CHAPTER-III

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The present study on the effect of different concentration of antibiotics ampicillin, chloromycetin, and ciproflaxocin on food and water utilization budgets in Eri silk worm *Samia Cynthia ricini* reveals the following interesting findings.

1. In *S. ricini* there were different growth pattern in the larvae fed control leaf. The growth increase as function of life stage/age/weight the larvae fed different concentration of three antibiotics displayed higher growth than the larvae at control. The growth increased as function of concentration of each antibiotics resulting in the highest growth at 0.6% of antibiotics ampicillin, chloromycetin, and ciproflaxocin. It resulted in higher body weight of the silkworm. Such increase in the weight of the larvae may be due to the influence of antibiotics on the metabolic activity of the larvae.

2. Food consumption progressively increased from instar to instar and riched maximum during the final day of the last instar. Consumption fluctuated in the larvae fed different selected antibiotics and was dependent on the concentration and the type of antibiotics used.

   Though the total amount of food consumed differed considerably as function of different concentrations of antibiotics from that of the control, the percent of difference was not significant.

3. The feeding rate decreased with increase in age/body weight/as function of larval period irrespective of type of antibiotics and concentration of antibiotics.
used. However, in few instances the rate increased with the increase in the concentration of antibiotics.

4. Total food assimilation increased in the test larvae as function of life stage and concentration of antibiotics. It was maximum during final instar, which may be due to maximum food assimilation that takes place in lepidopteran insects before pupation.

5. The assimilation efficiency changed a little as function of either life stage of concentration of antibiotics.

6. Conversion of food into body substance differed considerably depending on larval stage as well as on different concentrations of antibiotics. Maximum conversion was found during fifth instar, which was about eight times more than the conversion during fourth instar. The conversion increased with the increase in concentration of the antibiotics. The changes in the conversion may be due to the influence of antibiotics present in the leaf.

7. Food utilization budgets differed considerably in the larvae fed different concentration of antibiotics ampicillin, chloromycetin and ciproflaxocin. Higher consumption with increased feeding rate with almost uniform assimilation efficiency resulted in higher conversion of food to body substance in the larvae fed antibiotics.

8. The gross conversion efficiency increased as function of life stage irrespective of the type or concentration of antibiotics.

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9. In the present study it may be that the presence of antibiotics resulted in increased food intake, feeding rate and conversion depending on the concentration of ampicillin, chloromycetin and ciproflaxacin.

The study in the water utilization has revealed the following valuable findings.

10. Water intake in Samia cynthia ricini increased as function of life stage and was dependent not only on type of antibiotics used but also on concentration of antibiotics the intake increased at each instar level at different concentration and was maximum during 0.6% concentration of the antibiotics.

11. The water absorption also increased or function of concentration of antibiotics and was maximum at 0.6% concentration.

12. The rates and efficiency of intake absorption and transpiration changes depending on the concentration and target rates usually decreased with the increase in the body weight or age.

13. The differences in the water intake and utilization in the Eri silkworm are due to the preference of antibiotics which increased with increase in concentration.