Production of Banana Genotypes under Subtropical Condition - Ribeira Valley, São Paulo, Brazil

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Introduction - Banana

- 2nd place on Brazilian fruits production
- Brazilian production: 7.1 million tons
- Area: 500,000 ha
- Production in all States
- Produced in 286 cities of São Paulo
- São Paulo → Ribeira Valley
Banana production in São Paulo
Ribeira Valley – São Paulo

• Production: over than 952,700 tons (2009)
• 75.8% of the State production
• Area: 34 500 ha (65.1% of the State)
• small properties
• generation of employment and development
Regional problems

Rugged Geography

Black Sigatoka

Flood
Traditional Cultivars

Nanica (AAA)
Nanicão (AAA)
Grand Naine (AAA)
Prata anã (AAB)
Pacovan (AAB)
Maçã (AAB)
Terra (AAB)

All susceptible to Black Sigatoka fungous
Points on cultivars selection

• agronomic potential:
  – productivity
  – tolerance to pests and diseases
  – resistance to drought and cold
  – good post-harvest characteristics
  – plants high

• consumer preference:
  – interesting flavor
  – appropriate size
This study aimed to assess the production of 20 banana genotypes to soil and climatic condition of Ribeira Valley region.
Material and Methods

- Experimental area: APTA’s farm
- Pariquera-Açú, SP, Brazil
- Genotypes were planted in single block
- 2.5 x 3.0 m spaced
- Randomized design
- 20 treatments (banana genotypes)
- 8 repetitions
- calculated confidence intervals (mean ± standard error)
## Evaluated Genotypes

### AAAA group
- Bucaneiro
- FHIA02
- FHIA17
- Grand Naine

### AAAB group → 3 types:

1) **Prata**
   - Garantida
   - FHIA18
   - Maravilha
   - PA42-44
   - PA94-01
   - Prata-anã

2) **Pacovan**
   - Japira
   - Pacovan Ken
   - PV79-34
   - PV94-01
   - Vitoria
   - Pacovan

3) **Maçã**
   - Tropical
   - YB42-03
   - YB42-07
   - Yangambi
Results

The best genotypes results were:

• AAAA group: FHIA 02 and FHIA 17

• AAAB group
  – Type Prata: FHIA 18 and PA94-01
  – Type Pacovan: high plants*
  – Type Maçã: YB42-07
AAA group

± production per cycle
(1\textsuperscript{st} cycle: 10.9 kg; 2\textsuperscript{nd} cycle: 22.3 kg)

+ 

↓ interval between harvest

↓

good production per ha year\(^{-1}\)

1\textsuperscript{st} cycle: 13.7; 2\textsuperscript{nd} cycle: 31.5 t ha year\(^{-1}\)
AAAA group

↑ production per cycle
(1<sup>st</sup> cycle: 33.9 kg; 2<sup>nd</sup> cycle: 26.3 kg)

+  

↑ cycle

↓

Reduction of production per ha year<sup>-1</sup>
1<sup>st</sup> cycle: 30.6; 2<sup>nd</sup> cycle: 30.7 t ha year<sup>-1</sup>
FHIA 18

AAAB group
type Prata

± bunch weight
1st cycle: 9.9 kg; 2nd cycle: 16.3 kg
+  
↓ cycle

↓

Yield close to PA94-01
1st cycle: 13.2; 2nd cycle: 21.6 t ha year⁻¹
AAAB group type Prata

↑ bunch weight
1\textsuperscript{st} cycle: 14.8; 2\textsuperscript{nd} cycle: 18.7 kg

+ 

↑ cycle

↓

Similar yield to FHIA 18
1\textsuperscript{st}: 13.2; 2\textsuperscript{nd}: 21.6 t ha year\textsuperscript{-1}
<table>
<thead>
<tr>
<th>AAAB group type Maçã</th>
<th>Bunch Fresh Weigh (kg)</th>
<th>Yield (t ha$^{-1}$ year$^{-1}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1$^{st}$ cycle</td>
<td>2$^{nd}$ cycle</td>
</tr>
<tr>
<td>Yangambi</td>
<td>13.3</td>
<td>16.0</td>
</tr>
<tr>
<td>Tropical</td>
<td>9.2</td>
<td>9.3</td>
</tr>
<tr>
<td>YB42-03</td>
<td>6.6</td>
<td>8.3</td>
</tr>
<tr>
<td>YB42-07</td>
<td>7.7</td>
<td>9.8</td>
</tr>
</tbody>
</table>
Conclusion

FHIA 02, FHIA 17, FHIA 18, PA94-01, YB42-07:

– production parameters
– fruit quality
– Sigatoka resistance.

These materials are promising to be incorporated into the production systems of Ribeira Valley.
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