







and even individual strains within the same serotype can be distinguished

reaction with gram stain ( ). Motility of *B. thuringiensis* isolates were tested by the growth pattern on nutrient agar plates. The isolates were streak-inoculated onto the middle of the agar plate from top to bottom and incubated

The colony of *absoluta used* in our laboratory assays was established from individuals collected from infested tomato fields at Fayoum Governorate, Egypt. They were reared on tomato plants in a climatic chamber at  $27 \pm 2$  C. 55% RH. Tomato plants were placed in the chamber weekly for feeding and egg lying. When required for our assays, adults were collected using a mechanical aspirator.

Twelve treatments, each with three replicates of ten larvae were used. In order to ass ss

with water. The larval mortality was evaluated daily at 4, 5 and 7 days for 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>th</sup>

and 4<sup>th</sup> instarfi

espectively.

ommercial biocide was protect

*L. j*

*huringiensis x ar*

Isolation of genomic DNA was carried out by the standard protocol  
( ).Single colony was inoculated in nutrient broth and



The data obtained from amplification products by primers were used to estimate genetic similarity among different isolates on the basis of shared amplification products using RAPD distance software package, version 1.4

glycogen, trehalose, ribose, and N-acetylcysteine



increasing period of time that larvae were exposed. Also for the later instars larvae,

and bacterial isolates interfered with egg formation or development and consequently, led to reduction in the number of laid eggs. Furthermore, it may be due to inability of the sperms to

cluster contained strain B1. On the other hand, the second cluster contains three strains B1, B2 and B3.

Abd El-Kareem, S.M., El-Akad, A.S







Souza, J.C. and P.R. Reis 1992. Traca-do-



Table(2).Morphological and physio-biochemical characteristics of *Bacillus* isolates .

---



\$ t Table (4): Cumulative mortality % of *Tuta absoluta* (Ú \$ tali )







Table( 7 ) Random primers showing polymorphism among native isolates of





