New Hass-like avocado cultivars: Evaluation of Harvest and Gem at Westfalia, South Africa

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Introduction

- Hass popular due to its excellent shelf life and eating quality
- Hass trees tend to produce a large percentage of undersized fruit within a relatively short season (peak picking June and July)
- Niche market for smaller Hass fruit (180-250g)
- Alternate bearing pattern
Aims

- To find a new Hass-like cultivar with consistently higher yield and more favourable fruit size distribution than Hass
- Extend the Hass season

Evaluating cultivars: Long-term project

- Import of budwood: Year 0
- Quarantine: Year 1
- Propagation (top-working): Year 2
- First experimental crop: Year 4-5
- Pre-commercial evaluation: Year 8
- Negotiation of commercialisation: Year 10
- Preparation for commercial planting: Year 12-15
New Hass-like cultivars

- Harvest and Gem
- Budwood imported from California in 1995
- Top-working started 1996
- Hass as standard

Parameters monitored

- Time of maturity
- Yield
- Fruit size distribution
- Fruit quality
  - picked on several dates from June to October
  - evaluated after simulated shipment (5.5°C, 28 days)
- Taste
## Results 2003

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Start of picking</th>
<th>End of picking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cultivar</td>
<td>Month</td>
</tr>
<tr>
<td>Hass</td>
<td></td>
<td>June</td>
</tr>
<tr>
<td>Harvest</td>
<td></td>
<td>July</td>
</tr>
<tr>
<td>Gem</td>
<td></td>
<td>Sept</td>
</tr>
</tbody>
</table>

## Yields 1999 - 2003

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Yield (t/ha)</th>
<th>Count peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvest</td>
<td>29</td>
<td>37</td>
</tr>
<tr>
<td>Gem</td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>Hass</td>
<td>3</td>
<td>20</td>
</tr>
</tbody>
</table>

1. extrapolated to 200 trees/ha
2. based on a 4 kg carton

Stefan Kohne (September 2004)
Fruit quality 2002-2003

- Gem
  - good fruit quality in 2002 and 2003

- Harvest
  - high incidence of vascular browning in 2002
  - good fruit quality in 2003

Conclusions

- Gem, and to some extent Harvest, have potential
- Next step: evaluation in other South African production regions
- Performance on new rootstocks to be evaluated
- Cultivar specific protocol for post-harvest handling to be established
Commercialisation of new cultivars

Lamb Hass

- about 2% of Hass volume
- logistics of exporting small volumes
- ripening / handling

Acknowledgements

- University California, Riverside
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