Figure 1. Effects of compost-amended media on Bolivian sunset (A), golden globe (B), Brazilian plume (C), cat whiskers (D), Mexican heather (E), and golden shrimp plant (F). A commercial peat-based mix was amended with 100, 75, 50, 25, 0 (left to right, by vol.) yard trimmings/biosolids compost.

A large segment of the ornamental nursery industry depends on peat moss as a major constituent of their potting media. The physical and chemical characteristics of peat have made it an excellent potting media for a variety of ornamental plants. However, in recent years, environmental concerns and the cost of peat have escalated. In addition, many states have mandated laws to reduce waste inputs, particularly organic residuals going to municipal landfills.

To achieve this, the focus has been primarily on recycling and use of commercial compost produced from yard trimmings and other organic feedstocks including treated biosolids. Compost (biosolids/yard trimmings) has been utilized to successfully grow a wide range of crops including bedding annuals, vegetables, woody shrubs and trees, and foliage plants. University of Florida (UF) researchers are now determining the practicality of using biosolids/yard trimming compost for containerized perennial plant production.

Results suggest that compost can be a viable partial alternative to peat as a substrate for containerized herbaceous perennial production. At UF, growth of ten perennials was evaluated using commercially available peat-based soilless media amended with 25 percent, 50 percent, or 75 percent compost generated from biosolids and yard trimmings. Initial findings showed that media amended with 25 percent or 50 percent compost significantly reduced plant size of Mexican heather and cat whiskers, respectively (Table 1). Angelonia and golden shrimp plants could be grown in media with up to 75 percent compost without significantly reducing plant size. Regardless of the plant species tested, the higher compost amend-
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At the University of Florida, growth of ten perennials was evaluated using peat-based soilless media amended with 25 percent, 50 percent, 75 percent or 100 percent compost generated from biosolids and yard trimmings.
Table 1. Shoot dry weights (g) of selected perennial plants grown in a commercial peat-based media amended with 0, 25, 50, 75, or 100 percent (by vol.) yard trimmings/biosolids compost.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Compost(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Cat whiskers</td>
<td>Orthosiphon stamineus</td>
<td>19.4*</td>
</tr>
<tr>
<td>Angelonia</td>
<td>Angelonia angustifolia</td>
<td>5.08*</td>
</tr>
<tr>
<td>Mexican heather</td>
<td>Cuphea hysopifolia</td>
<td>10.1*</td>
</tr>
<tr>
<td>Golden shrimp plant</td>
<td>Pachystachys lutea</td>
<td>11.8*</td>
</tr>
<tr>
<td>Bolivian sunset</td>
<td>Gloxinia sylvatica</td>
<td>13.0*</td>
</tr>
<tr>
<td>Golden glober</td>
<td>Lysimachia congestiflora</td>
<td>17.3*</td>
</tr>
<tr>
<td>Brazilian plumer</td>
<td>Justicia carnea</td>
<td>14.9*</td>
</tr>
<tr>
<td>Black and blue salvia</td>
<td>Salvia guarantica</td>
<td>'Black &amp; Blue'</td>
</tr>
<tr>
<td>Indigo spires salvia</td>
<td>Salvia x 'Indigo Spires'</td>
<td>14.5NS</td>
</tr>
<tr>
<td>Wine sage</td>
<td>Salvia 'Van Houtteei'</td>
<td>11.1NS</td>
</tr>
</tbody>
</table>

Comparisons were established between peat-based mix (0% compost) and other individual treatments within each row (NS = nonsignificant, * = significant at P<0.05).

Plants were grown in a peat-based commercial soilless mix amended with 25, 50, or 75% compost.

Plants were grown in a peat-based commercial soilless mix amended with 25, 50, or 75% compost; the 0% compost treatment was a peat-based commercial soilless mix.

Plants were grown in a peat-based commercial soilless mix amended with 50% compost and sub-irrigated in an ebb and flow system.

BIOCYCLE suggested that the method of irrigation may improve growth of plants raised in high volumes of compost.

With this in mind, UF researchers conducted a third series of investigations comparing hand-watering, sub-irrigation and drip irrigation of three salvia species grown in 50 percent or 100 percent compost as compared to commercial peat-based media. Results of the sub-irrigation experiment showed no difference in plant size when plants were grown in peat-based media or 100 percent compost for Indigo spires salvia and Wine sage. However, black and blue salvia were significantly reduced when grown in compost alone as compared to peat-base media. For this salvia species, a 50 percent soil amendment of compost is recommended if subirrigating.

Sandra B. Wilson, Peter J. Stoffella, and Laurie A. Krumfolz are with the Indian River Research and Education Center, University of Florida. A full report of their studies using compost-amended media for growth of Mexican heather was published in the Winter 2001 issue of Compost Science & Utilization, published by The JG Press.

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