Field Crops Producer (FCPR)
Core Qualification File Syllabus

Details of Theory Syllabus

Sl. No.	CONTENT	DETAILS
1.	Introduction for Field Crops (3Hrs)	Definition, types (Cereals, Pulses, Oilseeds, Tuber Crops, Fibre Crops, Sugar Crops, Narcotic Crops and Forge Crops), and examples of different types of field crops Area, production and yield of field crops Role of Field Crop Producers
	Cereals (20Hrs)	Introduction to important cereal crops (Rice, Wheat and Maize) Climatic requirement (temperature, rainfall, etc.), soil for different types of cereal crops, and scope of crop insurance Seasons for cultivation (*pre-kharif, kharif* and *rabi*), crop sequence, and land preparation Varieties (local, high-yielding and hybrid) of Rice, Wheat and Maize suitable for different regions Sowing variables (seed rate, sowing time, method of sowing, spacing, etc.), Nursery (dry, wet and dapog) for raising rice seedlings, and Transplanting (manual and mechanical) Nutrient management (recommended dose, basal and top dressing, green manuring, commonly used manures and fertilizers) Common weeds and their management (manual, chemical, and integrated), water management (rainfed or irrigated, water requirement, critical stages of irrigation, and drainage) Insect-disease management including damage symptoms of major insects and diseases of different cereal crops, and their management (use of resistant varieties, cultural practices, use of pesticides, and integrated pest management) Harvesting (manual and mechanical), threshing, winnowing and storage Marketing, minimum support price, economics of cultivation, post-harvest processing, grain quality, and uses
3.	Pulses (15Hrs)	Introduction to important pulse crops (Chickpea, Lentil, Pigeonpea, Mungbean, Urdbean and Lathyrus) Seasons of cultivation for different pulse crops, crop sequence, climate, soil and land preparation Varieties of Chickpea, Lentil, Pigeonpea, Mungbean, Urdbean and Lathyrus suitable for different regions Sowing variables (sowing time, seed rate, *Rhizobium* inoculation, method of sowing, spacing, *paira* cropping, etc.) Nutrient management (recommended dose, basal and top dressing, commonly used fertilizers) Weeds and their management (manual, chemical, and integrated) Water management (rainfed or irrigated, water requirement, critical stages of irrigation, and drainage) Major insects and diseases of different pulse crops, their damage symptoms

		and management (use of resistant varieties and pesticides) Harvesting / picking of pods, threshing, winnowing and storage Post-harvest processing, marketing, minimum support price and uses
4.	Oilseeds (15Hrs)	4.1 Introduction to important oilseed crops (Rapeseed-Mustard, Groundnut, Sesame and Linseed) Seasons of cultivation for different oilseed crops, cropping system, climate, soil, and land preparation Varieties of Rapeseed-Mustard, Groundnut, Sesame and Linseed suitable for different regions Sowing variables (sowing time, seed rate, method of sowing, spacing, etc.) Nutrient management (recommended dose, basal and top dressing, commonly used fertilizers including sulphur containing ones) Weeds and their management (manual, chemical, and integrated) Water management (rainfed or irrigated, water requirement, critical stages of irrigation, and drainage) Major insects and diseases, their damage symptoms and management (use of resistant varieties and pesticides) Harvesting, threshing, winnowing and storage Oil extraction, marketing, and uses
5.	Tuber Crops (4Hrs)	5.1 Types of tuber crops, introduction to Potato, climate, soil and crop sequence Land preparation, varieties, and sowing variables (sowing time, tuber / seed rate, treatment of tubers, method of sowing, spacing, etc.) Nutrient management (recommended dose, basal and top dressing, commonly used fertilizers), earthing up, weeds and their management (manual, chemical, and integrated), water management (water requirement, critical stages of irrigation, and drainage), major insects and diseases, their damage symptoms and management De-haulming, harvesting, sorting, bagging, storage (traditional and cold), marketing, economics of cultivation and uses
6.	Fibre Crops (6Hrs)	6.1 Introduction to important fibre crops (Jute and Cotton), their area of cultivation, season, climatic requirement, soil types and crop sequence 6.2 Varieties of Jute (white and *tossa*/deshi), and Cotton suitable for different regions Land preparation, sowing variables (sowing time, seed rate, method of sowing, spacing, etc.) and thinning Nutrient management (recommended dose, basal and top dressing, commonly used fertilizers), weeds and their management (manual, chemical, and integrated), and water management (rainfed or irrigated, water requirement, and drainage) Major insects and diseases, their damage symptoms and management (use of resistant varieties and pesticides) Harvesting, *jak* making, retting in water, extraction (manual and mechanical) and drying of jute fibre; and harvesting and extraction of cotton fibre Quality parameters and grading of jute fibre; quality of cotton fibre Marketing, minimum support price, and uses
7.	Sugar Crops (3Hrs)	7.1 Types of sugar crops, introduction to sugarcane, area of cultivation 7.2 Season (*Eksali* / *Adsali*), climate, soil types and cropping system

		7.3 Land preparation, varieties, planting variables (planting time, sett rate, sett treatment, method of planting, spacing, etc.), wrapping and propping 7.4 Nutrient management (recommended dose, basal and top dressing), weeds and their control, irrigation, insect-disease management Harvesting, extraction of juice, quality and uses
8.	Narcotic crops (2Hrs)	8.1 Types of narcotic crops, introduction to tobacco, classification, and area of cultivation, climate, soil types, and land preparation 8.3 Varieties, nursery, planting variables (planting time, seed rate, method of planting, spacing, etc.), 8.4 Nutrient management, weeds and their control, irrigation, insect-disease management 8.5 Harvesting, curing and uses
9.	Forage crops (4Hrs)	9.1 Types of forage crops, introduction to Cowpea, Ricebean, Para grass and Napier grass, their climatic requirement, soil types and land preparation 9.2 Varieties, sowing variables (sowing time, seed rate, method of sowing, spacing, etc.), 9.3 Nutrient and other crop management practices 9.4 Harvesting/cutting, making of hay and silage
	TOTAL	**72 Hrs**

Detail of Practical Syllabus

SL NO	CONTENT (Any Eight)	DETAILS
	Morphological study of field crops and area of cultivation (6Hrs)	Study on morphological characteristics (leaf, stem, flower, economic part, etc.) of different types of field crops Prepare map of the country and state, or mark on maps showing the cultivation areas of different field crops Understand climatic requirement, and agro-advisory services (weather forecasting in print, audio, audio-visual and social media) Understand soil type and land situation for different field crops
	Sowing / Planting (12Hrs) [Cereals (3), Pulses (2), Oilseeds (2), Tuber Crops (1), Fibre Crops (1), Sugar Crops (1), Narcotic Crops (1) and Forge Crops(1)]	Select land suitable for specific field crops understanding crop sequence Collection of soil samples, understand the methods of soil testing, nutrient information in soil health card, and finalize fertilizer application schedule for field crops Select suitable varieties for specific situation and purpose of use Calculate seed rate for rice/jute/lentil/rapeseed, seed tubers for potato, and sett rate for sugarcane Understand the methods of seed/tuber/sett treatment; inoculation of *Rhizobium* of pulse seeds Understand the technical know-how for operation of powertiller/ paddy transplanter Prepare nursery (dry/wet/dapog) for rice and raising seedlings Prepare land and make lines/furrows following spacings Calculate the requirement of manures and fertilizers and apply basal dose for different field crops Sow the seeds or plant seedlings following standard methods

	Crop Management (36Hrs) [Cereals (12), Pulses (6), Oilseeds (6), Tuber Crops (3), Fibre Crops (3), Sugar Crops (2), Narcotic Crops (2) and Forge Crops(2)]	Understand growth stages of different field crops Thin rapeseed-mustard/jute plants to maintain optimum plant population, nipping in chickpea, propping in sugarcane, etc. Calculation on manures and fertilizers for unit area (acre/ha.) based on standard recommendations for rice/wheat/jute/potato Top-dress fertilizers to the standing field crops, foliar spray of micro-nutrients in pulse crops Identify different types of weeds (grass, sedge and broad leaf) and remove them by manual method Demonstrate the use of sprayer in field and its maintenance Understand pre- and post-emergence herbicides, calculate their requirement as per recommended dose and spray for chemical control, understand integrated weed management Understand critical stages of crop growth and irrigate field crops following suitable methods (flood and furrow) Drain out excess water in case of heavy rainfall (surface drainage,etc.) Identify major insects and diseases, understand their damage symptoms Adopt insect-disease management through manual and chemical methods and understand integrated pest management Calculate required quantity of pesticides, and their applications Understand hazards of agro-chemicals on health (skin diseases, breathing problems, etc.) and environment (residual effect in soil, pollution in near-by water bodies), and safety measures to be taken (use of gloves, masks, etc.). Visit nearest Govt./Research farm
	Harvesting (6Hrs) [Cereals (1), Pulses (1), Oilseeds (1), Tuber Crops (1), Sugar Crops (1), and Forge Crops(1)]	Determine the optimum time of harvesting based on crop stage Harvest plants (cereals and pulses) by sickles, picking pods of pulses, harvesting of potatoes, cutting of forage crops Estimate the yield of rice/potato
	Post-harvest activities, storage and processing (10Hrs) [Cereals (2), Pulses (1), Oilseeds (1), Tuber Crops (1), Fibre Crops (2), Sugar Crops (1), Narcotic Crops (1) and Forge Crops(1)]	Parboiling and milling of paddy, post-harvest processing of pulses, extraction of oil, etc. Sort potatoes according to size and bag for storage Prepare jak in retting tank, understand and practice methods (manual and mechanical) of extraction of jute fibre, and grading Drying and curing of tobacco leaves Making hay and silage Visit nearest rice mill or potato cold storage or jute mill
	Marketing and Economics of Production (10Hrs) [Cereals (2), Pulses (1), Oilseeds (1), Tuber Crops (1), Fibre Crops (2), Sugar Crops (1),	Understand minimum support price for different field crops Understand market-chain for different field crops Identify market and buyers for field crop produce Calculate cost of production, gross return, net income and B:C ratio of rice, jute and potato Calculation on premium rate and claims for damage of field crops under crop insurance programme Visit nearest *haat* / regional market for specific field crops and understand

	Narcotic Crops (1) and Forge Crops(1)]	the supply-chain and price variation
	Projects (16 Hrs)	7.1 Any two projects, each of 8 Hrs.
Total		**96 Hrs.**

Details of Project (Any two)

Sl. No.	Content (Any two, each 8Hrs.)	Details
1.	Project I (8 Hrs)	Project on a model rice-based farm [Example: land in farm, facilities, crop sequence, varieties of different crops including aromatic/special rice, crop management, production, processing, marketing and economics]
2.	Project II (8 Hrs)	Project on a multi-crop farm [Example: land in farm, facilities, different types of crops grown including sequence, crop management, production, storage, marketing and economics]
3.	Project III (8 Hrs)	Project on production-processing-market chain of jute / potato [Example: land in farm, facilities, crop management, production, post-harvest processing, grading, market-chain, uses and economics]
4.	Project IV (8 Hrs)	Project on a model organic farm [Example: land in farm, other enterprises, organic crop management, biological weed and pest control, production and quality, post-harvest processing, market-chain, uses and economics]

OUTCOMES

Outcomes to be assessed	Assessment criteria for the outcome
1. Identify different field crops, their classification importance, area of cultivation and production with morphological characteristics.	(1.1) Identify and select different types of field crops (cereals, pulses, oilseeds, tuber crops, fiber crops, sugar crop, narcotic crop and forage crops) with examples and their uses. (1.2) List out the role of Field Crops Producer. (1.3) Identify the morphological characteristics (leaf, stem, flower, economic part, etc.) of different field crops. (1.4) Prepare maps or mark areas on maps showing the area of cultivation of different field crops along with their production.
2. Plan and identify soil and climatic requirement, select agro-advisory services and apply different farm implements	(2.1) Recognize the suitable conditions of cultivation (land, soil and weather) of different field crops. (2.2) Select agro-advisory services in the local area and state its importance. (2.3) Identify different farm implements (power tiller, seed drill, potato planter, paddy transplanter, nail weeder, sprayer, potato harvester, jute fibre extractor, etc.) (2.4) Describe the name, functions and purpose of use of different farm implements.
3. Identify the varieties of field crops and prepare land for crops, seed treatment and apply various cultivation techniques viz. sowing / planting methods	(3.1)Identify the plant characteristics and important traits of suitable varieties of different field crops. (3.2) Describe different ways of land preparation for different field crops. (3.3) Identify the seeds/planting materials of different varieties of different field crops, their sources of collection, and suitability for different regions. (3.4) Prepare a nursery(dry/wet) for raising rice seedlings. (3.5) Knowledge of operating skills of the trainee on operation of power tiller for land preparation. (3.6) Calculate the seed requirement of rice/jute/lentil/rapeseed-mustard/potato for unit area. (3.7) Demonstrate the methodology of seed treatment of different field crops and inoculation of *Rhibozium* in pulse seeds. (3.8) Apply various cultivation techniques viz sowing the seeds/planting materials independently in the field following standard spacing.
4.Plan and execute crop management activities for field crops	(4.1) Identify different growth stages of field crops (like early growth/establishment, vegetative, reproductive and near-harvesting). (4.2) Demonstrate intercultural operations of different field crops like thinning in rapeseed-mustard/jute, nipping in chickpea, earthing up for potato, wrapping and propping for sugarcane, etc. (4.3) List out the names of common manures (like cattle dung, rural compost, farm yard manure, vermicompost, etc.) and fertilizers (like urea, single super phosphate, muriate of potash, di-ammonium phosphate, NPK-Sufala, etc.) along with their nutrient content, doses and time of application. (4.4) Calculate the amount of manures and fertilizers required for unit area based on standard recommendations for rice/wheat/jute/potato. (4.5) Demonstrates nutrient management in the field.

	(4.6) Identify different types of weeds (grass, sedge and broad leaf) in the fields along with their types and common names. (4.7) Perform weed control activities (manual, chemical or integrated) and to estimate the quantity of herbicides required for the purpose. (4.8) Recognize different irrigation methods (like flood irrigation, furrow irrigation, etc.) and drainage options (like surface drainage, etc.) suitable for different field crops. (4.9) Identify the major insects and disease symptoms of different field crops and to suggest suitable control measures (manual, chemical and integrated methods). (4.10) Demonstrate the use of a sprayer. (4.11) Demonstrate skill for insect-disease management including estimating the required quantity of pesticides and their applications in fields. (4.12) Execute procedure for crop insurance, premium rate, crop damage situations and claims for rice/jute/potato. (4.13) Collect soil samples, and to explain soil testing, soil health card and fertilizer application schedule.
5. Demonstrate harvesting techniques for different field crops	(5.1) Determine the optimum harvesting time based on crop growth-age. (5.2) Explain the methods of harvesting of rice/jute plants, potato tubers, picking of pulses, cutting of forage crops. (5.3) Demonstrate the methods and steps for harvesting rice/jute/potato. (5.4) Describe the methods of estimating the yield of rice, jute and potato.
6. Summarize post harvest management system.	(6.1) List out the objectives of post harvesting technology (6.2)Demonstrate the jak making, retting process in tank/pond, illustrate the extraction procedure (manual and mechanical) of jute fibre. (6.3) Sort the potatoes as per size and bagging of the same. (6.4) Illustrate the procedure for drying and curing of tobacco leaves.
7. Identify and Select storage environment, quality parameters and grading of economic produce.	(7.1) Identify cold storage conditions for potatoes. (7.2) Illustrate the entire working process of a potato cold storage unit or rice/jute mill, through pictures or process flow diagrams. (7.3) Explain the quality parameters of milled rice, split-pulses, oils, sugarcane juice and jute fibre. (7.4)Separate milled and parboiled rice, or to grade jute fibre with proper procedure.
8. Illustrate marketing strategy skill of economy of production of field corps.	(8.1) Identify marketing channels (such as kishan mandies, retailers, processors, etc.) and price competitiveness (on-farm value to on-market value) of different field crops. (8.2) List out the role of Jute Corporation of India, sale of potato and supply-chain. (8.3) Identify the markets and buyers at local and regional level for economic produce of field crops. (8.4) Calculate the economics of production and net profit (such as cost of cultivation, gross return, net income and benefit: cost ratio) for rice/jute/potato. (8.5) Summarize the importance, enrollment procedure and compensation claims in crop insurance programme.