New Thoughts on PGR Efficacy and New Tank Mix Combinations

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Spray 250 ppm Florel every 2 weeks in the morning.

Marigold
- Fast-drying
  (86 F/ 45% RH)
- Slow-drying
  (59 F/ 85% RH)
Effect of Rewetting on Bonzi Efficacy on Impatiens and Zinnia

<table>
<thead>
<tr>
<th>Crop</th>
<th>Bonzi Drench</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed Impatiens</td>
<td>½ - 1 ppm</td>
</tr>
<tr>
<td>Double impatiens</td>
<td>1-2 ppm</td>
</tr>
<tr>
<td>New Guinea impatiens</td>
<td>¼ ppm</td>
</tr>
<tr>
<td>Vegetative Petunias</td>
<td>2 - 4 ppm</td>
</tr>
<tr>
<td>Geraniums</td>
<td>½ - 1 ppm</td>
</tr>
<tr>
<td>Many new vegetatives</td>
<td>1 - 2 ppm</td>
</tr>
<tr>
<td>Many generic 4” potted</td>
<td>½ - 1 ppm</td>
</tr>
<tr>
<td>Purple Wave Petunia</td>
<td>4 ppm</td>
</tr>
<tr>
<td>Coleus</td>
<td>¼ - ½ ppm</td>
</tr>
</tbody>
</table>

New Thoughts on PGR Efficacy and New Tank Mix Combinations

- Old Concepts/Ideas
- New Materials/Uses
- New Tanks Mixes That You May Want to Try
Configure Efficacy

- Configure efficacy is very much related to timing of spraying where if the material is applied too early, or too late – you will see no effect. In general, I have found the greatest effect when applied 5 days after pinch, and sometimes a follow-up application 5-7 days later (500 ppm).
- Apply when the material will remain wet on leaves for as long as possible.

Augeo

Chemical pinching agent. Typical rate on woodies (400-600 ppm)
On soft liners, consider applying 400-800 ppm every 4 weeks or so.
Efficacy is dependent on how long it sits wet on leaf. Can burn some species.
Remember to give 4 weeks to allow plants to grow out before sale! Minimum of 4 weeks before sale date usually needed.
Some application on succulents, mandavillea, some woodies.

New Thoughts on PGR Efficacy and New Tank Mix Combinations

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- New Materials/Uses
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B-9 (2,500 ppm) + Florel (500 ppm)
Effect of Plant Growth Regulators Applied 5 days after Transplant Alone or as Tank Mixes on Petunia x hybrida Development

- Water
- B-9
- Florel
- B-9 + Florel

Lobelia Sahara White with B-Nine Florel

Calibrachoa Noa Blue Legend - (B-Nine and Florel applied wk 13 and 15)

UNTREATED B-9 + Florel
TopFlor (40 ppm) + Configure (500 ppm)
Effect of Plant Growth Regulators Applied 5 days after Transplant Alone or as Tank Mixes on Petunia x hybrida Development

Water | TopFlor | Configure | TopFlor + Configure | TopFlor + Florel

Effect of Plant Growth Regulators Applied 5 days after Transplant Alone or as Tank Mixes on Petunia x hybrida Development

Water | TopFlor | Configure | TopFlor + Configure | TopFlor + Florel
Effect of Plant Growth Regulators Applied 5 days after Transplant Alone or as Tank Mixes on Petunia x hybrida Development

Water  B-9 + Configure  Cycocel + Configure  Bonzi + Configure  Sumagic + Configure  TopFlor + Configure

Effect of Plant Growth Regulators Applied 5 days after Transplant Alone or as Tank Mixes on Petunia x hybrida Development

Effect of Plant Growth Regulators Applied 5 days after Transplant Alone or as Tank Mixes on Petunia x hybrida Development

Effect of Plant Growth Regulators Applied 5 days after Transplant Alone or as Tank Mixes on Petunia x hybrida Development

Sumagic (8 ppm) + Florel (500 ppm)
Effect of Plant Growth Regulators Applied 5 days after Transplant Alone or as Tank Mixes on Petunia x hybrida Development

Water  TopFlor  Florel  TopFlor + Florel

Effect of Plant Growth Regulators Applied 5 days after Transplant Alone or as Tank Mixes on Petunia x hybrida Development

Water  TopFlor  Florel  TopFlor + Florel

Effect of Plant Growth Regulators Applied 5 days after Transplant Alone or as Tank Mixes on Petunia x hybrida Development

Poor (1)  OK (2)  Normal (3)  Superior (4)
Identified 6 Watsonia species from different climactic regions in South Africa with ornamental potential.

Watsonia

Seed germination

Liquid culture

Meristemoid induction in liquid culture

In vitro multiplication
Germination Studies

- Four winter-rainfall Watsonia: W. aletroides, W. laccata, W. tabularis, and W. vanderspuyiae germinated optimally at 10–20°C.
- Two summer-rainfall Watsonia: W. gladioloides and W. lepida germinated best at 15–25°C.
- One widely distributed Watsonia pillansii (summer and winter rainfall) germinated in the entire range 10–35°C.

Watsonia had a juvenile period (4–5 leaves) and a vernalization requirement (obligate and facultative).

New/Old PGR Ideas

- Apply a low dose (200-250 ppm) every other week application of Florel to maintain Coleus, Vinca, and numerous other plant materials in a vegetative state and increase branching.
- Apply chemicals that are foliarly absorbed first thing in the morning if possible.
- Active ingredient is often left on the leave. Therefore, rewetting the leaf the next morning will increase efficacy.

New Chemical Options

- Early applications of Configure after roots hit the edge of the pot (and 5-7 days after pinch) can greatly increase branching on some crops. This will likely need to be followed by a growth retardant to limit early elongation then.
- Augeo has promise on some species, but not others. There is some efficacy on succulents, mandavillea vine, and other crops. . . . there is almost always phytotoxicity.
New Tank Mix Combinations to Try

• B-9 (2500 ppm) + Florel (500 ppm)
  – West Coast (2500 ppm + 250 ppm Florel)
• TopFlor (40 ppm) + Configure (500 ppm)
• TopFlor (40 ppm) + Florel (500 ppm)
• Sumagic (8 ppm) + Configure (500 ppm)
• Sugar application (15 g/l, or 1.5 g/l)

Plant Defense Mechanisms

![Plant Defense Mechanisms diagram]

[Graph showing the effect of methyl jasmonate on proteinase inhibitor units for different plants]

Geranium  Impatiens  Pansy  Tomato

<table>
<thead>
<tr>
<th>Plant</th>
<th>Control</th>
<th>1×10⁻⁴ M MeJA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geranium</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>Impatiens</td>
<td>13</td>
<td>95</td>
</tr>
<tr>
<td>Pansy</td>
<td>13</td>
<td>107</td>
</tr>
<tr>
<td>Tomato</td>
<td>13 Replicates</td>
<td>121</td>
</tr>
</tbody>
</table>

Methyl jasmonate (µM)
Elicitors from insect eggs activate the SA pathway in Arabidopsis at the site of oviposition. As a result, JA-induced defense responses are suppressed surrounding the egg allowing hatched larvae to feed on ‘undefended tissue’