Calibrachoa xhybrida

selections 20080512x2 & 20080512x3

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HORT 5051
Taxonomy

- Scientific Name: *Calibrachoa xhybrida*
- Common Names: Million Bells, Superbells, Mini Petunia, Trailing Petunia
- Family: Solanaceae
Geography

- Calibrachoa is native to South America and North America (*C. parviflora*).
- *C. humilis* is native to Southern Brazil, west to Peru and Chile.
- *Calibrachoa parviflora* is native to United States, Mexico.
- Latitudinal Range(s):
  - In South America, *Calibrachoa humilis* is roughly between 15 and 30 degrees south.
  - In North America, *Calibrachoa parviflora* is roughly between 20 and 35 degrees north.
- Grows in warm, moist to moderately dry environments.
- *C. parviflora* has been shown to naturalize in Florida.
Taxonomic Description

- Mounding/trailing habit
- Grows to height of 3-9 inches; spreads 6-24 inches.
- Fine-textured foliage
- Fibrous root system.
- Leaves are simple round-oblance; alternate, becoming opposite after flowers develop.
- Flower:
  - 1” wide bell-shaped flowers in a wide range of colors, including violet, blue, pink, red, magenta, yellow, bronze, and white.
- Season of Bloom:
  - Late spring-fall (May-October). Will even continue blooming when temperatures fall into the 20s F.
- Other uses:
  - Used most commonly as a container/ hanging basket plant, although in hardy ranges it can be used as a perennial landscape plant.
Varieties/Cultivars

- ‘Lirica Showers'
- ‘Million Bells' – first series on the market
- ‘Terracota'
- ‘Starlette'
- ‘Colorburst'
- ‘Superbells'
- ‘Callie’ – well-branched
Propagation

- Vegetative propagation is standard; most cultivars produce very little seed
- Ball Horticultural Company is a major source of plant material.
- Proposed propagation methods & temperatures:
  - Use a well-drained medium with an EC of 0.75 to 0.80 mmhos.
  - Avoid excessive misting.
  - Constant rooting temperatures between 20 and 23 degrees C are optimal.
  - Apply up to 2500 ppm IBA or 500 ppm NAA to improve rooting uniformity.
  - As roots develop, fertilize with 150 to 200 ppm N CLF.
  - Once roots have developed, the medium should not remain saturated.
The Ideal Crop...

- Would have flowers that open/remain open on cloudy days
- Would be able to thrive in higher pH regimes.
Market Niche

- Grown primarily for spring sales (Mother’s Day)
  - Also a good candidate for late summer sales
- Can be forced year round.
  - A facultative long-day plant; additional indoor supplemental lighting may be necessary for late-season production.
- Crops with which this will compete in the market:
  - petunia and verbena
- Its flower power and drought tolerance make this a major crop.
- It is not yet identifiable to most customers by name, although many customers will recognize it when they see it.
Cultural Requirements

- Winter Hardiness (USDA Zones):
  - Zone 9-11
- Heat/Drought Tolerance:
  - Calibrachoa is known to be heat and drought tolerant.
- Temperature (day/night):
  - Day temperatures: 21-24 degrees C
  - Night temperatures: 10-14 degrees C
  - Temperatures higher than this may cause unwanted stretch and poor branching.
- Light quantity, quality, duration; photoperiod response:
  - 5000-8000 foot candles
  - Low light levels may cause unwanted stretching.
  - Long days promote better flowering.
Cultural Requirements

- Calibrachoa are heavy feeders. A fertilizer with 250-300 ppm N CLF should be used.
  - Additional iron should be supplemented to avoid chlorosis.
- If high salt levels build up, clear water should be used every third watering.

...UGLY!
Cultural Requirements

- **Soil:**
  - Calibrachoa requires a well-drained medium with a pH of 5.4-5.8.
  - pH should be tested every 14 days or when early signs of elevated pH become evident. To lower pH, an acidic feed or drench of chelated iron can be applied.

- **Plant growth regulators:**
  - 1+ applications of 1500-3000 ppm B-9/ 20-50 ppm A-Rest/ 20-30 ppm Sumagic/ 3-9 ppm Bonzi. PGRs should not be applied after VBD has been reached.

- **Container size (through entire production cycle):**
  - From rooted cuttings, Calibrachoa can be grown in 4” pots (1 plant/pot), 6” pots (1-3 plants/pot, or 10-12” containers (4-5 plants/pot).

- **Disease Resistance/Susceptibility:**
  - Susceptible to Gray Mold (*Botrytis cinerea & paeoniae*), root rot, leaf spots, and slugs. Cloudy days with wet weather tends to cause delayed flowering. Flowers close on cloudy days and at night.
<table>
<thead>
<tr>
<th>Weeks from Receiving Cuttings</th>
<th>Unrooted</th>
<th>Pre-Rooted</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Apply up to 2500 ppm IBA to cuttings</td>
<td>Apply 1500 ppm B-9/ 20 ppm A-Rest/ 3 ppm Bonzi</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>Ready to transplant in 24-28 days</td>
<td>Apply up to 3000 ppm B-9/ 50 ppm A-Rest/ 9 ppm Bonzi</td>
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<tr>
<td>4</td>
<td>Apply 1500 ppm B-9/ 20 ppm A-Rest/ 3 ppm Bonzi</td>
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<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Apply up to 3000 ppm B-9/ 50 ppm A-Rest/ 9 ppm Bonzi</td>
<td>Finished 4&quot; pot: 6-9 weeks</td>
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<tr>
<td>7</td>
<td></td>
<td>Finished 6&quot; pot: 7-11 weeks</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Finished 10-12&quot; container: 8-12 weeks</td>
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<tr>
<td>9</td>
<td>Finished 4&quot; pot: 9-13 weeks</td>
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<tr>
<td>10</td>
<td>Finished 6&quot; pot: 10-15 weeks</td>
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<tr>
<td>11</td>
<td>Finished 10-12&quot; container: 11-16 weeks</td>
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<tr>
<td>12</td>
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<td>13</td>
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The Future...

- Based on the sensitivity of existing hybrids to elevated pH, future hybrids should be selected for tolerance of high pH.
Selections 20080512x2 and 20080512x3

Total Number of Rooted Cuttings, by Week

<table>
<thead>
<tr>
<th>Weeks from taking cuttings</th>
<th>20080512x2</th>
<th>20080512x3</th>
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<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
<td>7</td>
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<tr>
<td>4</td>
<td>20</td>
<td>14</td>
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<tr>
<td>5</td>
<td>22</td>
<td>16</td>
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<tr>
<td>6</td>
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<tr>
<td>7</td>
<td>23</td>
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<tr>
<td>8</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td>9</td>
<td>23</td>
<td>17</td>
</tr>
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</table>

Yield Potential (%)

<table>
<thead>
<tr>
<th>20080512x2</th>
<th>20080512x3</th>
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<tr>
<td>18/50 (36%)</td>
<td>15/50 (30%)</td>
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</table>
Selections 20080512x2 and 20080512x3

% of Cuttings Rooted

# of Weeks

- 20080512x2
- 20080512x3
Results

- Poor rooting %
- Very poor yield potential
- Extensive iron chlorosis in cuttings and transplants

Conclusions

- Cannot recommend the use of these particular selections in the floriculture industry, but...
- Cannot rule out their future use, either.
- Additional Research is necessary