

Content

Sl. No.		Page No.
CHAPTER-I		
1	Introduction	1-8
CHAPTER-II		
2	Review of Literature	9-24
2.1	Muga silkworm rearing in outdoor and indoor condition	9
2.2	Nutritional efficiencies of muga silkworm	11
2.2.1	Nutritional efficiency as influenced by host plant	14
2.2.2	Nutritional efficiency as influenced by season	21
CHAPTER-III		
3	Materials and Methods	25-32
3.1	Geographical location	25
3.2	Climate	25
3.3	Experimental Site	25
3.3.1	Outdoor rearing	25
3.3.2	Indoor rearing	26
3.4	Insect	26
3.5	Food plants or host plants	26
3.6	Rearing of silkworm	26
3.6.1	Outdoor	26
3.6.2	Indoor rearing	27
3.7	Diet	27
3.8	Rearing performances	28
3.9	Consumption and utilization of food by muga silkworm larvae	29
3.9.1	Consumption and growth	29
3.9.1.1	Reference ratio	29
3.9.1.2	Consumption index	30
3.9.1.3	Growth rate	30
3.9.2	Digestibility and Efficiency of Conversion	30
3.9.2.1	Digestibility	30
3.9.2.2	Conversion of ingested food to larval biomass, cocoon, cocoon shell and egg	30
3.9.2.3	Conversion of digested food to larval biomass, cocoon, cocoon shell and egg	31
3.9.3	Ingesta required to produce	31
3.9.4	Digesta required to produce	32
3.10.1	Cocoon yield	32
3.10.2	Egg yield	32
3.11	Statistical analysis	32

CHAPTER-IV

4	Results	33-100
4.1	Indoor and outdoor rearing in different seasons	33
4.1.1	Environmental factors during different seasons	33
4.1.1.1	Temperature	33
4.1.1.2	Relative humidity	34
4.1.1.3	Photoperiod	35
4.1.1.4	Rainfall	35
4.1.2	Rearing performance	36
4.1.2.1	Larval duration	36
4.1.2.2	Matured larval weight	37
4.1.2.3	Single cocoon weight	37
4.1.2.4	Single shell weight	38
4.1.2.5	Shell ratio	39
4.1.2.6	Effective rate of rearing (ERR)	40
4.1.2.7	Absolute silk content (kg)	41
4.1.2.8	Fecundity	42
4.1.2.9	Correlation study	43
4.2	Nutritional efficiency of larva on two principal host plants during favourable seasons	45
4.2.1	Nutritional efficiencies of larva fed on som leaves	45
4.2.1.1	Food ingestion	45
4.2.1.2	Food digestion	45
4.2.1.3	Excreta	46
4.2.1.4	Reference ratio	46
4.2.1.5	Larval duration	46
4.2.1.6	Weight gain	46
4.2.1.7	Approximate digestibility (AD)	47
4.2.1.8	Efficiency of conversion of ingested food (EC I)	48
4.2.1.9	Efficiency of conversion of digested food (ECD)	48
4.2.1.10	Consumption index (CI)	48
4.2.1.11	Growth rate (GR)	48
4.2.1.12	Mean daily food ingestion (MDFI)	49
4.2.1.13	Mean daily food digestion (MDFD)	50
4.2.1.14	Ingestion / Growth	50
4.2.1.15	Digestion / Growth	50
4.2.2	Nutritional efficiencies of larva fed on soalu leaves	52
4.2.2.1	Food ingestion	52
4.2.2.2	Food digestion	52
4.2.2.3	Excreta	53
4.2.2.4	Reference ratio	53
4.2.2.5	Weight gain	53

4.2.2.6	Larval duration	53
4.2.2.7	Approximate digestibility (AD)	54
4.2.2.8	Efficiency of conversion of ingested food (EC I)	55
4.2.2.9	Efficiency of conversion of digested food (ECD)	55
4.2.2.10	Consumption index (CI)	55
4.2.2.11	Growth rate (GR)	55
4.2.2.12	Mean daily food ingestion (MDFI)	56
4.2.2.13	Mean daily food digestion (MDFD)	57
4.2.2.14	Ingestion / Growth	57
4.2.2.15	Digestion / Growth	58
4.2.3	Correlation between food ingestion and other parameters	58
4.3	Nutritional efficiency of larva on different combination of leaves during favourable season	60
4.3.1	Food ingestion	60
4.3.2	Food digestion	60
4.3.3	Excreta	60
4.3.4	Reference ratio	61
4.3.5	Weight gain	61
4.3.6	Larval duration	61
4.3.7	Approximate digestibility (AD)	65
4.3.8	Efficiency of conversion of ingested food (EC I)	65
4.3.9	Efficiency of conversion of digested food (ECD)	65
4.3.10	Consumption index (CI)	65
4.3.11	Growth rate (GR)	65
4.3.12.	Mean daily food ingestion (MDFI)	68
4.3.13	Mean daily food digestion (MDFD)	68
4.3.14.	Ingesta / Growth	70
4.3.15	Digesta / Growth	70
4.4	Nutritional efficiencies of larval instars fed on better selected host plant as well as better combination of leaves during different seasons	72
4.4.1	Food ingestion	72
4.4.2	Food digestion	73
4.4.3	Excreta	74
4.4.4	Reference ratio	76
4.4.5	Approximate digestibility (AD)	77
4.4.6	Weight gain	78
4.4.7	Efficiency of conversion of ingested food (EC I)	79
4.4.8	Efficiency of conversion of digested food (ECD)	81
4.4.9	Larval duration	82
4.4.10	Consumption index (CI)	83
4.4.11	Growth rate (GR)	84
4.4.12.	Mean daily food ingestion (MDFI)	85

4.4.13	Mean daily food digestion (MDFD)	87
4.4.14.	Ingestion / Growth	88
4.4.15	Digestion / Growth	89
4.4.16	Economic parameters influenced by seasons and leaf	90
4.4.16.1	Single cocoon weight	90
4.4.16.2	Effective rate of rearing	90
4.4.16.3	Fecundity	91
4.5	Conversion efficiency of cocoon, cocoon shell and egg of best-performed host plant during different season	92
4.5.1.	Conversion efficiency of cocoon	92
4.5.1.1	Efficiency of conversion of ingested food into Cocoon	92
4.5.1.2	Efficiency of conversion of digested food into Cocoon	93
4.5.1.3	Ingesta required to produce 1 gm Cocoon	93
4.5.1.4	Digesta required to produce 1 gm Cocoon	94
4.5.2	Conversion efficiency to cocoon shell	95
4.5.2.1	Efficiency of conversion of ingested food into cocoon shell	95
4.5.2.2	Efficiency of conversion of digested food into cocoon shell	95
4.5.2.3	Ingesta required to produce 1 gm Cocoon shell	96
4.5.2.4	Digesta required to produce 1 gm cocoon shell	97
4.5.3	Conversion efficiency to egg	98
4.5.3.1	Efficiency of conversion of ingested food into egg	98
4.5.3.2	Efficiency of conversion of digested food into egg	98
4.5.3.3	Ingesta required to produce 1 gm egg	99
4.5.3.4	Digesta required to produce 1 gm egg	100
 CHAPTER-V		
5	Discussion	101-124
5.1	Performance of indoor and outdoor rearing of muga silkworm	101
5.2	Nutritional efficiency of larva on two principal host plant during favourable seasons	104
5.3	Nutritional efficiency of larva on different combination of leaves during favourable season	110
5.4	Nutritional efficiencies of larval instars fed on better-selected host plant as well as better combination of leaves during different seasons	115
5.5	Conversion efficiency to cocoon, cocoon-shell and egg of best performed host plant during different season	121
 CHAPTER VI		
6.	Summary and conclusion	125-131
 CHAPTER VII		
7	References	i-xii