseases and pest of Sugarcane and their management
4. Factors affecting sugar yield.
5. Rice: Recommended varieties in India and seed rate, time and method of sowing, irrigation, fertilizer use, control of weeds, insect-pests and diseases, harvesting, processing and yield.
6. Maize: Recommended varieties in India and seed rate, time and method of sowing, irrigation, fertilizer use, control of weeds, insect-pests and diseases, harvesting, processing and yield.
7. Sweet Sorghum: Varieties in India and seed rate, time and method of sowing, irrigation, fertilizer use, control of weeds, insect-pests and diseases, harvesting, processing and yield.

**SUBJECT: SUGAR TECHNOLOGY(THEORY)****CODE: SM/104****MAX. MARKS: 100**

1. General idea about sugar factories, their capacities and type of sugars produced, Flow diagram of process of plantation white sugar, simple calculations for determining pol% cane, bagasse% cane, Java Ratio, DMF and Fibre% cane. General idea about the by-product of the sugar Industry and their utilization for value addition.
2. Apparent and true purity, refractometric and hydrometric brix, effect of dextran on sugar estimation and on processing, removal of dextran, colouring bodies present in sugar cane juice, determination of colour value of sugar cane juice (ICUMSA), effect of staling of cane on processing.

**SUBJECT: SUGARCANE ANALYSIS (PRACTICAL)****CODE: SM/105****MAX. MARKS: 100**

1. Determination of maturity of Sugarcane using cane puncturing needle and Hand Refractometer
2. Brix, Pol, Purity determination of Cane Juice.
3. Reducing sugar estimation.
4. Brix survey of sugarcane
5. Determination of Pol in Cane and Fiber percent in Cane.
6. Determination of Extraneous matter in Cane
7. Determination of pH & Titratable acidity in Cane Juice.
8. Determination of pH, EC, OC, Available N, P & K in soil
9. Determination of Dextran in Cane Juice (with the collaboration of Organic Chemistry)