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DEPARTMENT OF AGRICULTURAL ENGINEERING

24AG201-CROP PRODUCTION TECHNOLOGY

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IMPORTANT GROUPS OF FIELD CROPS IN TAMILNADU

In Tamil Nadu, field crops play a crucial role in agriculture, contributing significantly to the state's economy and food security. Some of the important groups of field crops grown in Tamil Nadu include cereals, pulses, oilseeds, and commercial crops.

Cereals: Rice remains the staple cereal crop in Tamil Nadu, particularly in the fertile delta regions of the Cauvery, Vaigai, and Thamirabarani rivers. The state is known for its diverse rice varieties, including Samba, Ponni, and Kuruvai, each adapted to different agro-climatic conditions and water availability. The cultivation of rice involves intensive water management, with both traditional flood irrigation and modern techniques like System of Rice Intensification (SRI) being practiced. In addition to rice, other cereals like maize, sorghum (jowar), and pearl millet (bajra) are grown in rainfed areas of the state, contributing to the diversity of cereal production.

Pulses: Pulses play a crucial role in providing dietary protein to the people of Tamil Nadu. Black gram (urad dal), green gram (moong dal), chickpea (chana), and pigeon pea (tur dal) are the major pulse crops cultivated across the state. These crops are grown both in irrigated areas, where they benefit from supplemental water, and in rainfed regions where they rely on seasonal rains. Pulse cultivation often involves intercropping with other crops or as a component of crop rotation systems to improve soil fertility and manage pests and diseases effectively.

Oilseeds: Oilseeds are vital for edible oil production and contribute significantly to Tamil Nadu's agricultural economy. Groundnut (peanut), sesame (gingelly), sunflower, and castor are the primary oilseed crops cultivated in the state. Groundnut, grown primarily in the drier districts of Tamil Nadu, benefits from good drainage and supplemental irrigation. Sesame, known for its drought tolerance, is cultivated in both rainfed and irrigated areas. Sunflower, suitable for dryland cultivation, is grown predominantly in the western and southern districts. Castor, an important industrial crop, is cultivated mainly in the southern districts of Tamil Nadu.

Commercial Crops: Sugarcane is one of the major commercial crops in Tamil Nadu, cultivated extensively in the Coimbatore, Tiruchirappalli, Salem, and Thanjavur districts. It is

a water-intensive crop and is grown both for sugar production and for ethanol production in recent years. Cotton is another significant commercial crop, grown in the drier parts of the state, especially in districts like Coimbatore, Dindigul, and Tiruppur. The state's cotton production supports the textile industry and provides employment to a significant rural population. Other commercial crops include tea, primarily cultivated in the Nilgiris district, and coffee, grown in the Nilgiris and Kodaikanal regions, contributing to the state's plantation sector and export earnings.

Horticultural Crops: Tamil Nadu boasts a diverse range of horticultural crops, contributing to both domestic consumption and export markets. Mango, banana, guava, citrus fruits (like orange, lemon, and lime), and papaya are some of the major fruit crops cultivated across the state. These fruits are grown in different agro-climatic zones, with mangoes thriving in the southern districts and bananas being grown extensively in the delta regions. Vegetables such as tomato, brinjal, bhindi (okra), and green leafy vegetables are also cultivated throughout the year, meeting the local demand and contributing to nutrition security.

Fiber and sugarcane crops play significant roles in agriculture and industry, particularly in their contributions to textiles and sugar production, respectively. Here's an exploration of these two important crop categories:

Fiber Crops:

1. Cotton: Cotton is one of the primary fiber crops cultivated globally and plays a crucial role in the textile industry. In regions like Tamil Nadu, cotton cultivation is prevalent in drier areas such as Coimbatore, Dindigul, and Tiruppur districts. The state's cotton production supports the textile sector, providing raw material for fabric and garment manufacturing. Cotton cultivation involves techniques such as crop rotation and integrated pest management (IPM) to maintain soil health and manage pests sustainably. Tamil Nadu's cotton production contributes significantly to both domestic textile manufacturing and export markets.

2. Jute: While jute is not as extensively cultivated in Tamil Nadu compared to other states like West Bengal, it remains an important fiber crop. Jute is known for its strength and durability, making it suitable for various products such as sacks, bags, and textiles. In Tamil Nadu, jute cultivation is primarily limited to specific agro-climatic zones where soil and water conditions are suitable. The fiber from jute plants is extracted from the stem's outer skin (bast fiber) and undergoes processing to make it suitable for various industrial applications.

Sugarcane:

1. Sugarcane Cultivation: Sugarcane is a vital cash crop in Tamil Nadu, contributing significantly to the state's agricultural economy. It is predominantly cultivated in districts like Coimbatore, Tiruchirappalli, Salem, and Thanjavur. Sugarcane requires well-drained fertile soils and ample water supply for optimal growth. The crop is propagated through stem cuttings and grows rapidly under favorable conditions. Tamil Nadu's sugarcane cultivation supports the sugar industry, with processing mills converting the cane into sugar, molasses, and ethanol. Sugarcane farming involves practices such as irrigation management, nutrient application, and pest control to ensure high yields and quality.

2. Economic Importance: Sugarcane cultivation provides livelihoods to numerous farmers and laborers across Tamil Nadu. The state's sugar mills process the harvested cane into various products, including raw sugar, refined sugar, and by-products like molasses and bagasse. The industry also contributes to rural development through employment generation and supporting ancillary activities such as transportation and trade. Additionally, sugarcane plays a role in biofuel production, with ethanol extracted from cane used as a renewable energy source.

3. Challenges and Sustainability: Despite its economic importance, sugarcane cultivation faces challenges such as water scarcity, labor availability, and price fluctuations. Sustainable practices like drip irrigation, integrated nutrient management, and adopting drought-tolerant varieties are increasingly being promoted to enhance water-use efficiency and reduce environmental impact. Additionally, diversification into value-added products like ethanol and bio-based chemicals is being explored to improve profitability and sustainability in the sugarcane sector.