



**APPLICATION OF CERTAIN AROMATIC PLANTS AS
BED DISINFECTANTS AND EFFECT OF SOME
SUPPLEMENTARY FEEDING ON SILKWORM,
BOMBYX MORI L.**

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V- SUMMARY AND CONCLUSION

The present work was carried out at Plant Protec. Dept. Fac. Of Agric., Fayoum Univ. for six successive seasons (2010-2013) to study the effect of some aromatic plants as bed disinfectants and stimulants as well as the effect of supplementary feeding on the productivity of silkworm, *Bombxy mori* L.

Egg boxes of silkworm, *B. mori* L. (Egyptian and Turkish hybrids) were obtained from the Seric. Res. Dept. Larvae of *B. mori* were reared on fresh mulberry leaves under laboratory conditions ($29\pm 2^{\circ}\text{C}$, $73\pm 5\%$ RH) during autumn seasons, ($26\pm 2^{\circ}\text{C}$, $76\pm 5\%$ RH) during spring seasons.

1. Results of bed disinfectants:

Five aromatic plants were it used as bed disinfectants and stimulants during three spring seasons of 2011-2013.

1.1. Results of first two spring seasons (2011&2012).

1.1.1. Biological parameters:

1.1.1.1. The 5th instar larval weights:

In the first season, *M. hortensis* occupied the 1st category, where the best result was obtained when it used with concentration of 75% with starch. While in the second season, *N. sativa* occupied the 1st category, where the best result was obtained when it used with concentration of 50% with flour.

1.1.1.2. The 5th instar larval duration:

In the first season, *T. serpyllum* occupied the 1st category, where the best result was obtained when it used with concentration of 75% with talcum powder. While in the second season, *A. cina* occupied the 1st category, where the best result was obtained when it used with concentration of 100%.

1.1.1.3. The 5th instar mortality percentages:

According to the obtained results, *A. cina* occupied the 1st category throughout the two seasons, where the best result was obtained when it used with concentration of 100% and 75% with slaked lime in the first and second seasons, respectively.

1.1.1.4. The pupal weights:

According to the obtained results, *A. cina* occupied the 1st category throughout the two seasons, where the best result was obtained when it used with concentration of 100%.

1.1.1.5.The number of eggs/female:

In the first season, *A. cina* occupied the 1st category, where the best result was obtained when it used with concentration of 75% with flour. While in the second season, *J. communis* occupied the 1st category, where the best result was obtained when it used with concentration of 75% with slaked lime.

1.2.Economical parameters:

1.1.2.1.The cocooning percentages:

In the first season, *A. cina* occupied the 1st category, where the best result was obtained when it used with concentration of 100%. While in the second season, *J. communis* occupied the 1st category, where the best result was obtained when it used with concentration of 75% with slaked lime.

1.1.2.2.The cocoon weights:

In the first season, *N. sativa* occupied the 1st category, where the best result was obtained when it used with concentration of 50% with slaked lime. While in the second season, *T. serpyllum* occupied the 1st category, where the best result was obtained when it used with concentration of 75% with slaked lime.

1.1.2.3.The cocoon shell weights:

In the first season, *T. serpyllum* occupied the 1st category, where the best result was obtained when it used with concentration of 75% with flour. While in the second season, *A. cina* occupied the 1st category, where the best result was obtained when it used with concentration of 100%.

1.1.2.4.The cocoon shell ratio:

In the first season, *J. communis* occupied the 1st category, where the best result was obtained when it used with concentration of 50% with slaked lime. While in the second season, *A. cina* occupied the 1st category, where the best result was obtained when it used with concentration of 50% with starch.

1.1.2.5. Silk productivity:

According to the obtained results, *A. cina* occupied the 1st category throughout the two seasons, where the best result was obtained when it used with concentration of 100%.

1.2. Results of third spring season (2013)

1.2.1. Biological parameters:

According to the obtained results (for the 5th instar larval weight and the effective rate of rearing), *A. cina* occupied the 1st category, where the best result was obtained when it used with concentration of 100%.

1.2.2. Economical parameters:

According to the obtained results (for the cocoon weights and the absolute silk yield), *A. cina* occupied the 1st category, where the best result was obtained when it used with concentration of 100%.

1.2.3. Biochemical parameters

According to the obtained results (for the total haemolymph protein and the protease enzyme), *N. sativa* occupied the 1st category, where the best result was obtained when it used with concentration of 50% & 75% (with slaked lime) respectively.

2. Results of supplementary feeding:

During the autumn season of 2011, larvae were fed on mulberry leaves alone during all instars except that of the 3rd one which fed on water hyacinth mixed with leaves of mulberry leaves (50:50w/w). At the

beginning of the fifth instar, larvae were fed on leaves of *M. alba* which sprayed with concentrations (0, 150, 300 and 600 mg/L.) of vitamins (V), minerals (M) , wheat germ (W) and complex of them (V+W, M+W & V+M+W). For each concentration two nutritive doses were it used (where larvae were fed on treated leaves daily or alternate days). Each nutritive dose was divided into four replicates, each of twenty larvae (in addition to the control).

2.1. Biological parameters:

2.1.1. The 5th instar larval weights:

According to the obtained results, complex of (vitamins (V), minerals (M) and wheat germ (W)) occupied the 1st category, where the best result was obtained when it used with concentration of 300mg/L with alternate days feeding type.

2.1.2. The larval duration:

According to the obtained results, vitamins occupied the 1st category, where the best result was obtained when it used with concentration of 150 mg/L.

2.1.3. The effective rate of rearing:

According to the obtained results, complex of (V+M+W) occupied the 1st category, where the best result was obtained when it used with concentration of 300mg/L with alternate days feeding type.

2.1.4. The pupal weights:

According to the obtained results, complex of (V+M+W) occupied the 1st category, where the best result was obtained when it used with concentration of 300mg/L with alternate days feeding type.

2.2. Economical parameters:

2.2.1. The cocoon weights:

According to the obtained results, complex of (V+M+W) occupied the 1st category, where the best result was obtained when it used with concentration of 300mg/L with daily feeding type.

2.2.2. The cocoon shell weights:

According to the obtained results, complex of (V+M+W) occupied the 1st category, where the best result was obtained when it used with concentration of 300mg/L with alternate days feeding type.

2.2.3. The cocoon shell ratio:

According to the obtained results, complex of (V+M+W) occupied the 1st category, where the best result was obtained when it used with concentration of 150mg/L with alternate days feeding type.

2.2.4. The silk productivity:

According to the obtained results, complex of (V+M+W) occupied the 1st category, where the best result was obtained when it used with concentration of 300mg/L with alternate days feeding type.

2.2.5. The absolute silk yield:

According to the obtained results, complex of (V+M+W) occupied the 1st category, where the best result was obtained when it used with concentration of 300mg/L with alternate days feeding type.

CONCLUSION

From the obtained results, it could be concluded that:

- Aromatic plants (especially, *Artemisia cina*) could be it used as bed disinfectant and stimulant for *B. mori* instead of chemical bed disinfectant.
- Water hyacinth was not suitable as supplementary feeding for *B. mori*.
- Food additives (especially, complex of vitamins, minerals and wheat germ) enhancing the *B. mori* productivity.