Methods for testing parasitoid wasps against some stored product lepidopterous pests

**Trichogramma** candidates

- *T. euproctidis*
- *T. cacociae*
- *T. cordubensis*
- *T. bourarachae*

**Parasitized eggs**

- **Strip card method**
- **Square card method**

**Methods for testing host preference**

- **Strip card method**
- **Square card method**

**Hosts were eggs of following moths**

- *Cadra cautella*
- *E. kuehniella*
- *E. eulutella*
- *P. interpunctella*

**Table 1: Average parasitic capacity / day of individual females (n = 10 x 3 trials) of five Trichogramma species provided with unlimited host eggs.**

<table>
<thead>
<tr>
<th>Trichogramma spp</th>
<th>Host - eggs</th>
<th>T. borarachae</th>
<th>T. cacociae</th>
<th>T. eupalus</th>
<th>T. eupalus</th>
</tr>
</thead>
<tbody>
<tr>
<td>T. borarachae</td>
<td></td>
<td>34.7 ± 0.9</td>
<td>34.4 ± 1.6</td>
<td>34.7 ± 0.9</td>
<td>34.7 ± 0.9</td>
</tr>
<tr>
<td>T. cacociae</td>
<td></td>
<td>37.7 ± 1.6</td>
<td>34.7 ± 0.9</td>
<td>37.7 ± 1.6</td>
<td>37.7 ± 1.6</td>
</tr>
<tr>
<td>T. eupalus</td>
<td></td>
<td>37.7 ± 1.6</td>
<td>34.7 ± 0.9</td>
<td>37.7 ± 1.6</td>
<td>37.7 ± 1.6</td>
</tr>
</tbody>
</table>

**Abstract**

The host-preference and parasitic capacity of four new local *Trichogramma* spp. towards four species of stored product lepidopterous eggs was investigated in laboratory experiments in order to select new candidate species for inundative releases against some insect pests in product storages. Experiments were carried out by offering a single parasitoid female the choice between equal numbers of host eggs on square cards and/or strip cards. In a Petri dish, bioassay for host egg mass preference and parasitic capacity of four local *Trichogramma* species were collected from arid and semi-arid areas in Egypt. These were *T. borarachae*, *T. cordubensis*, *T. eupalus*, and *T. cacociae*. The bioassay for host-preference of *Trichogramma* was carried out by offering a single female wasp the choice between equal numbers of host eggs on square cards and for strip cards. In a Petri dish, E. kuehniella was a highly acceptable host species for *bourarachae*, *eupalus*, and *cacociae* wasps. While *eupalus* and *cacociae* eggs were more acceptable for *eupalus* and *cordubensis*, respectively. In strip card method, *E. kuehniella* eggs were highly acceptable for *bourarachae*, *eupalus*, and *eupalus*. Eggs of *eupalus* and *cacociae* were more acceptable for *eupalus* and *eupalus*, respectively. The comparative study of parasitic capacity of the *Trichogramma* spp. was carried out under ‘no choice conditions’ by exposing freshly emerged single wasps to an unlimited number of host eggs. Significant differences were found among the parasitic capacity of the tested *Trichogramma* spp. *T. cordubensis* and *T. eupalus* showed a good parasitic potential against *P. interpunctella* and *E. kuehniella*; *T. borarachae* against *P. interpunctella*, and *E. kuehniella* against *E. kuehniella*. However, dissection of host eggs with wasp-emergence holes showed that all tested wasps had a propensity to superparasitize the host eggs. *T. cordubensis*, *T. eupalus*, and *T. borarachae* showed promise for further investigation into selecting a biological control agent against stored product lepidopterous pests in arid conditions.

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