The Magic of “Turns”
Getting More from Your Greenhouse Space

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Virginia Tech, Blacksburg, VA

Bedding and Garden Plants
- Best selling annuals
  - Impatiens
  - Petunias
  - Geraniums
  - Pansy/viola
  - Begonia
  - Vegetable plants

Bedding and Garden Plants
- Flats – 28%
- Hanging baskets – 11%
  - New Guinea impatiens
  - Petunia, geranium
- Perennials – 29%
  - Garden mums
  - Hosta

Scheduling
- Select container size
  - Crop selection
  - Target market
  - General trend toward larger containers

Scheduling
- Determine optimum stage for marketing
  - Green
  - Flowering
- Select target marketing date

Growing Strategy
- Grow your own
  - Become a propagation expert
- Have enough labor to do the job
- Have space to do the job
Germination Conditions Required

- Sterile conditions
- Bottom heat
- Water carefully
- Must transplant into flats/containers

Growing Strategy

- Buy in propagules
  - Plugs
  - Liners (rooted or unrooted cuttings)
  - Faster and easier to transplant
  - Faster to establish

Variety of Plug Sizes and Shapes

Growing Strategy

- Buy in prefinished material
  - Established in final container
  - Grow out for your market
  - Increases turns
  - Meets demand

Growing Strategy

- Buy in finished material
  - Ready to sell
  - Manage your space
  - Meet demands

Growing Strategy

- Greenhouse space
- Types of facilities
- Labor for transplanting
- Quality of plugs available
- Other crops being grown
Shenandoah Valley Greenhouse Production Workshop
January 11, 2012

**Growing Strategy – Ex. Petunia**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Duration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seedlings</td>
<td>4 wks</td>
<td>Transplants to a 4” pot</td>
</tr>
<tr>
<td>Germination</td>
<td></td>
<td>14 wks</td>
</tr>
<tr>
<td>Plugs (512s)</td>
<td>6 wks</td>
<td>Transplants</td>
</tr>
<tr>
<td>Prefinished</td>
<td>8 wks</td>
<td>Plants</td>
</tr>
</tbody>
</table>

**Scheduling – The Target Date??**

- For sale when spring breaks
- Sequential plantings
- Fate determined by weekends
- Large number of turns
- Quick turns

**The Value of Turns**

- Crop time varies with production inputs
- Time one crop is on the bench = one turn
- More turns (crops sequentially on the same bench space) = more income (?)

**How Much Does My Product Cost?**

- Costs = Cash you paid for everything that went into making it the actual product sold
- Direct/Indirect?
- Fixed/Variable?

**Ex.: 500 Flats of Impatiens**

What is required to produce them?

- Plugs
- Inserts, flats, media, tags
- Fertilizer, chemicals
- Labor to plant, move, grow, market
- Overhead (the rest of the cost of doing business)

**Cost of Plugs Using 512s**

- 500 flats x 36 plugs/"606" flat = 18,000 plugs
- 18,000 plugs / 512 plugs per tray = 35.2 trays
- Purchase 36 trays @ $25/ tray plus $50 shipping = $900 + $50 = $950
- ($950 / 18,000 plugs) = $0.053 / plug
- 36 plugs per flat x $0.053 = $1.91 per flat
Use Same Procedure to Calculate Other Costs

- Plugs
- Inserts, flats, media, tags
- Fertilizer, chemicals
- Labor

Ex. 500 Flats of Impatiens - 512s

<table>
<thead>
<tr>
<th>Production costs</th>
<th>Cost ($/ flat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat and liner costs</td>
<td>$0.76</td>
</tr>
<tr>
<td>Media</td>
<td>$0.37</td>
</tr>
<tr>
<td>Plugs (512s)</td>
<td>$1.91</td>
</tr>
<tr>
<td>Fertilizer, chemicals, labels</td>
<td>$0.22</td>
</tr>
<tr>
<td>Labor</td>
<td>$0.50</td>
</tr>
<tr>
<td>Overhead (cost of doing business)</td>
<td>$1.19</td>
</tr>
<tr>
<td>Total</td>
<td>$4.95</td>
</tr>
</tbody>
</table>

Cost of Plugs Using 288s

- 500 flats x 36 plugs/flat = 18,000 plugs
- 18,000 plugs / 288 plugs per tray = 62.5 trays
- Purchase 63 trays @ $23/ tray plus $50 shipping = $1,449 + $50 = $1,499
- ($1,499 / 18,000 plugs) = $0.083 / plug
- 36 plugs per flat x $0.083 = $2.99 per flat

Ex. 500 Flats of Impatiens - 288s

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<tr>
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<tr>
<td>Plugs (288s)</td>
<td>$2.99</td>
</tr>
<tr>
<td>Fertilizer, chemicals, labels</td>
<td>$0.22</td>
</tr>
<tr>
<td>Labor</td>
<td>$0.50</td>
</tr>
<tr>
<td>Overhead (cost of doing business)</td>
<td>$0.79</td>
</tr>
<tr>
<td>Total</td>
<td>$5.63</td>
</tr>
</tbody>
</table>

You know the cost, But what can you sell it for?

Establish Profit Goals

- To get 10% profit, multiply cost by 1.1
- To get 25% profit, multiply cost by 1.25
- To get 50% profit, multiply cost by 1.5
Establish Sales Goals
- Ex. Impatiens flat cost from 512 size plugs costs $4.95 to produce
- Want 20% profit
- Expect sales of 475 flats (expect 5% loss)
  - $(4.95 + 1.00) \times 475 = $2,826.25 \text{ gross sales}
  - Profit = $475.00

Establish Sales Goals
- Ex. Impatiens flat cost from 288 size plugs costs $5.63 to produce
- Want 20% profit
- Expect sales of 475 flats (expect 5% loss)
  - $(5.63 + 1.13) \times 475 = $3211.00 \text{ gross sales}
  - Profit = $536.75

Turns = Multiple use of same space
- Ex: 1,500 sq.ft. in Impatiens finished in 606 flats = 1,080 flats
- Production period: Feb. 1 to June 1
- Decide between two plug sizes:
  - 512s prod. cost $4.95
  - Or, 288s prod. cost $5.63?

Maximum Turns with 512 Plugs
<table>
<thead>
<tr>
<th>512s</th>
<th>Turn 1</th>
<th>Turn 2</th>
<th>Turn 3</th>
<th>Turn 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant</td>
<td>2/1</td>
<td>3/15</td>
<td>4/26</td>
<td>NA</td>
</tr>
<tr>
<td>Ship</td>
<td>3/15</td>
<td>4/26</td>
<td>6/7</td>
<td>NA</td>
</tr>
<tr>
<td>Total flats</td>
<td>950</td>
<td>1,900</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Profit/flat</td>
<td>$1.00</td>
<td>$1.00</td>
<td>NA</td>
<td>NA</td>
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</tbody>
</table>

Maximum Turns with 288 Plugs
<table>
<thead>
<tr>
<th>288s</th>
<th>Turn 1</th>
<th>Turn 2</th>
<th>Turn 3</th>
<th>Turn 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant</td>
<td>2/1</td>
<td>3/1</td>
<td>3/29</td>
<td>4/26</td>
</tr>
<tr>
<td>Ship</td>
<td>3/1</td>
<td>3/29</td>
<td>4/26</td>
<td>5/24</td>
</tr>
<tr>
<td>Total flats</td>
<td>950</td>
<td>1,900</td>
<td>2,850</td>
<td>3,800</td>
</tr>
<tr>
<td>Profit/flat</td>
<td>$1.13</td>
<td>$1.13</td>
<td>$1.13</td>
<td>$1.13</td>
</tr>
</tbody>
</table>

Impatiens -- Net Profit??
- 512s
  - 1,900 flats at $1.00 = $1,900
- 288s
  - 3,800 flats at $1.13 = $4,294
- Examine your market
- Calculate your costs
Pricing Considerations
- Flats are treated as commodities by wholesale buyers, but not by consumers
- Larger containers, planters, baskets command premium prices
- Include novelty or unusual items
- Create or buy products to add value

How Do You Make Money??
- Know your plant’s needs
- Provide a good environment for each stage of growth
- Manage pests, diseases, growth
- Schedule correctly for market windows
- Maximize the number of turns
- Know your costs; price accordingly

For more information
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www.hort.vt.edu/floriculture

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