Chapter-6

Summary

and

Conclusion
Summary and conclusion

From the above comprehensive work we have drawn the following conclusions-

1. With the increasing temperature from 14 to 26°C, the fecundity of *Bombyx mori* increased but above 26°C the fecundity started declining. The fecundity was minimum at 14°C while maximum at 26°C. The trend of variation of the fecundity in relation to varying relative humidity was of different type. With the increase in relative humidity from 35 to 80% RH, the fecundity of *Bombyx mori* increased from an average of 181.05 to 351.00 eggs per female. The variation in photoperiod regime also considerably influenced the egg laying capability of *Bombyx mori*. Maximum eggs were laid at 12 hours light per day while minimum eggs were laid at 6 hours light per day.

2. With the increase in the temperature from 14 to 34°C, the incubation period of *Bombyx mori* decreased from an average of 12.83 days to 8 days respectively. Similar type of variation was noticed with the increasing relative humidity regime. The increase in relative humidity caused considerable decline in the incubation period from 13 days at 35% RH to the lowest level of 9.4 days
at 80% RH. The variation in photoperiod regime also influenced the incubation period of *Bombyx mori* eggs. Maximum duration of the incubation was 11.77 days at 06 hours light a day while it was minimum of 9.56 days at 18 hours light per day.

3. Variation in temperature considerably influenced the hatchability of *Bombyx mori* eggs. The hatchability was noticed to be maximum 94% at 26°C while minimum 65.33% at 14°C. With the increasing relative humidity from 35 to 80% RH the hatchability increased from 43.2% to the maximum level of 95.9% respectively. The variation in photoperiod regimes has no significant influence on the hatchability of *Bombyx mori* eggs.

4. The variation in temperature and relative humidity significantly influenced the larval duration of *Bombyx mori* but the varying photoperiod regime has no significant impact on the larval duration of silkworm. The larval duration was noticed a minimum of 23 days at 34°C, 25.96 days at 80% RH and 25 days at 18 hours light per day.

5. The larval weight of *Bombyx mori* was also noticed significantly influenced by varying temperature and relative humidity regimes but photoperiod has no significant influence on the larval weight.
Maximum larval weight was noticed at 30\(^\circ\)C temperature, 80% RH and 12 hours light per day.

6. The survival of *Bombyx mori* larvae was significantly influenced by the varying temperature and relative humidity regimes but variation in photoperiod regime has no considerable impact on the survival of larvae. The survival of larvae was noticed a maximum level of 89.5% at 26\(^\circ\)C temperature, 93.33% at 80% RH and 94.56% at 12 hours light per day.

7. The pupal duration was observed significantly influenced by the variation in temperature but varying relative humidity and photoperiod regimes have no considerable influence on the pupal duration of *Bombyx mori*. The pupal duration was noticed minimum at 34\(^\circ\)C temperature, 80% RH and 12 hours light a day.

8. The variation in temperature, relative humidity and photoperiod has no significant influence on the pupal weight of *Bombyx mori*. Maximum pupal weight was recorded to be 0.98 gm at 30\(^\circ\)C temperature, 0.93 gm at 80% RH and 0.88 gm at 12 hours light per day.

9. Temperature variation significantly influenced the survival of pupae but the variation in relative humidity and photoperiod has no
considerable influence on the pupae survival. The survival of silkworm pupae was noticed to be of maximum level at 30°C temperature, 80 % RH and 12 hours light per day.

10. The variation in temperature, relative humidity and photoperiod has no significant influence on the weight of silk gland in *Bombyx mori* larvae. The maximum weight of silk gland was noticed to be 0.21 gm at 26°C temperature, 0.23 gm at 80% RH and 0.22 gm at 12 hours light per day.

11. Temperature and relative humidity variation significantly influenced the weight of cocoon but the varying photoperiod regimes have no considerable influence on the weight of cocoon. Maximum weight of single cocoon was noticed to be 1.87 gm at 26°C, 1.89 gm at 80% RH and 1.96 gm at 12 hours light per day.

12. The weight of shell in *Bombyx mori* has been noticed to be influenced significantly due to variation in temperature and relative humidity but photoperiod regime has no considerable influence on the weight of shell. Maximum shell weight was obtained at 26°C, 80% RH and 12 hours light per day.

13. The shell ratio of *Bombyx mori* has been noticed to be influenced by varying temperature and relative humidity regimes but
photoperiod has no considerable effect on the shell ratio. The shell ratio was observed to be maximum of 12.7% at 26°C temperature, 12.9% at 80% RH and 13% at 12 hours light per day.

14. Temperature variation significantly influenced the total protein content in the silk gland of *Bombyx mori* but the variation in relative humidity and photoperiod regime has no considerable influence on the total protein content of silk gland. The protein content of silk gland was noticed to be of maximum level at 26°C temperature, 80% RH and 12 hours light a day.

It is concluded that 26°C temperature, 80% RH and 12 hours light per day are the most suitable conditions for the developmental growth and silk producing parameters of *Bombyx mori nistari*. Therefore, the silk rearers should try to maintain the ideal conditions of 26°C temperature, 80% RH and 12 hours of photoperiod per day for the heavy production of cocoon and good silk yield.