EFFECT OF SOME MARINE ALGAE EXTRACTS, THE FUNGUS *BAEUVERIA BASSIANA* AND CHLORPYRFOS PESTICIDE ON *SPODOPTERA LITTORALIS* AND *APHIS CRACCIVORA*

By

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Abstract

The purpose of the present work was to evaluate the toxicity of three algae ***(Carollina officinalis*, *Ulva lactuca*** and***Sargassum muticum***) extractsand the effect of ***Baeuveria bassiana***against ***Spodoptera littoralis*** and ***Aphis craccivora***,also, evaluate the joint action of the most effective crude algae extracts with Chloropyrfos pesticide.

For the three algae extracts against *S. littorali*s n-hexane crude extract of *C.officinalis*proved to be the highly toxic with LC_{50} (106.30 ppm) followed by *S. muticum* (204.03 ppm) and then *U. lactuca* (416.02 ppm). Also, the n-hexane crude extract of *C.officinalis* against *A. craccivora*, proved to be the highly toxic with LC_{50} (90.90 ppm) followed by *S. muticum* (194.20 ppm) and then *U. lactuca* (389.10 ppm).

The chloroform crude extract of *C. officinalis*against *S. littoralis*proved also highly toxic with LC_{50} (267.03 ppm) followed by *S. muticum* (276.88 ppm) and then *U. lactuca* (316.66 ppm), the chloroform crude extract of*C.officinalis*against *A. craccivora*proved to be the highly toxic, with LC_{50} (121.90 ppm) followed by *U. lactuca* (243.84 ppm) and then *S. muticum* (328.47 ppm).

The acetone crude extractof *U. lactuca* against *S. littoralis*, proved highly toxic, with LC_{50} (215.96 ppm) followed by *S. muticum* (552.21 ppm) and then *C. officinalis* (650.89 ppm). The acetone crude extract of*U. lactuca*against *A. craccivora*, proved highly toxic with LC_{50} (129.75 ppm) followed by *C. officinalis* (200.00 ppm) and then *S. muticum* (559.24 ppm).

The ethanol 99% crude extract of*U. lactuca*against *S. littoralis*, proved highly toxic with lowest LC_{50} (189.60 ppm) followed by *C. officinalis* (815.80 ppm) and then *S. muticum* (943.60 ppm). Against *A. craccivora*, *U. lactuca* proved the highly toxic with LC_{50} (97.96 ppm) followed by *C. officinalis* (484.27 ppm) and then *S. muticum* (661.82 ppm).

The main component of *U.lactuca*ethanol extracts was identified as a component from Carotene derivatives, with M. F. $C_{29}H_{43}O$ and M. Wt. 407.And, the main component of *C. officinalis*n-hexane extract was identified as a component from mesoditerpenoidwith a M. F. $C_{30}H_{42}0_6$ and M. Wt. 352.

Efficiency of *B. bassiana* on the 4^{th} larval instar of *S. littoralis* at the concentration levels($1.7X10^6$, $8.5X10^5$, $4.25X10^5$, $2.12X10^5$ and $1.06X10^5$

spores/ml)showed that the highly mortality percentage occurred at the highest concentration ($1.7X10^6$) being37.5, 61.5 and 87.2% at 3rd, 5th and 7th day respectively.

The effect of *B. bassiana* on the adult stage of *A. craccivora*,at the concentration levels ($1.9 X 10^5$, $9.5 X 10^4$, $4.75 X 10^4$, $2.38 X 10^4$ and $1.19 X 10^4$ spores/ml) showed thatthe highly mortality percentages occurred at the highest concentration ($1.9X10^5$) being26.7, 53.3, 72.4, 89.7 and 93.1% in 2nd, 4th, 6th 8th and 10th day respectively.

Dox, PDAY and PDA media were used, and the bioassay experiments were carried out on adults of *A. craccivora*and these media were arranged descendingly according to their.effect on synergistic activity on the fungus*B. bassiana* as follow Dox, PDAY and PDA media.

The effect of *B. bassiana* on the adult stage of *A. craccivora* on Dox medium, showed that mortality rate by serial concentrations levels ($1.9 X 10^5$, $9.5 X 10^4$, $4.75 X 10^4$, $2.38 X 10^4$ and $1.19 X 10^4$ spores/ml) reached its maximum at the highest concentration ($1.9X10^5$)being 26.7, 53.3, 72.4, 89.7 and 93.1% in 2nd, 4th, 6th 8th and 10th day respectively. And LC_{50} were $1.36X10^6$, $1.56X10^5$, $5.26X10^4$, $2.68X10^4$ and $2.12X10^4$ respectively.

The effect of *B. bassiana* on the adult stage of *A. craccivora* on PDAY medium, showed that mortality rate by the same serial concentrations levels reached its maximum at highest concentration ($1.9X10^5$) which reached 20.0, 43.33, 58.62, 72.41 and 79.31% in 2nd, 4th, 6th 8th and 10th day respectively. And LC_{50} were $8.3X10^5$, $2.7X10^5$, $1.2X10^4 5.6X10^4$ and $4.0X10^4$ respectively.

The effect of *B. bassiana* on the adult stage of *A. craccivora* on **PDA medium**, showed that mortality rate by serial concentrations on same levels reached maximum at highest concentration ($1.9X10^5$) which reached 13.33, 30.0, 41.38, 58.62 and 65.52% in 2nd, 4th, 6th 8th and 10th day respectively. And LC_{50} were $5.4X10^5$, $5.7X10^5$, $2.8X10^5$, $1.17X10^5$ and $7.9X10^4$ respectively.

The joint action of binary mixtures of each of the n-hexane crude extract of *C. officinalis*, ethanolic crude extract of *U. lactuca* and pesticide Chloropyrfos against the 4th instar larvae of *S. littoralis*, proved that the 1stmixture *(C. officinalis* n-hexane extract + Chloropyrfos (1:1)) gave potentiation effect. On the contrary an antagonistic effect was recorded using the 2ndmixture (*U. lactuca* ethanol extract and chloropyrfos (2:1)).

Key words: marine algae extracts – *B. bassiana*. – media comparison – combination between algae extracts and pesticides – *Spodoptera littoralis – Aphis craccivora*.