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RELATIVE EFFECTS OF DISEASES ON THE QUALITY OF TROPICAL COCOONS OF *Antheraeamylitta* D. (SATURNIIDAE: LEPIDOPTERA)

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ABSTRACT

The present communication accounts for the relative effects of four different types of serious diseases viz; microsporodiosis, bacteriosis, virosis and mycosis on the quality fotasar silk producing cocoons of ***Antheraeamylitta***D. during the seed crop and commercial crop seasons Result obtained are indicative of the fact that all the four diseases of tasar silkworm adversely affect the quality fotasar cocoons as well as tasarsilk yarn. Among the four diseases the microsporodiasis caused by sporozoan parasite (Noseme infection) has been found to be relatively more serious affecting the cocoon weight, shell weight, shell ratio and tasarsilk yarn as compared to three other said diseases. The relative variations in respect of qualitative characters of tasar cocoons in relation to aforesaid diseases are probably due to the different nature and mode of infection of four different pathogens causing four different diseases of tasar silkworm.

Key words: Polyhedrosis, tasarsilk yarn, Denier, Seedcrop, commercial crop

INTRODUCTION

Indian tasar silkworm, ***Antheraeamylitta*** D. Suffers great loss of crop (70% to 80%) due to some serious diseases like microsporodiosis, bacteriosis, Polyhedrosis and mycosis caused by pathogens during the seed crop (July-Aug) and commercial crop seasons. The estimated crop loss due to microsporodiosis (Perbin disease) alone in case of ***Antheraeamylitta*** D. is reported to be in the tune of 40% (Sen and Jolly, 1972). Apart from this the viral infection (polyhedrosis) bacterial infection(Bacteriosis) and also fungal infection (mycosis) have been found to adversely affect the quantitative and qualitative characters of A.mylitta. the popular tassar silk producing insect of great commercial value (Ahsan and jamney, 1975).

Some significant investigations in relation to relative effect of different pathogens causing serious diseases among the sericigenous insects have been carried out by earlier workers in order to understand the extent of harm caused by the said diseases on the productivity and quality of silkyarn under different conditions(Akai. 1998. Anonymous 2006, Bhatia. etal. 2010, Kirsur, 2003, Moon etal 2007, Naiketal, 2005 ponday.etal 2012 & Sharma etal 2013).

The present communication has been designed to understand the relative impaots of four serious diseases of tasarsilk producing insect A. mylitta on the quality of tasar cocoons during two different seasons of rearing in the larger interest of wild tasar culture practiced by poor rearers on different tasar host plant in tropical tasar belts of our country.

MATERIALS AND METHODS

The infected cocoons of Antheraeamylitta due to diseases like microsporodiosis, bacteriosis,polyhedrosis and mycosis were collected during seed crop(July-August) and commercial crop(Sep-Oct).Seasons. The cocoons were stored separately under normal laboratory condition and further analysed for the different qualitative parameters viz. Cocoons wt. (gm),Shell wt. (gm). tasar filament length(m), non- breakable filament length (m), filament denier and reelabiltiy(%) as per the methods suggested by Jolly(1971). The expertments were carred out for both seed crop and commercial crop season. A relative picture in relations to four different diseases in respect of qualitative characters of tasar cocoons has been presented in Table.

RESULTS AND DISCUSSION

The reveals that the qualitative characters of cocoons during seed crop and commercial crop viz, average wt. of cocoons(10.40 and 11.68 due to microsporodiosis (11.68 and 11.72) due to bacteriosis (11.79 and 11.80) due to polyhedrosis (11.81, 11.88) due to mycosis present evident variations during

seed crop commercial crop as campared to control(11.95 and 12.16). Similarly other qualitative characters such as average shell wt. average lenght of filament, average non-breakable filament length, average filament denier and reelability during seed crop (1.28,740, 230, 5.62, 73.3) and commercial crop(1.30,744, 232, 5.68,75.7) due to microsporodiosis, (1.30,750,230,612,75.2) and (1.36,750,238,6.14,75.8) due to bacteriosis,(1.47 ,751,2.0,6.62,78.0 and (1.39,755,246,6.72,78.2) due to polyhedrosis and (1.38,761,242,662,78.4) and (1.40,761,249,6.73,78.8) due to mycosis as compared to control (1.41,769,247,6.71,80.2) and (1.43,768,251,6.79,81.0) for both the seasons. However, the pathogens also account for the variation. Although the adverse effect of microsporodiosis as campared to three other diseases on the qualitative characters of tasar cocoons highly significant. The table further reveals that the adverse effect of mycosis on quality of cocoons is relatively less than microsporodiosis, polyhedrosis and bacteriosis.The qualitative characters of cocoons during commercial crop season have been found to be relatively better than the seed crop season, thus account for the seasonal variation.

The aforesaid results have led us to believe that the relative variations in the qualitative characters of cocoons in respect of four different diseases are probably due to different nature and mode of infection of four different pathogens. However microsporodiosis appear to be more harmful than three other pathogens such as bacterial.

Table

Table showing effect of different diseases on the qualitativecharacters ofCocoons, *Antheraea militia* D.

Sl No.	Characters	Season	Micros Porodiosis	Bacte riosis	Polyhe drosis	Mycosis	Control
01.	Average Weight of Cocoons (gm)	I	10.40	11.68	11.79	11.81	11.95
		II	11.68	11.72	11.80	11.88	12.16
02.	Average Shell Weight of per Cocoons (gm)	I	1.28	1.30	1.37	1.38	1.41
		II	1.30	1.36	1.39	1.40	1.43

03.	Average Non-breakable Filament percocoon(m)	I	740	750	751	761	769
		II	744	750	755	761	768
04.	Average Non-breakable Filament length percocoon(m)	I	230	230	240	242	247
		II	232	238	246	249	251
05.	Average Filament Dinner per cocoon (%)	I	5.62	6.12	6.62	6.62	6.71
		II	5.68	6.14	6.72	673	6.79
06	Average reelablillity(%)	I	73.3	75.2	78.0	7-8.4	80.2
		II	75.7	75.8	78.2	78.8	81.0

Seasons I-Seed Crop

II- Commercial Crop

Viral and fungal. The relative superiority of commercial crop cocoons as compared to seed crops cocoons in respect of diseases is presumed due to difference in the environmental conditions between two different seasons.Thus it is logical to believe that commercial crop season provide conducive environmental for the culture of tasar silk worms than the seed crop season.

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