Identification and bio-agronomical study of seven biotypes of Azarole (Crataegus azarolus L.)

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Materials and methods

The present study aims at observing and identifying both botanical and bio-agronomical differences existing among seven ecotypes of Azarole (Crataegus azarolus L.) which are to be found in the province of Bari. Prospecting studies (1981-82) were carried out in order to identify the local biotypes of the above mentioned province.

The most significant biotypes, gathered in local farms (Crataegos barcolaensis L.), were planted in the Agricultural Experimental Station “P. Muratino”, connected to the Department of Plant Production Science - University of Bari.

The biotypes studied were given the names of their places of origin. The description of both botanical and bio-agronomical peculiarities was carried out thanks to the observation, the measurement and a multiannual determination of parameters that took into consideration branches, foliage, flowers and fruits.

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Results:

- tab.1: fenogrammi di fioritura dei biotipi in studio
- fig.1: diagramma riassuntivo delle principali caratteristiche botaniche e bio-agronomiche dei biotipi studiati

Conclusion:

- The biotypes studied were given the names of their places of origin.
- The description of both botanical and bio-agronomical peculiarities was carried out thanks to the observation, the measurement and a multiannual determination of parameters that took into consideration branches, foliage, flowers and fruits.

Tab.1: fenogrammi di fioritura dei biotipi in studio

<table>
<thead>
<tr>
<th>Ecotypo</th>
<th>Aprile</th>
<th>Maggio</th>
<th>Durata giorni</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquaviva</td>
<td>1-5</td>
<td>10-15</td>
<td>5-10</td>
</tr>
<tr>
<td>Corato</td>
<td>1-5</td>
<td>10-15</td>
<td>5-10</td>
</tr>
<tr>
<td>Santeramo 1</td>
<td>1-5</td>
<td>10-15</td>
<td>5-10</td>
</tr>
<tr>
<td>Modugno 1</td>
<td>1-5</td>
<td>15-20</td>
<td>10-15</td>
</tr>
<tr>
<td>Modugno 2</td>
<td>1-5</td>
<td>15-20</td>
<td>10-15</td>
</tr>
<tr>
<td>Santeramo 2</td>
<td>1-5</td>
<td>15-20</td>
<td>10-15</td>
</tr>
<tr>
<td>Sante R 2</td>
<td>1-5</td>
<td>15-20</td>
<td>10-15</td>
</tr>
</tbody>
</table>

**ACQUAVIVA 3**

**Fruit set:** 68.8% by open pollination, 30.2% by self-pollination.

- **Ripening period:** two to eight days of August. Soluble solids 7.20 °Brix. Titrable acidity (pomalous acid) = 0.89 gr/L.
- **Fruit:**
  - **Shape:** globose.
  - **Equatorial section:** oval.
  - **Longitudinal section:** asymmetrical.
  - **Leaf:**
    - **Length:** 5.10 cm; **width:** 2.29 cm; **thickness:** 1.23 mm; **flesh thickness:** 0.65 mm; **average weight:** 3.07 gr.; **2-3 seeds per fruit.**

**MODUGNO 1**

**Fruit set:** by open pollination 65.30% and 94.20% by self-pollination.

- **Ripening period:** second half of August. Soluble solids 12.00 °Brix. Titrable acidity (pomalous acid) = 1.5 gr/L.
- **Fruit:**
  - **Shape:** globosse.
  - **Equatorial section:** circular.
  - **Longitudinal section:** symmetrical.
  - **Leaf:**
    - **Length:** 6.70 cm; **width:** 3.23 cm; **thickness:** 1.23 mm; **flesh thickness:** 0.65 mm; **average weight:** 4.78 gr.; **2-3 seeds per fruit.**

**CORATO**

**Fruit set:** 73.30% by open pollination, 55.80% by self-pollination.

- **Ripening period:** second half of August. Soluble solids 16.5 °Brix. Titrable acidity (pomalous acid) = 2.9 gr/L.
- **Fruit:**
  - **Shape:** globosse.
  - **Equatorial section:** circular.
  - **Longitudinal section:** asymmetrical.
  - **Leaf:**
    - **Length:** 1.83 cm; **width:** 1.87 cm; **average weight:** 6.32 gr.; **2-3 styles per flower.**

**SANTERAMO 1**

**Fruit set:** by open pollination 74.65% by open pollination, 46.40% by self-pollination.

- **Ripening period:** third last days of September. Soluble solids 13.80 °Brix. Titrable acidity (pomalous acid) = 1.2 gr/L.
- **Fruit:**
  - **Shape:** globosse.
  - **Equatorial section:** circular.
  - **Longitudinal section:** symmetrical.
  - **Leaf:**
    - **Length:** 7.80 cm; **width:** 2.23 cm; **thickness:** 1.77 mm; **flesh thickness:** 0.63 mm; **average weight:** 7.03 gr.; **2 seeds per fruit.**

**SANterAMO 2**

**Fruit set:** by open pollination 79.85% by open pollination, 74.80% by self-pollination.

- **Ripening period:** second half of August. Soluble solids 14.00 °Brix. Titrable acidity (pomalous acid) = 0.93 gr/L.
- **Fruit:**
  - **Shape:** globosse.
  - **Equatorial section:** circular.
  - **Longitudinal section:** symmetrical.
  - **Leaf:**
    - **Length:** 5.30 cm; **width:** 2.10 cm; **thickness:** 1.99 mm; **flesh thickness:** 0.59 mm; **average weight:** 11.70 gr.; **2 seeds per fruit.**

**Leaf**

- **Length:** 6.70 cm; **width:** 3.23 cm; **length of the leaf stalk:** 0.70 cm; **average length of the first leaf lobe:** 2.69 cm; **average length of the entire leaf:** 6.40 cm; **length/width ratio of the first leaf lobe:** 2.06 in the foliage of the fruiting branches and 3.15 for the vegetative ones.
- **One-year shoots:** silky and light brown after lignification; medium-low number of whitish hazel-brown lenticels.

**Tab.1: fenogrammi di fioritura dei biotipi in studio**

- **Fruit**
  - **Shape:** globosse.
  - **Equatorial section:** circular.
  - **Longitudinal section:** symmetrical.
  - **Leaf:**
    - **Length:** 7.80 cm; **width:** 2.23 cm; **length of the leaf stalk:** 0.70 cm; **average length of the first leaf lobe:** 2.69 cm; **average length of the entire leaf:** 6.40 cm; **length/width ratio of the first leaf lobe:** 2.06 in the foliage of the fruiting branches and 3.15 for the vegetative ones.

- **One-year shoots:** silky and light brown after lignification; medium-low number of whitish hazel-brown lenticels.

**Leaf**

- **Length:** 6.70 cm; **width:** 3.23 cm; **length of the leaf stalk:** 0.70 cm; **average length of the first leaf lobe:** 2.69 cm; **average length of the entire leaf:** 6.40 cm; **length/width ratio of the first leaf lobe:** 2.06 in the foliage of the fruiting branches and 3.15 for the vegetative ones.

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