



RELATIVE EFFECTS OF DIFFERENT CONCENTRATIONS OF MYTOMYCIN-C ON THE DIFFERENT CHARACTERS OF *Amtheraea mylitta D.*

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ABSTRACT

Antheraea mylitta D at egg level and pupal stage was subjected to different concentrations of chemical mutagen mytomyacin-c in rapes to examine the relative effects of different doses on the breeding and economic characters of tasar silk worm during the commercial crop and seed crop seasons. The experiment was performed under laboratory condition during diapausing and non diapausing period. For the diapausing period winter season was considered. The treatment were provided at egg level and pupal level. A control was also maintained. Key Word: mytomyacin-c egg level pupal level stage seed crop and commercial crop.

INTRODUCTION

Antheraea is a tasar silk producing insect belonging to family saturniidae of order Lepidoptera (IMMS 1960). Tasar silk which is in great demand by large section of human population due to its lustre. Luxurious look and sleek feel. The great demand of

tasar which as well as foreign countries has given a very immerse important to sericulture. As a matter of facts a lot of investigations on the sericigenous insect have been carried out in order to know the genetic make up biological manifestation and reeling performances for increasing the productivity and quality of tasar to a desired extent. However one knowledge about the impart of mutation on the biological manifestations of slf worms is quite fragmentary as such it becomes on important task to evaluate the role of some mutagens on the biology of tasar silk insect in larger interest of sericulture.

The scientific study of mutation started in 1910 when T.H Morgan started his work on fruit fly. *Drosophila melanogaster* and reported while eyed make individuals. Since than many brilliant investigations in the field of mutation are carried out.

MATERIAL AND METHODS

Daba ecorace of *Amtheraea mylitta* at egg and pupal stage was subjected to different concentrations of chemical mutagen mytomycin-c in order to examine the relative effects of different doses on the breeding and economic characters of tasar silk worm during the commercial crop and seed crop seasons. The experiment was performed under laboratory conditions during diapausing and non diapausing period. For the diapausing period winter season was considered. The treatments were provided at egg level and pupal level. A control was also maintained.

(a) Egg level treatment

- (i) A lot of eggs divided into fine relication (20x5) was subjected to different concentrations of mytomycin such as 0.01% 0.1%, 1%, 2% and 3% .
- (ii) The Data egg within 30 mins of oviposition were depend into different concentration of mytomycin-c for 5min. They were than kept on filter papies and washed throughlywith distilled water. The treated eggs were stirred for about 30 sec The materials wasfurthers air dried and keptfor incubation at 30⁰c.

(iii) further the hatching percentage and subsequent rearing

performances in relation to various economic characters of tasar such as E.R.R percentage. Cocoon weight shall weight shall ratio filament length and denier were recorded during seed crop and commercial crop.

Season and results obtained were presented in the tables. A control wa also maintained.

(b) Pupal level treatment.:

A lot of 100 pupal divided in five replications (20x5) were treated under different doses of mytomycin-c. The pupal of same age were injected (50ml) with 0.01% 0.1%, 1%, and 2% doses in distilled water and kept for their further behavioural activities in relation to breeding and economic characters. A control was also maintained. The experiments were carried out for the both seasons. The results obtained were presented in the tables.

OBSERVATION

Table 2 reveals the egg level treatment of different dosages to mytomycin-c during commercial crop season. The percentage of hatching (58.0, 52.0, 41.0) E.R.R percentage (29.0, 24.0, 17.0) cocoon weight (1.46, 1.40, 1.11 gms) shall ration (12.30, 11.36, 10.30%) Filament length (745,748, 750m) and Denier (12D, 12D and 7D) at 0.01% 0.1% and 1% concentrations of mytomycin-c register repermacy ove seed crop seasons in respect of economic characters of tasar. The dosages such at 2.0% and 3.0% are totally lethal. It is evident that the egg level treatment of 0.01% concentration of mytomycin-c has developed edge over the control in respect of economic character. However the percentage of hatching (56.0), E.R.R percentage (27.0) cocoon weight (11.41gms). Shall weight (1.42gm) shall ratio (12.19%) filament length (740m) and denier (11D) as recorded under control are superior than 0.1 and 1.0 percent egg level treatmental lots is respect ey economic characters of tasar. It is thus clear that egg level treatment at lower concentraton of O.D.I percent mytomycin-c is significant ey tasar. It is thus clear that egg level at lower concentration of 0.01 percent of mytomycin is significant is respect of economic characters of tasar than the control. The gradual increase of dosages has resulted into deterioration of characters and finally lethal at higher concentration of mytomycin-c during both the seasons.

Table 3 accounts for the relative effects of different dosages of mytomycin-c at pupal level treatment in respect of various characters during the seed crop seasons. It reveals that the percentage of emergence (62.0, 50.0, 38.0) coupling percentage (53.0, 45.0, 29.0) egg laying percentage (66.0, 55.0, 40.0) E.R.R percentage (29.0, 21.0, 10.0) shall wt. (1.45, 1.38 1.10 gms.) and filament length (743, 732 and 638 m) at 0.01, 0.1 and 1.0 percent evident vaiation It is clear that the 0.01% pupal level treatment of mytomycin-c in respect of various characters of tasar has shownits significant than the control.

The pupal treatment at 2.0 and 3.0 percent are totally lethal. The percentage of emergence (60.0). Coupling percentage (50.0) egg laying percentage (65.0) Hatching percentage (55.0) E.R.R percentage (28.0), shall weight (1.43gm) and filament length (741m) as recorded under control are superior than the lots of pupal treated at 0.1 and 1.0 percent of mytomycin-c Table 2 showing relative effects dosages of mytomycin-c egg level treatment on the economic characters of *Antheraea mylitta*

(Commercial Seed Crop)

S.N	Different dosages of mytomycin-c %	No. of eggs treated	Hatching %	E.R.R %	Cocoon weight (Gm)	Shall weight gm	Shall ratio	Filament length m	De mior
1	0.01	100	58.0	29.0	11.53	1.46	12.30	745	12D
2	0.1	100	52.0	24.0	11.10	1.40	11.36	746	12D
3	1	100	41.0	17.0	10.13	1.11	10.30	750	7D
4	2	100	.....	.....	.....	.....	.....	.....	...
5	3	100	.....	.....	.....	.....	.....	.....	...
	Control	100	56.0	27.0	11.41	1.42	12.19	740	11 D

= Significant

= Lethal

Table 3 showing relative effects of different dosages of mytomycin-c (Pupal level treatment) on the economic characters of *Antheraea mylitta*

(Seed crop season)

S.N	Different dosages of mytomycin-c %	No. of eggs treated	Emergence of moth %	Colping %	Egg laying %	Hatching	E.R.R %	Shall wt.	Filament length m
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1	0.01	100	62.0	53.0	56.0	57.0	29.0	1.43	743
2	0.1	100	50.0	45.0	55.0	50.0	21.0	1.38	732
3	1	100	38.0	29.0	40.0	40.0	10.0	1.10	638
4	2	100	.....	.....	.....	.....	.....	.....	.....
5		100	.....	.....	.....	.....	.....	.....	.....
	Control	100	60.0	50.0	65.0	55.0	28.0	1.43	741

= Significant

= Lethal

DISCUSSION

The results so obtained became very clear that the chemical mutagen such as mtomycin-c owing to its chemical constituent has stimulating effect to an optimum level in order to accelerate the process of growth and development of an organism.

The project deals with relative effects of 0.01, 0.1, 1.0, 2.0 and 3.0 concentration of mytomycin-c at egg level and pupal level treatment in relation to various economic and beeding characters of *Antheraea mylitta*. Results are indicative of the fact that lower concentration of 0.01% mytomycin-c as compared to 0.1 and 1.0% treatment is effective in relation to various character of tasar However higher oncentration (2.0%) of mytomycin ha proved lethal. A part from thus ut us aksi clear that with the increase of dosage from 0.01% to 1.0% concentration the gradual decrease in characters occurs as compared to control. The lower dosage (0.01%) has developed its supremacy over the control. The lower dosage (0.01%) has developed its supremacy over the control.

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