

Effect of Bino1 and Bino2 to decreasing population of two spotted mite on fig in comparison to chemical and non-chemical products

Geographical location: Fig garden, Estahban (Fars province)

Description

Start time of experiments: June 27, 2017

- 1- Host plant: Fig**
- 2- Target pest: *Tetranychus urticae* Koch (Acari: Tetranychidae)**
- 3- The products that were used against *T. urticae* (Treatments):**
 - a) Organamin (3 L/1000 L)**
 - b) Sitam (2 L/ 1000 L)**
 - c) Dayabon (8 L/1000 L)**
 - d) Parumi-S (2L/1000 L)**
 - e) Baroque(0.3 L/ 1000L)**
 - f) Bino 1 (1.5 L/ 1000 L)**
 - g) Bino 2 (1.5 L/ 1000 L)**
 - h) Spirodiclofen (0.5 L/1000 L)**
- 4- Each treatment includes 5 replication (A tree as one replication)**
- 5- Sampling area: 4 leaves of each tree**

The population (including eggs and adults) of *T. urticae* on each leaves was recorded at 3 steps:

Step 1: Before applying of products

Step 2: 7 days after using products

Step 3: 14 days after using products

The results of these experiments are shown on figure 1 and 2.

The results of experiments on eggs of *T. urticae*:

The results of these experiments showed that, 7 days after using Organamin, Sitam, Dayabon, Parumi-S, Baroque, Bino 1, Bino 2 and Spirodiclofen products, the population eggs of *T. urticae* decreased 31.25%, 26.66%, 37.5%, 95%, 80%, 100%, 100% and 54.54%, respectively. The Bino 1, Bino 2 and Spirodiclofen caused to death eggs of *T. urticae* to 100% (after 7 days), therefore, these products introduce as best products against two-spotted mite.

Also, 14 days after using Parumi-S, Baroque, Bino 1, Bino 2 and Spirodiclophen, the population of adults of *T. urticae* significantly decreased 50%, 100%, 68.75%, 26.66% and 90.91%, respectively. But in treatments that were used Organamin and Dayabon, the population of eggs increased 25% and 31.25%, respectively. Also in Sitam treatment, the population of eggs not changed significantly (after 14 days) (Figure 1).

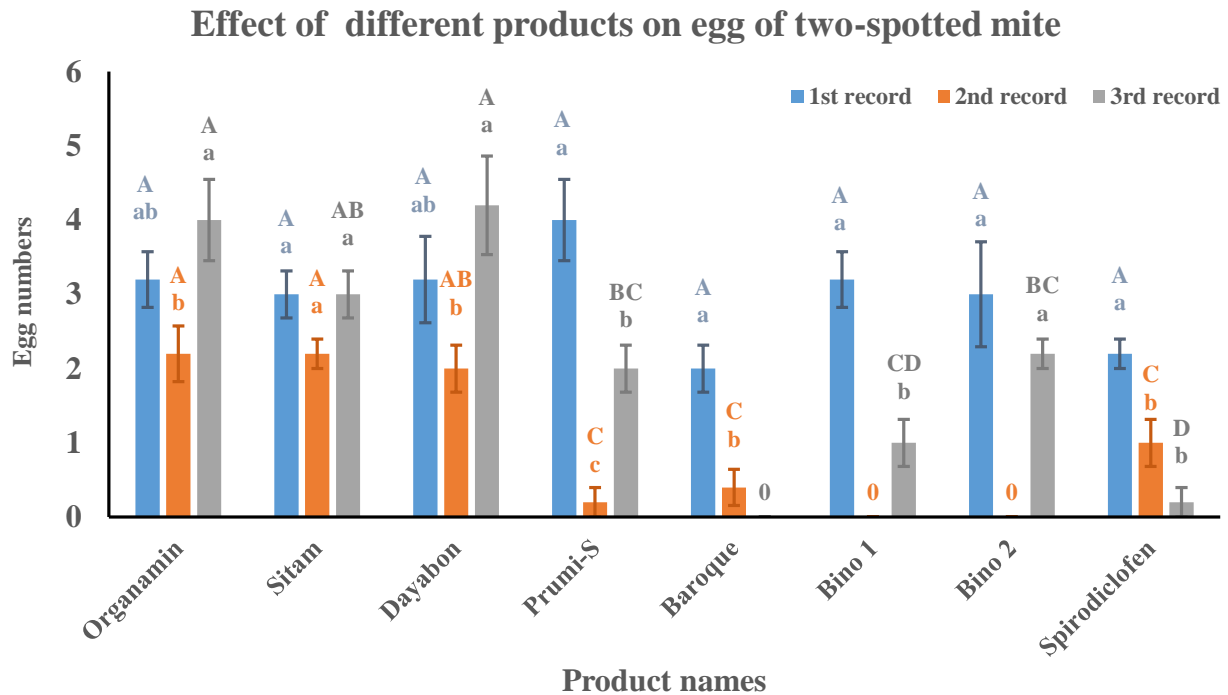


Figure 1- Effect of different products on population eggs of *Tetranychus urticae* on fig

(* The blue, orange and gray lines show recording population of *T. urticae* before using, 7 days and 14 days after using products, respectively)

(* The same capital letters revealed that no significantly difference in different treatments at a same recording, and same lowercase letters revealed that no significantly difference in different recording at a same treatment)

The results of experiments on adults of *T. urticae*:

Analysis of data obtained from experiments showed that, 7 days after using Organamin, Sitam, Dayabon, Parumi-S, Baroque, Bino 1, Bino 2 and Spirodiclofen products, the population of adults of *T. urticae* decreased 57.69%, 83.87%, 80.77%, 50%, 55.55%, 67.74%, 83.33% and 33.33%, respectively. The Sitam, Bino 2 and Dayabon were more effective to decrease population adults of *T. urticae* than the other products (after 7 days). Two weeks after using of Organamin, Sitam, Dayabon, Parumi-S, Baroque, Bino 1, Bino 2 and Spirodiclofen products, the population of adults of *T. urticae* decreased 42.31%, 83.87%, 42.31%, 95%, 69.44%, 100%, 96.67% and 100%, respectively. The Bino 1, Sprodiclofen and Bino 2 products had significantly effect to death adults of two spotted mite on fig (after 14 days) (Figure 2).

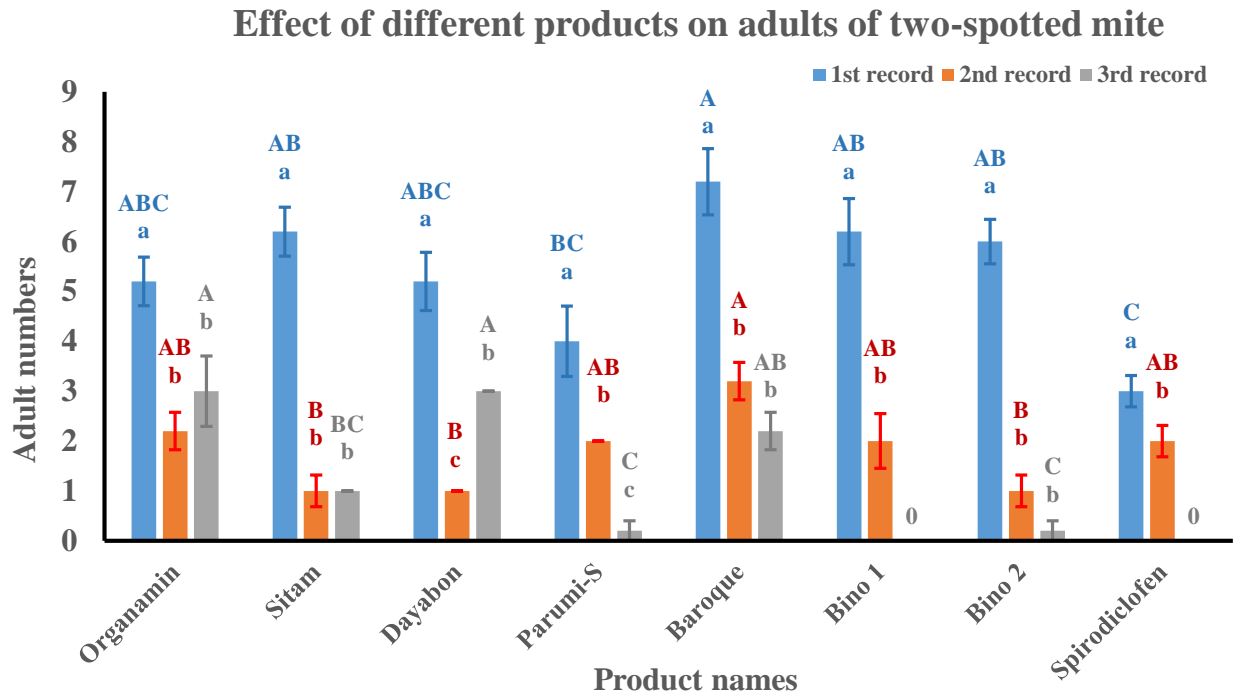


Figure 1- Effect of different products on population of adults of *Tetranychus urticae* on fig

(* The blue, orange and gray lines show recording population of *T. urticae* before using, 7 days and 14 days after using products, respectively)

(* The same capital letters revealed that no significantly difference in different treatments at a same recording, and same lowercase letters revealed that no significantly difference in different recording at a same treatment)

The Organamin had high phytotoxicity, Sitam, Parumi-S and Baroque had little phytotoxicity and Dyabon, Bino 1, bino 2 and Spirodiclofen had no phytotoxicity on fig.

The results showed that Bino 1 and Bino 2 have high ability to death of eggs and adults of *T. urticae*. Also, these products do not have phytotoxicity. Based on above reasons, Bino 1 and Bino 2 are the best products against *T. urticae*. Also, the Spirodiclofen have good efficiency to decrease population of eggs and adults of two-spotted mites.