Factors Affecting 'Omer' and 'Maya' Mango Production in Israeli Orchards

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* A new Israeli cultivar (first bred 10 years ago)
* Excellent taste
* Bright purple peel color
* Fruit can be stored at ~4 °C for ~2 months
'Maya'

* An Israeli cultivar (first bred 60 years ago)
* Picked fully mature ("ready to eat")
* Excellent taste
* Attractive yellow-orange peel color
* The fruit is usually smaller than required
The Orchards

* Mature orchards, located in the northern part of Israel
* Mediterranean subtropical weather conditions (cold and rainy winter and warm summer with no rain).
* Trees grafted on 13-1 rootstock
* Tree spacing 4 6 m (420 tree/ha)
Phenology and Weather Conditions During Flowering

2010 = Cold in full bloom
2011 = Rain
2012 = Late and short season

Each season was different
Weather Conditions During Fruit Development

Relatively low maximum daily temperatures during 2011 fruit development
Does the Bloom Date Affect Inflorescence Production?
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“Full bloom” Inflorescence

Inflorescence development
Does the Bloom Date Affect Inflorescence Production?

'Vermer' fruit-bearing inflorescences (%)

Inflorescence full bloom date

'Maya' fruit-bearing inflorescences (%)

Inflorescence full bloom date

No clear positive correlation between bloom date and inflorescence production.
Does Early Inflorescence Removal Improve Productivity?
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Early inflorescence removal did not elevate productivity.
Does Autumn Vegetative Shoot Growth Influence Fruit Load?
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No vegetative growth

One vegetative flush

Two vegetative flushes
Fruit load is positively related to the previous autumn's vegetative growth intensity.

**Does Autumn Vegetative Shoot Growth Influence Fruit Load?**

<table>
<thead>
<tr>
<th>Shoot Type</th>
<th>Fruit per Shoot</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Omer'</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>A</td>
</tr>
<tr>
<td>2012</td>
<td>a</td>
</tr>
<tr>
<td>no vegetative growth</td>
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</tr>
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</tr>
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<td>two vegetative flushes</td>
<td>a</td>
</tr>
</tbody>
</table>

| 'Maya'     |                 |
| 2011       | A               |
| 2012       | a               |
| no vegetative growth | B               |
| one vegetative flush | a              |
| two vegetative flushes | a         |
Do Differences in Weather Conditions Affect Productivity?
'Omer' Production

- 'Omer' fruit per tree
  - Cultivar: A, B, C

- 'Omer' fruit weight (g)
  - Cultivar: A, B, C

- 'Omer' yield (kg/tree)
  - Cultivar: A, B, C

Each year, cultivar A consistently outperforms B and C in terms of fruit weight and yield.
'Maya' Production

- **Maya' yield (kg/tree)**
  - Year 2010: A
  - Year 2011: A
  - Year 2012: A

- **Maya' fruit per tree**
  - Year 2010: A
  - Year 2011: A
  - Year 2012: A

- **Maya' fruit weight (g)**
  - Year 2010: B
  - Year 2011: A
  - Year 2012: C
Do Differences in Weather Conditions Affect Productivity?

Moderate temperatures during fruit development contributed to 'Omer' yield and number of fruit per tree and to 'Maya' fruit size.
Factors Affecting 'Omer' and 'Maya' Production in Israeli Orchards

Summary:

1. No clear positive correlation between bloom date and inflorescence production was found
2. Early inflorescence removal did not elevate productivity
3. Fruit load is positively related to the previous autumn's vegetative growth intensity
4. The moderate temperatures during fruit development contributed to production
Thank you