STUDIES ON EFFECTS OF CHROMOLAENA ODORATA ROOTS ON ROOT-KNOT NEMATODES (MELOIDOGYNE INCognITA)

by
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Summary. In a greenhouse experiment neither a toxic effect of Chromolaena odorata roots on Meloidogyne incognita juveniles in soil was observed nor an influence on the multiplication rate of the nematode in roots of tomato plants grown in close contact with C. odorata roots.

Results and conclusions

The results of the experiment are compiled in Table I, which gives the means for the final nematode densities ($P_f$), multiplication rates ($P_f/P_i$) and the root-knot indices.

All treatments with tomato, alone or in combinations, resulted in high multiplication rates of $M. incognita$, but the population increase was less in combination with Tagetes or Crotalaria compared with tomato + Chromolaena or tomato alone. In the treatment with Chromolaena alone the population decrease was about the same as in the pots without plants. The roots of tomato plants were heavily galled after two months. The Crotalaria plants exhibited a much lower number of galls and egg masses, whereas a total of only three galls and egg masses was counted on the roots of Chromolaena.

The results of the experiment show that there appears to be neither a toxic effect of $C. odorata$ roots on $M. incognita$ juveniles in soil nor an influence on the multiplication rate of the nematode in roots of a good host plant grown in close contact with $C. odorata$ roots. The non-host status of $C. odorata$ to $M. incognita$ is confirmed.

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TABLE I - Population development of *Meloidogyne incognita* and root-knot indices two months after transplanting.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Nematodes per 100 ml of soil (P&lt;sub&gt;f&lt;/sub&gt;)</th>
<th>P&lt;sub&gt;f&lt;/sub&gt;/P&lt;sub&gt;i&lt;/sub&gt;</th>
<th>Root-knot index*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromolaena alone</td>
<td>132</td>
<td>0.23</td>
<td>0</td>
</tr>
<tr>
<td>Tomato alone</td>
<td>57 201</td>
<td>100.7</td>
<td>3</td>
</tr>
<tr>
<td>Tomato + <em>Chromolaena</em></td>
<td>61 889</td>
<td>109.0</td>
<td>3</td>
</tr>
<tr>
<td>Tomato + <em>Tagetes</em></td>
<td>27 646</td>
<td>48.7</td>
<td>3</td>
</tr>
<tr>
<td>Tomato + <em>Crotalaria</em></td>
<td>34 221</td>
<td>60.2</td>
<td>3</td>
</tr>
<tr>
<td>Fallow</td>
<td>57</td>
<td>0.10</td>
<td>-</td>
</tr>
</tbody>
</table>

* Root-knot indices were 0 = no galls or egg masses, 1 = 1-10, 2 = 11-30, 3 = > 30 galls or egg masses per plant.

Freiburg for supplying *C. odorata* plants originating from West Africa of which series of young plants were reared for the experiment.

**Literature cited**


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