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Annexure-E

SYLLABUS FOR ASSISTANT DIRECTOR (SERICULTURE)

PAPER – I

Sericulture in India: - History of Sericulture, Why sericulture, Types of silkworm and their food plants, status of sericulture in India, life cycle of mulberry and non-mulberry silkworms.

Mulberry cultivation: - Establishment of mulberry garden, soils and climate, preparation of land, mulberry varieties, method of propagation, preparation of nursery, planting systems, types of plantation. Cultivation practices, pruning, manures and fertilizers application, irrigation, weed management, leaf/shoot harvest, yield and quality assessment.

Mulberry diseases: - Integrated pests and their management. (IPM)

Silkworm breeds: - Races and their characteristics. Selection of silkworm breed for rearing, pre-requisites for silkworm rearing. Estimation of leaf yield and rearing capacity.

Disinfection and hygiene: - Selection of disinfectant, method of disinfection, preparation of disinfectant, estimation of disinfectant solution, hygiene maintenance.

Silkworm rearing house: - Models of rearing houses, selection of site, orientation, space requirements, young and late age rearing house, mounting hall.

Silkworm seed production: - Seed organization, basic seed farms, seed cocoon generation, commercial egg production, loose egg preparation, egg preservation, acid treatment, hibernation schedules.

Incubation and silkworm rearing: - Egg transportation, surface sterilization, methods of incubation, incubation devices, loose egg incubation, black boxing, hatching and brushing.

Chawki rearing: - Characteristics of young silkworms, chawki rearing methods, commercial chawki rearing, mulberry garden management for chawki rearing. Transportation of chawki worms. Use of bed disinfectants.

Late age rearing: - Characteristics of late age silkworms, rearing methods, advantages and disadvantage, leaf quality and quantity, space requirement, rearing management in different season, use of bed disinfectants, molting care, identification of spinning larvae, types of montages, advantages and disadvantages, mounting methods, mounting care, mechanization in silkworm rearing.

Harvesting and marketing of cocoons: - Time of harvest, deploring, sorting, cocoon assessment, stifling, transportation and marketing.

Silkworm diseases, pests and their management.

Economics of sericulture: - Different scales of rearing, chawki rearing, cost- benefit ratio.

Sericulture & Rural economic Development in NE Region and in particular in Arunachal Pradesh Areas/ Locations of sericulture development activities in Arunachal Pradesh.

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PAPER -II

Sericulture and rural development: - Silk global scenario, world silk production vis-à-vis India production. Area, distribution, cocoon markets, silk exchanges. NGO's in sericulture, woman and sericulture development, establishment of central silk board, research and extension organization for development of sericulture. Training programmers in sericulture. Self help groups, quality clubs, institute village linkage program etc. Problems for sericulture development in India and measures to overcome.

Silk technology: - Importance of silk and its uses, importance of reeling industry for development of sericulture, problems. Assessment of cocoon properties, shell ratio% filament length, filament size, reel ability % estimated renditta, raw silk%, kakame cost, influence of cocoon characters on reeling and raw silk quality, cocoon testing and grading, cocoon stifling, methods of stifling. Usna koti, advantages and disadvantages. Cocoon cooking, mechanism of cooking, cooking methods, cocoon brushing, devices for brushing, reeling, principles involved in direct system of reeling and indirect system of reeling, cottage basins, multi-end reeling machine, re-reeling, lacing, skeining, package and storage, factors influencing price of raw silk, price stabilization.

Raw silk testing, winding test, size test, evenness test, cleanness and neatness test, tenacity and elongation, cohesion test, raw silk grading. International standards, silk throwing, weaving, degumming, bleaching, dyeing fabric finishing spun silk.

SILK TECHNOLOGY:

Cocoons: - Sorting of cocoons, cocoons cocoon testing, storage of cocoons, stifling of cocoons, Drying of cocoons- cooking of cocoons. Methods employed- Character of cocoons.

Reeling: - Methods of Silk Reeling- Charkha-cottage, basin, s-Filatures-Semi-automatic and Automatic types.

Raw silk testing: - Packing of raw silk-Utilization of by-products.

Silk Throwing: - Manufacturing of yarns for use in ordinary, chiffon, crepe, georgette fabrics- number of piles and different twist levels used.

Weaving Industry: Warp and Weft preparation – Machineries employed in small scale scale and organized section. Silk weaving -Handloom and power loom Weaving-Special features of silk looms- modification required on power loom weave silk fabrics.

Spun Silk-Industry: - Raw materials for spun silk yarn production, production of spun yarn and their properties.

Processing Industry: - Degumming and drying of silk yarns – Dyeing, Printing and Finishing of Silk fabrics.

Non-Mulberry sericulture: - Cultivation of tasar food plants, cultivation of muga food plants, cultivation of eri food plants, disease and pests of non mulberry host plants and their management, non-mulberry host plants and their management, non-mulberry silkworm rearing

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Methods, outdoor rearing for tropical tasar and muga, indoor rearing for temperate tasar and Eri, care during rearing, mounting, harvesting. Economics of tasar, muga and Eri culture, disease and pests of non-mulberry silkworms.

Sericulture Extension and Management: - Resource system analysis, micro planning for sericulture, socio economic status, importance of sericulture in development plan sericulture in employment generation. Application of management principles in cocoon production and silkworm seed production. Managerial problems, role of cooperatives in sericulture extension in india, peoples participation, participatory rural appraisal, rapid rural appraisal, role and responsibility of different categories of extension warders, local leaders, contact farmers and representatives of local government institutions, special difficulties confronting extension programme methods to overcome, integrated rural development project, study of different programmes at national level, IRDP DWACRA, TRYSEM, JRY, Antyodaya, PMRY, cases of sericulture development in other countries, Japan China, Korea and Brazil.

Cultivation of various type of Silkworm food plants/types of silkworm reared in Arunachal Pradesh. Production of cocoon / yarn in Arunachal Pradesh.

Problems & prospects of Sericulture Development in Arunachal Pradesh.

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