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IMPROVING BEAN PERFORMANCE UNDER GOLDEN MOSAIC VIRUS EPIPHYTOTIC CONDITIONS I.
USE OF PEANUTS AS PROTECTIVE

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Golden mosaic virus is a limiting factor for bean production in many areas in Brazil. Information brought to this Center by extension agents, revealed that farmers in the states of Minas Gerais and Mato Grosso do Sul had improved bean yields by planting peanuts and beans in common rows.

In order to test this system experiments were undertaken in 1981, in Rio Verde, GO with four blocks constituted of twenty 25 m rows each, with the following arrangements:

Block 1 - Tayhú, a suscetible cultivar, with 12 seeds plus 20 seeds of peanuts per linear meter;

Block 2 - Turrialba 1, a tolerant cultivar, with 12 seeds plus 20 seeds of peanuts per linear meter;

Block 3 - Tayhú, as a single crop with 12 seeds per linear meter;

Block 4 - Turrialba-1, as a single crop, with 12 seeds per linear meter.

The main goals were: i) to compare yields of a tolerant versus a susceptible cultivar and ii) to observe the effects of peanuts on the incidence of golden mosaic virus on bean yield. Field observation revealed that no significant differences were detected for golden mosaic virus symptomology for each cultivar. However, Tayhú showed more sympoms than Turrialba-1.

Table 1 shows highly negative effects of peanuts on Tayhú and Turrialba-1 for seed weight/m² and number of seeds per pod. A slight decrease was noticed for dry seed weight and number of pods per plant. These results and observation conducted at farmers' fields, suggested that peanuts effects have been detrimental to bean yields, and this work has been discontinued.
Table 1. Peanuts effect on yield of bean cultivars Tayhů (susceptible) and Turrialba-1 (tolerant) when sown in the same row, under golden mosaic virus epiphytotic conditions in Rio Verde, GO, Brazil, 1981*.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Total dry weight (g)</th>
<th>Seed weight (g)</th>
<th>No of pods per plant</th>
<th>No of seeds per pod</th>
<th>Stand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tayhů plus peanuts</td>
<td>52.01 (27.1-68.9)(^1)</td>
<td>4.09 (0.8-9.8)(^1)</td>
<td>2.70 (1.45-4.77)(^1)</td>
<td>1.58 (0.45-2.35)(^1)</td>
<td>16.0</td>
</tr>
<tr>
<td>Tayhů as single crop</td>
<td>58.26 (20.9-82.7)(^1)</td>
<td>8.91 (3.5-13.0)(^1)</td>
<td>2.97 (1.60-5.83)(^1)</td>
<td>2.20 (0.85-3.65)(^1)</td>
<td>19.0</td>
</tr>
<tr>
<td>Turrialba-1 plus peanuts</td>
<td>70.07 (18.6-123.2)(^1)</td>
<td>7.19 (0.8-15.7)(^1)</td>
<td>2.62 (0.76-4.17)(^1)</td>
<td>1.74 (0.40-2.95)(^1)</td>
<td>20.7</td>
</tr>
<tr>
<td>Turrialba-1 as single crop</td>
<td>85.47 (61.0-113.4)(^1)</td>
<td>12.82 (4.4-25.5)(^1)</td>
<td>3.32 (1.70-5.40)(^1)</td>
<td>2.50 (1.65-3.55)(^1)</td>
<td>22.2</td>
</tr>
</tbody>
</table>

* mean of twenty 1 m\(^2\) samples
\(^1\) between parenthesis values represent the range.