

Sixth Article: Shared with others inside the specialization - Published in Specialized International Journal

Article Title	The silica-nano particles treatment of squash foliage and survival and development of <i>Spodopteralittoralis</i> (Bosid.) larvae.
Participants	El-Helaly AA* El-Bendary HM**, Abdel-Wahab AS*, El-Sheikh MAK*, Elnagar S*. * Faculty of Agriculture, Cairo University ** Faculty of Agriculture, Fayoum University
Article status	Shared with others inside the specialization - Published in Specialized International Journal
The Journal	<i>Journal of Entomology and Zoology Studies 2016; 4(1): 175-180</i>

SUMMARY: The study was conducted throughout the period extended from October, 2014 to January, 2015. The main objective was to study the effect of nano-silica in comparison with Silica & Diazinon as a recommended insecticide, applied as foliar spray on squash plants in the greenhouse and fed to newly hatched larvae of *Spodopteralittoralis* (Bosid.) for both foliar and semi-synthetic diet applications. Squash leaves were treated with 4 different concentrations 200, 300, 400, and 500 ppm of the three tested compounds. In bioassays, the neonate, second and fourth instars test larvae were fed on treated leaves and monitored for larval mortality as well as certain biological parameters e.g., larval duration, pupal duration, pupal weight, pupation percentage, the rate of adult emergence and adult longevity in both treatments in comparison with untreated control foliage. Obtained results showed that generally hydrophilic nano-silica caused higher toxic action values than with the other treatments. Mortality rate among larvae in any of the treatments was directly correlated with the increase in concentration. Also, the newly hatched larvae were more susceptible to treatments than the other tested instars, where mortality was 73.07, 79, 72, 87.88 and 89.82% in concentration treatments in their ascending order, in comparison with Diazinon which caused

95.95% mortality. The observed developmental stages among survivals of test insects were also affected by the treatments. This investigation recommends the application of nano-silica at 500 ppm concentration for the suppression of *S. littoralis* pest.