

G. Ganga

Comprehensive Sericulture

Volume 2
Silkworm Rearing and Silk Reeling

Contents

Preface		v
10.	History of Sericulture	1
	Silk-producing Organisms	1
	Uses of Mulberry Silk	1
	Unique Properties of Silk	5
	Identification of Silk	7
	History of Sericulture	8
	Sericulture Today	9
	International Bodies Associated with Silk Trade	16
11.	The Mulberry Silkworm, Bombyx mori	17
	Taxonomic Position of Bombyx mori	17
	Life Cycle of Bombyx mori	18
	Classification of Bombyx mori into Races	26
	Morphology of Bombyx mori	31
12.	Anatomy and Embryology of Bombyx mori	38
	Anatomy	38
	Embryology of Bombyx mori	56
13.	Silkworm Breeding	67
	Breeding Goals	67
	Genetic Basis of Breeding	69
	Breeding Methods	69
	Race Authorisation	73
	Silkworm Races in Different Countries	76

14.	Production of Reproductive Seeds	84
	Germplasm Banks	84
	Seed Organisation System	85
	Multiplication Systems Followed in Different Countries	88
	Rearing of Pure Breeds	93
15.	Production of Industrial Seeds	95
	Grainages	96
	Grainage Operations	98
16.	Incubation of Silkworm Eggs	115
	Factors Affecting Embryonic Development	115
	Methods of Incubation	118
	Black Boxing	119
	Wrapping Before Hatching	119
	Incubation Methods Followed in Different Countries	120
	Postponement of Hatching Date	124
17.	Basic Requirements for Silkworm Rearing	126
	Outdoor Rearing	126
	Indoor Rearing	127
18.	Disinfection	141
	Methods of Disinfection	141
	Disinfection Prior to Rearing	145
	Disinfection during Rearing	149
19.	Rearing Operations	156
	Maintenance of Optimal Conditions during Rearing	156
	Feeding	167
	Bed Cleaning	180
	Spacing	182
	Management during Moulting	187
20.	Rearing Young-age Silkworms	192
	Incubation	192
	Brushing	194
	Significance of Young-age Rearing in Total Yield	200
	Characteristics of Young-age Silkworms	200
	Optimal Conditions for Young-age Silkworms	201
	Feeding with Mulberry	201
	Bed Cleaning	209

		İx
	Prophylactic Measures against Disease Ideal Rearing House for Young-age Worms Rearing Methods Rearing Methods in Different Countries	209 209 210 211
21.	Rearing Late-age Silk Worms Characteristics of Late-age Silkworms Optimal Conditions for Late-age Silkworm Rearing Rearing Operations Methods of Rearing Rearing Methods in Different Countries	225 226 226 228 232 238
22.	Mounting to Harvesting Preliminary Preparation for Mounting Characteristic Features of a Ripe Worm Methods of Mounting Population Density in Mounting Maintenance of Environmental Conditions during Spinning Preservation of Mounted Cocooning Frames until Harvest Baking Cocoons Harvesting	246 247 249 254 255 259 260 260
23.	Marketing Characters used in Assessing Cocoon Quality Cocoon Sorting Price Fixation Cocoon Marketing	262 262 267 271 273
24.	Silkworm Diseases Viral Diseases Bacterial Diseases Fungal Diseases Protozoan Disease	275 275 290 300 312
25.	Pests of Silkworms Uzi Fly Dermestid or Bacon Beetles Ants Nematodes Lizards, Rats, Squirrels and Birds	322 322 331 335 335 335

1	ì	,		
4	٠	٠		
	2	X	X	X

26.	Pre-reeling Processes	336
	Transport of Cocoons	336
	Stifling	337
	Storage of Cocoons	345
	Sorting of Cocoons	346
	Cocoon Deflossing	346
	Cocoon Riddling	347
	Cocoon Mixing or Blending	347
	Cocoon Cooking	347
	Brushing	355
27.	Silk Reeling	358
	Reeling Operations	358
	Reeling Devices	368
	Reeling Defective Cocoons	378
28.	Raw Silk Testing	381
28.	Raw Silk Testing Silk Conditioning	381 381
28.	· ·	
28.	Silk Conditioning	381
28.	Silk Conditioning Visual Tests	381 382
	Silk Conditioning Visual Tests Mechanical Tests	381 382 382
	Silk Conditioning Visual Tests Mechanical Tests Silk Grading	381 382 382 390
	Silk Conditioning Visual Tests Mechanical Tests Silk Grading By-products of Sericulture	381 382 382 390 392
	Silk Conditioning Visual Tests Mechanical Tests Silk Grading By-products of Sericulture By-products of Moriculture	381 382 382 390 392 392
	Silk Conditioning Visual Tests Mechanical Tests Silk Grading By-products of Sericulture By-products of Moriculture By-products of Rearing	381 382 382 390 392 393
	Silk Conditioning Visual Tests Mechanical Tests Silk Grading By-products of Sericulture By-products of Moriculture By-products of Rearing By-products of Grainage Operation	381 382 382 390 392 392 393 395
29.	Silk Conditioning Visual Tests Mechanical Tests Silk Grading By-products of Sericulture By-products of Moriculture By-products of Rearing By-products of Grainage Operation By-products of Reeling	381 382 382 390 392 393 395 396