FIELD EVALUATION OF SOME ATTRACTANTS FOR 
ATTRACTING THE ADULTS OF MEDITERRANEAN 
FRUIT FLY, *CERATITIS CAPITATA* (WIEDEMANN) AND PEACH 
FRUIT FLY, *BACTROCERA ZONATA* (SAUNDERS) IN CITRUS 
ORCHARDS

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**Abstract**

Evaluation of different attractants for attracting the adults of Mediterranean fruit fly (MFF), *Ceratitis capitata* (Wiedemann) and Peach fruit fly (PFF), *Bactrocera zonata* (Saunders) were carried out through two experiments during the two seasons, 2002/2003 and 2003/2004.

In the 1st season (2002/2003), the mean capture per trap per day "CTD" for MFF adults were 0.17, 0.19, 0.05 and 0.04 fly, and the "CTD" for PFF adults were 0.14, 0.08, 0.05 and 0.06 fly for Buminal 5 %, Buminal 10 %, Di-ammonium phosphate 3 % and Bactrogel 1.3 %, respectively.

In the 2nd season (2003/2004), the "CTD" for MFF adults were 0.04, 0.05, 0.09, 0.05 and 0.06 fly, and the "CTD" for PFF adults were 0.94, 0.40, 0.72, 0.22 and 0.40 fly for Buminal 2.5 %, Buminal 5 %, Buminal 10 %, Di-ammonium phosph. 2 %, and Di-ammonium phosph. 3 %, respectively.

All the attractants attracted females more than males for MFF adults during the two seasons. For PFF adults, Buminal 5 % only attracted females more than males during the 1st season, while during the 2nd season, all the attractants attracted males more than females.

**INTRODUCTION**


During the 90's of the last century, the Egyptian ecosystem had neen attacked by one of the most harmful pests, the peach fruit fly (PFF), *Bactrocera zonata* (Saund.). It infested different fruits and vegetables (*e.g.* mango, peach, fig, guava, apple, citrus, tomato, ... etc.) (Oakly, 1948, Narayana and Batra, 1960, Kapoor *et al.*, 1982 and
El-Minshawy et al., 1999). Hafez and Ezzat (1967) used traps baited with 3% solution of diammonium phosphate for monitoring population of C. capitata in the New Valley. Steyskal (1977) mentioned that protein hydrolysate used in McPhail traps (1983) and Anonymous (1985) mentioned that the hydrolyzed protein preparation was used as a bait for certain insects such as med-fly.

Saafan (2000) carried out four experiments at Kalubia Governorate to evaluate some attractants for attracting MFF adults. Hanafy et al. (2001) carried out field evaluation of Di-ammonium phosphate compounds for attracting adults of PFF and MFF in guava orchards at Alexandria region.

Field evaluation of some concentrations of Di-ammonium phosphate for attracting PFF adults were carried out at Fayoum Governorate (Mohammed, 2003). He mentioned that Di-ammonium phosp. with 3% concentration was significantly the most attractive for PFF adults.

The present investigation was designed to evaluate the efficacy of some attractants for attracting the adults of Mediterranean fruit fly (MFF), Ceratitis capitata (Wied.) and Peach fruit fly (PFF), Bactrocera zonata (Saund.) in citrus orchards.

The present investigation is the second one of a serial investigations carried out on mango plantation, on citrus plantation, and on apricot plantation.

**MATERIALS AND METHODS**

Two experiments were carried out in citrus plantation at Sinuris & Ibshaway districts, Fayoum Governorate through the two successive seasons, 2002/2003 and 2003/2004, to evaluate the efficacy of some different attractants for attracting the adult flies of Mediterranean fruit fly, Ceratitis capitata (Wied.) and Peach fruit fly (PFF), Bactrocera zonata (Saund.).

The experiments were carried out in three citrus locations (orchards) which represent the different dynamics of MFF and PFF population.

*The first season (2002/2003):* The 1st experiment was carried out during six weekly inspection (10/12/2002 to 21/1/2003), and the attractants were used as follow:

- Buminal (protein hydrolyzate) as a food attractant (in two concentrations, 5% and 10%, during the 1st season, and in three concentrations, 2.5%, 5% and 10% during the 2nd season).
- Di-ammonium hydrogen orthophosphate as an aggregating attractant (in one concentration, 3% during the 1st season and in two concentrations, 2% and 3% during the 2nd season).
- Bactrogel, wettable powder which is mixed with water to form a gel, for controlling fruit flies (in one concentration, 1.3 % during the 1st season only).

McPhail traps (described by Nicanor et al., 1993) were used and baited weekly with the used attractants.

Five replicates for each concentration were placed in a randomized distribution and the distance between two adjacent traps was 15 meters. The experiment was remained for six weeks. Every week, traps position were changed in a rotation. This rotation gave chance for every concentration of every attractant the same chance to take all position in experiment distance during the experiment periods. The captured flies were collected in plastic jar, inspected in laboratory of Plant Protection Research Institute (PPRI). The captured flies for MFF and PFF (separating males and females) were recorded and the mean captured per trap per day "CTD" for males, females and their total was calculated.

The second season (2003/2004): The experiment was carried out during six weekly inspections (2/12/2003 to 13/1/2004). The same procedures for traps, lures, collecting captured flies, inspections and calculations were conducted as in the 1st season.

Results were analysed using two way ANOVA. Mean separation was conducted using L.S.D. (P > 0.05) (MSTAT Program).

RESULTS AND DISCUSSION

To evaluate efficacy of some different attractants for attracting MFF and PFF adults, two experiments were carried out at Sinuris and Ibshaway districts, Fayoum Governorate on citrus plantation during the two successive seasons, 2002/2003 and 2003/2004.

The first season (2002/2003): During the 1st season, the experiment was carried out through six weekly inspections (10/12/2002 - 21/1/2003) at three locations (orchards).

The comparison between attractants, locations and periods of inspections will done by the term of "CTD" captured per trap per day.

A- Mediterranean fruit fly (MFF) captured:

• The 1st location: Represent relatively the high population for MFF. Table (1) shows that the total mean of "CTD" was 0.34, 0.17, 0.08 and 0.06 fly for Buminal 5%, Buminal 10%, Di-ammon.phosph. 3 % and Bactrogel 1.3 %, respectively.
The statistical analysis of the data showed significant differences between Buminal 5 % and the two attractants, Di-ammon.phosph. 3 % and Bactrogel 1.3 %, while there were insignificant differences in between Buminal 5 % and Buminal 10 % also between Buminal 10 %, Di-ammon. phosph. 3 % and Bactrogel 1.3 %.

- **The 2nd location:** Represent relatively the mid population for MFF. Data in Table (1) indicated that the total mean of "CTD" was 0.13, 0.06, 0.03 and 0.04 fly for Buminal 5 %, Buminal 10 %, Di-ammon.phosph. 3 % and Bactrogel 1.3 %, respectively.

  The statistical analysis of the data showed significant differences between Buminal 5 % and the other three attractants, while there were insignificant differences in between Buminal 10%, Di-ammon.phosph. 3 # and Bactrogel 1.3%.

- **The 3rd location:** Represent relatively the low population for MFF. Data presented in Table (1) showed that the total mean of "CTD" was 0.05, 0.03, 0.03 and 0.02 fly for Buminal 5%, Buminal 10%, Di-ammon.phosph. 3 % and Bactrogel 1.3%, respectively.

  The statistical analysis of the data showed insignificant differences in between the four attractants.

  Summarizing the data in Table 1 it seemed that the grand mean of "CTD" for the three locations was 0.17, 0.09, 0.05 and 0.04 fly for Buminal 5 %, Buminal 10 %, Di-ammon.phosph. 3 % and Bactrogel 1.3 %, respectively.

  The statistical analysis of the data, in Table 1 showed significant differences between Buminal 5 % and the two attractants, Di-ammon-phosph. 3 % and Bactrogel 1.3 %. There were insignificant differences in between Buminal 5 % and Buminal 10 %, also in between Buminal 10 %, Di-ammon.phosph. 3 % and Bactrogel 1.3 %.
Table 1. Mean capture per trap per day "CTD" of MFF in McPhail traps baited with different attractants, in citrus orchards at the three locations during the 1st season (10/12/2002 to 21/1/2003).

<table>
<thead>
<tr>
<th>Attractants</th>
<th>Mean of CTD of MFF during inspection periods</th>
<th>1st location</th>
<th>2nd location</th>
<th>3rd location</th>
<th>Grand mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
</tr>
<tr>
<td>Buminal 5 %</td>
<td></td>
<td>0.07</td>
<td>0.27</td>
<td>0.34 a</td>
<td>0.02</td>
</tr>
<tr>
<td>Buminal 10 %</td>
<td></td>
<td>0.03</td>
<td>0.14</td>
<td>0.17 ab</td>
<td>0.02</td>
</tr>
<tr>
<td>di-Ammonium phosphate 3 %</td>
<td></td>
<td>0.03</td>
<td>0.05</td>
<td>0.08 b</td>
<td>0.01</td>
</tr>
<tr>
<td>Bactrogel 1.3 %</td>
<td></td>
<td>0.01</td>
<td>0.05</td>
<td>0.06 b</td>
<td>0.01</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>0.03 a</td>
<td>0.13 a</td>
<td>0.16 a</td>
<td>0.01 b</td>
</tr>
</tbody>
</table>

LSD values at 0.05 for:

Locations:

Male 0.02
Female 0.07
Total 0.07

Attractants:

0.02
0.08
0.09
B. Peach fruit fly (PFF) captured:

• The 1st location: Represent relatively the high population for PFF. Table 2 shows that the total mean of "CTD" was 0.24, 0.16, 0.06 and 0.10 fly for Buminal 5%, Buminal 10%, Di-ammon.phosph. 3% and Bactrogl 1.3%, respectively.

The statistical analysis of the data showed significant differences between Buminal 5% and the two attractants, Di-ammon.phosph. 3% and Bactrogl 1.3%, and also between Buminal 10% and Di-ammonium phosph. 3%, while there were insignificant differences in between Buminal 5% and Buminal 10%, and also in between Buminal 10% and Bactrogl 1.3%.

• The 2nd location: Represent relatively the mid population for PFF. Data in Table 2 indicated that the total mean of "CTD" was 0.10, 0.04, 0.05 and 0.05 fly for Buminal 5%, Buminal 10%, Di-ammon.phosph. 3% and Bactrogl 1.3%, respectively.

The statistical analysis of the data showed significant differences between Buminal 5% and the other three attractants, while there were insignificant differences in between Buminal 10%, Di-ammon.phosph. 3% and Bactrogl 1.3%.

• The 3rd location: Represent relatively the low population for PFF. Data presented in Table 2 showed that the total mean of "CTD" was 0.07, 0.03, 0.03 and 0.04 fly for Buminal 5%, Buminal 10%, Di-ammon.phosph. 3% and Bactrogl 1.3%, respectively.

The statistical analysis of the data in Table 2 showed significant differences between Buminal 5% and the other three attractants, while there were insignificant differences in between Buminal 10%, Di-ammon. phosph. 3% and Bactrogl 1.3%.

Summarizing the data in Table 2 it seemed that the grand mean of "CTD" for the three locations was 0.14, 0.08, 0.05 and 0.06 fly for Buminal 5%, Buminal 10%, Di-ammon.phosph. 3% and Bactrogl 1.3%, respectively.

The statistical analysis of the data, in Table 2 showed significant differences between Buminal 5% and the other three attractants, while there were insignificant differences in between Buminal 10%, Di-ammon.phosph. 3% and Bactrogl 1.3%.
Table 2. Mean captured trap per day "CTD" of PFF in McPhail traps baited with different attractants, in citrus orchards at the three locations during the 1st season (10/12/2002 to 21/1/2003).

<table>
<thead>
<tr>
<th>Attractants</th>
<th>Mean of CTD of MFF during inspection periods</th>
<th>1st location</th>
<th>2nd location</th>
<th>3rd location</th>
<th>Grand mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
</tr>
<tr>
<td>Buminal 5 %</td>
<td></td>
<td>0.11</td>
<td>0.13</td>
<td>0.24 a</td>
<td>0.03</td>
</tr>
<tr>
<td>Buminal 10 %</td>
<td></td>
<td>0.08</td>
<td>0.08</td>
<td>0.16 ab</td>
<td>0.02</td>
</tr>
<tr>
<td>di-Ammonium phosphate 3 %</td>
<td></td>
<td>0.04</td>
<td>0.02</td>
<td>0.06 c</td>
<td>0.03</td>
</tr>
<tr>
<td>Bactrobel 1.3 %</td>
<td></td>
<td>0.06</td>
<td>0.04</td>
<td>0.10 bc</td>
<td>0.02</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>0.07 a</td>
<td>0.07 b</td>
<td>0.14 a</td>
<td>0.02 b</td>
</tr>
</tbody>
</table>

LSD values at 0.05 for:

Locations:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.04</td>
<td></td>
</tr>
</tbody>
</table>

Attractants:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>
A- Mediterranean fruit fly (MFF) captured:

- The 1st location: Represent relatively the low population for MFF. Table 3 indicated that the total mean of "CTD" was 0.01, 0.02, 0.07, 0.01 and 0.04 fly for Buminal 2.5%, Buminal 5%, Buminal 10%, Di-ammon.phosph. 2% and Di-ammon.phosph. 3%, respectively.

  The statistical analysis of the data showed insignificant differences between Buminal 10 % and the other attractants and also there were significant differences between Di-ammonium phosph. 3 % and the other attractants, while there were insignificant differences in between Buminal 2.5 %, Buminal 5 % and Di-ammonium phosph. 2%.

- The 2nd location: Represent relatively the mid population for MFF. Table 3 shows that the total mean of "CTD" was 0.06 fly for Buminal 2.5%, 0.05 fly for Buminal 5%, 0.04 fly for Buminal 10%, 0.02 fly for Di-ammon.phosph. 2% and 0.06 fly for Di-ammon.phosph. 3%.

  The statistical analysis of the data showed significant differences in between the five attractants.

- The 3rd location: Represent relatively the high population for MFF. Data presented in Table 3 showed that the total mean of "CTD" was 0.07, 0.07, 0.18, 0.12 and 0.08 fly for Buminal 2.5%, Buminal 5%, Buminal 10%, Di-ammon.phosph. 2% and Di-ammon.phosph. 3%, respectively.

  The statistical analysis of the data showed insignificant differences in between the five attractants.

  Summarizing the data in Table 3 it seemed that the grand mean of "CTD" for the three locations was 0.04 fly for Buminal 2.5%, 0.05 fly for Buminal 5%, 0.09 fly for Buminal 10%, 0.05 fly for Di-ammon.phosph. 2%, and 0.06 fly for Di-ammon.phosph. 3%.

  The statistical analysis of the data, in Table 3 showed significant differences between Buminal 10% and the other attractants, while there were insignificant differences in between the Buminal 2.5 % and Buminal 5%, Di-ammon.phosph. 2% and Di-ammon.phosph. 3%.
Table 3. Mean capture per trap per day "CTD" of MFF in McPhail traps baited with different attractants, in citrus orchards at the three locations during the 2nd season (2/12/2003 to 13/1/2004)

<table>
<thead>
<tr>
<th>Attractants</th>
<th>Mean of CTD of MFF during inspection periods</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1st location</td>
<td>2nd location</td>
<td>3rd location</td>
<td>Grand mean</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>Buminal 2.5 %</td>
<td>0.01</td>
<td>0.00</td>
<td>0.01 c</td>
<td>0.01</td>
<td>0.05</td>
<td>0.06 a</td>
<td>0.02</td>
<td>0.05</td>
<td>0.07 a</td>
<td>0.01 c</td>
<td>0.03 a</td>
<td>0.0 b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buminal 5 %</td>
<td>0.00</td>
<td>0.02</td>
<td>0.02 c</td>
<td>0.01</td>
<td>0.04</td>
<td>0.05 a</td>
<td>0.02</td>
<td>0.05</td>
<td>0.07 a</td>
<td>0.01 c</td>
<td>0.04 a</td>
<td>0.05 b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buminal 10 %</td>
<td>0.03</td>
<td>0.04</td>
<td>0.07 a</td>
<td>0.01</td>
<td>0.03</td>
<td>0.04 a</td>
<td>0.06</td>
<td>0.12</td>
<td>0.18 a</td>
<td>0.03 a</td>
<td>0.06 a</td>
<td>0.09 a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>di-Ammonium</td>
<td>0.00</td>
<td>0.01</td>
<td>0.01 c</td>
<td>0.00</td>
<td>0.02</td>
<td>0.02 a</td>
<td>0.02</td>
<td>0.10</td>
<td>0.12 a</td>
<td>0.01 c</td>
<td>0.04 a</td>
<td>0.05 b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>phosphate 2 %</td>
<td>0.01</td>
<td>0.03</td>
<td>0.04 b</td>
<td>0.03</td>
<td>0.03</td>
<td>0.06 a</td>
<td>0.03</td>
<td>0.05</td>
<td>0.08 a</td>
<td>0.02 b</td>
<td>0.04 a</td>
<td>0.06 b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.01 b</td>
<td>0.02 b</td>
<td>0.03 b</td>
<td>0.01 b</td>
<td>0.03 b</td>
<td>0.04 b</td>
<td>0.03 a</td>
<td>0.07 a</td>
<td>0.10 a</td>
<td>0.02</td>
<td>0.04</td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LSD values at 0.05 for:
Locations:
  Male  | 0.01
  Female| 0.03
  Total | 0.04
Attractants:
  | 0.01
  | 0.04
  | 0.04
FIELD EVALUATION OF SOME ATTRACTANTS FOR ATTRACTING THE ADULTS OF MEDITERRANEAN FRUIT FLY, CERATITIS CAPITATA (WIEDEMANN) AND PEACH FRUIT FLY, BACTROCERA ZONATA (SAUNDERS) IN CITRUS ORCHARDS

B- Peach fruit fly "PFF" captured:

• **The 1st location:** Represent the low population for PFF. Table 4 shows that the total mean of "CTD" was 0.32, 0.13, 0.20, 0.05 and 0.11 fly for Buminal 2.5%, Buminal 5%, Buminal 10%, Di-ammon.phosph. 2% and Di-ammon. phosph. 3%, respectively.

  The statistical analysis of the data showed significant differences between Buminal 2.5 % and Di-ammon.phosph. 2 %, while there were insignificant differences in between the four attractants, Buminal 2.5 %, Buminal 5 %, Buminal 10 % and Di-ammon.phosph. 3 %.

• **The 2nd location:** Represent the mid-population for PFF. Data in Table 4 indicated that the total mean of "CTD" was 0.67 fly, 0.33 fly, 1.18 flies, 0.20 fly and 0.46 fly for Buminal 2.5 %, Buminal 5 %, Buminal 10 %, Di-ammon.phosph. 2 % and Di-ammon.phosph. 3 %, respectively.

  The statistical analysis of the data showed insignificant differences in between the five attractants.

• **The 3rd location:** Represent the high population for PFF. Table 4 shows that the total mean of "CTD" was 1.85 flies for Buminal 2.5 %, 0.75 fly for Buminal 5 %, 0.78 fly for Buminal 10 %, 0.40 fly for Di-ammon.phosph. 2 %, and 0.61 fly for Di-ammon.phosph. 3 %, respectively.

  The statistical analysis showed significant differences between Buminal 2.5 % and the two attractants, Di-ammon.phosph. 2 % and Di-ammon.phosph. 3 %, while there were insignificant differences in between the four attractants, Buminal 5 %, Buminal 10%, Di-ammon.phosph. 2 % and Di-ammon.phosph. 3 %, also between Buminal 2.5% and Buminal 10 %.

  Summarizing the data in Table 4 it seemed that the grand mean of "CTD" for the three locations was 0.94 fly for Buminal 2.5%, 0.40 fly for Buminal 5%, 0.72 fly for Buminal 10%, 0.22 fly for Di-ammon.phosph. 2%, and 0.40 fly for Di-ammon.phosph. 3%.

  The statistical analysis of the data, in Table 4 showed significant differences between Buminal 2.5% and the other three attractants, Buminal 5%, Di-ammon.phosph. 2 % and Di-ammon.phosph. 3%, while there were insignificant differences in between the four attractants, Buminal 5%, Buminal 10%, DiAmmon.phosph. 2% and Di-ammon.phosph. 3 %, also between Buminal 2.5% and Buminal 10 %.

  Table 5 illustrated that, all the attractants attracted females more than males for MFF adults during the two seasons. For PFF adults, Buminal 5 % only attracted females
more than males during the 1st season, while during the 2nd season, all the attractants attracted males more than females.

From the forementioned findings, it could be concluded that all the attractants attracted MFF adults relatively equal to PFF adults during the 1st season, while during the 2nd season, all the attractants attracted PFF adults more than MFF adults.

The forementioned data are in disagreement with the findings of Hanafy et al. (2001), where they mentioned that Buminal as a food attractant was lower in capturing PFF adults when compared with Di-ammon.phosph. 3 %.

ACKNOWLEDGEMENT

The author express his deep gratitude to A.A. Mohamed, specialist, Plant Protection Research Institute, ARC, S.A. Gouda and A.T. Hussein, Agronomist, Agric. Admin., Fayoum Governorate for their considerable help in data collection of traps.
Table 4. Mean capture per trap per day "CTD" of PFF in McPhail traps baited with different attractants, in citrus orchards at the three locations during the 2nd season (2/12/2003 to 13/1/2004).

<table>
<thead>
<tr>
<th>Attractants</th>
<th>Mean of CTD of MFF during inspection periods</th>
<th>1st location</th>
<th>2nd location</th>
<th>3rd location</th>
<th>Grand mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Buminal 2.5 %</td>
<td>0.26</td>
<td>0.06</td>
<td>0.32 a</td>
<td>0.64</td>
<td>0.03</td>
</tr>
<tr>
<td>Buminal 5 %</td>
<td>0.12</td>
<td>0.01</td>
<td>0.13 ab</td>
<td>0.31</td>
<td>0.02</td>
</tr>
<tr>
<td>Buminal 10 %</td>
<td>0.18</td>
<td>0.02</td>
<td>0.20 ab</td>
<td>1.15</td>
<td>0.03</td>
</tr>
<tr>
<td>di-Ammonium</td>
<td>0.04</td>
<td>0.01</td>
<td>0.05 b</td>
<td>0.18</td>
<td>0.02</td>
</tr>
<tr>
<td>phosphate 2 %</td>
<td>0.09</td>
<td>0.02</td>
<td>0.11 ab</td>
<td>0.43</td>
<td>0.03</td>
</tr>
<tr>
<td>Mean</td>
<td>0.14 b</td>
<td>0.02 b</td>
<td>0.16 b</td>
<td>0.54 ab</td>
<td>0.03 b</td>
</tr>
</tbody>
</table>

LSD values at 0.05 for:
Locations: Male 0.41  Female 0.02  Total 0.42
Attractants: 0.53  0.03  0.54
Table 5. Mean capture per trap per day "CTD" of male and female of MFF & PFF in McPhail traps baited with different attractants, in citrus orchards at Fayoum Governorate during the two successive seasons; 2002/2003 and 2003/2004.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MFF</td>
<td>PFF</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Buminal 2.5 %</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Buminal 5 %</td>
<td>0.03 a</td>
<td>0.14 a</td>
</tr>
<tr>
<td>Buminal 10 %</td>
<td>0.02 a</td>
<td>0.07 ab</td>
</tr>
<tr>
<td>di-Ammonium phosphate 2 %</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>di-Ammonium phosphate 2 %</td>
<td>0.02 a</td>
<td>0.03 b</td>
</tr>
<tr>
<td>Bactrogel 1.3 %</td>
<td>0.01 a</td>
<td>0.03 b</td>
</tr>
<tr>
<td>Mean</td>
<td>0.02</td>
<td>0.07</td>
</tr>
</tbody>
</table>
REFERENCES


التقييم الحقيقي لبعض الجذبات في جذب الحشرات الكاملة لذبابة فاكهة البحر المتوسط وذبابة ثمار الخوخ في حدائق الموالح

محمد حسن سفان

معهد بحوث وقاية النباتات، مركز البحوث الزراعية، القاهرة - الجيزة، مصر.

نظراً لما تتبعه الجذبات المختلفة لذبابة فاكهة البحر من دور هام في المكاحلة، وأيضاً في الاستدلال على وجود الذباب، فقد تم التقييم الحقيقي لجذبات مختلفة لجبذ ذبابة فاكهة البحر المتوسط وذبابة ثمار الخوخ وذلك في سلسلة أحيان أجريت في حدائق المناجم والموالح والمشاتر.

وهذا البحث هو الثاني .. والذي أجري في حدائق الموالح بمركز سنورس ولئن ورام بمحافظة القيوم خلال موسمي 2002/2003، 2003/2004. وكانت نتائج تقييم المواد المختارة كالتالي:

خلال الموسم الأول (2002/2003) كان مجموع الذباب المنجب للمصيدة الواحدة في اليوم الواحد "CTD" بالنسبة لذبابة فاكهة البحر المتوسط هو 0/17 ذبابة، 0/9 ذبابة، 0/5 ذبابة، 0/4 ذبابة، 0/3 ذبابة، وكانت قيم "CTD" بالنسبة لذبابة الخوخ هي 0/14 ذبابة، 0/8 ذبابة، 0/5 ذبابة، 0/3 ذبابة، وذلك للذبابات: "موميلان 5%، موميلان 10%، داي آمونوم فوسفيس 3%، بتروجيل 3.3%، على التوالي.

خلال الموسم الثاني (2003/2004) كان مجموع الذباب المنجب للمصيدة الواحدة في اليوم الواحد "CTD" بالنسبة لذبابة فاكهة البحر المتوسط هو 0/4 ذبابة، 0/5 ذبابة، 0/5 ذبابة، 0/5 ذبابة، 0/3 ذبابة، وكانت قيم "CTD" بالنسبة لذبابة الخوخ هي 0/4 ذبابة، 0/4 ذبابة، 0/2 ذبابة، 0/1 ذبابة، 0/1 ذبابة، وذلك للذبابات: "موميلان 2%، داي آمونوم فوسفيس 3%، على التوالي.

الذبابات المختارة جذبت ذبابة فاكهة البحر المتوسط أكثر من الذكور وذلك خلال موسمي التجربة. وبالنسبة لذبابة الخوخ وجد أن الموميلان 5% فقط جذب الذكور أكثر من الذكور وذلك خلال الموسم الأول. ولكن، خلال الموسم الثاني، الذبابات المختارة جذبت ذكور ذبابة الخوخ أكثر من الإناث.