

Bedding Plant Production

Greenhouse/ High Tunnel
Workshop
August 4, 2016



Bedding Plants are Big Business



2014 = \$3.3 billion total sales

- “Pack” annuals
 - Grown in flats
- Potted annuals
- Perennials
- Specialty containers
- Hanging baskets



Presentation Overview

- Product mix
- Container size
- Propagation method
- Cultural practices
- Future trends



Product Mix—What Should I Grow?

- Grow what people are buying
 - Impatiens
 - Geranium (cultured)
 - Petunia
 - Geranium (seed)
 - Marigold
 - Begonia



Product Mix (continued)

- Pansy
- Tomato
- Vinca
- Alyssum
- Dusty miller
- Portulaca
- Salvia



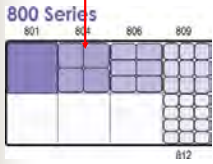
Sales Unit Size ?

- Pots vs. packs
- Pack size

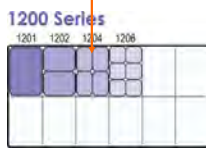


Sales Unit Size?

32 plants/1020 flat



48 plants/1020 flat



Starting Plants

- Seedling production
- Plugs (buy-in or grow your own)
- Rooted cuttings



Seedling Production



- Hand sowing into open flats
- Transplant when large enough to handle
- More labor intensive
- Greater transplant shock

Plugs

- Transplant already several weeks old
- Easier to handle and faster to transplant
- Less transplant shock
- Expensive
- Usually requires large operation to “grow your own”



Advantages of Buying Plugs

- Simplified crop schedules
- Eliminates propagation
- Can allow additional turns of greenhouse space
- “Grow your own” complex and expensive to get started



Disadvantages of Buying Plugs

- Cultivars somewhat limited
- Minimum quantities
- Delivery expense
- Quality problems



Cuttings

- Geraniums and other annuals for pots and hanging baskets
- Explosion of vegetatively-propagated materials
- Good name recognition by public
- More expensive
- Plant patent laws



Transplanting

- Seed flats – when one set of true leaves are present
- Plugs – when root ball holds together
- Plants stunt if transplanting delayed
- Plugs can be stored at 32-55F, depending on species and light in cooler
- Rooted cuttings – upon arrival



Timing

- Important for quality
- Pot-bound plants look bad in packs and do not perform well in the garden
- Know market date and “count backwards”



Sales Periods in Missouri

Time of Year	Percent Sales
Late March – Early April	25
Mid-April – Late April	40
Early May – Mid-May	25
Late May	10

Plug Finishing Time (weeks)

Crop	392 ·48 flat	392 ·4-inch
Ageratum	5-6	7
Alyssum	5-6	6
Etc.		

60 degree night temperature

Cultural Practices



Growing Media

- Light-weight
- Porous/well-drained
- Remember small containers mean poor drainage



Fertilizer

- Prefer 60+ percent nitrogen in nitrate form
- Peat-lite formulation for micros
- Start at 150-200 ppm for most crops and adjust from there
- Fertilize CLF

GUARANTEED ANALYSIS	
PETER'S PEAT-LITE[®] SPE	6-17
GUARANTEED ANALYSIS	
TOTAL NITROGEN (N)	16%
8.00% NITRATE NITROGEN	
2.15% AMMONIACAL NITROGEN	
5.85% UREA NITROGEN	
AVAILABLE PHOSPHORUS (P ₂ O ₅)	11%
SOLUBLE POTASH (K ₂ O)	17%

Watering

- Avoid over-watering
- Consider water quality
 - Alkalinity
 - Salinity
 - Biological purity



Temperature

- Cool crops (e.g. pansy and snaps)
 - 50-55 degrees F
- Warm crops (e.g. marigold and begonia)
 - 60-65 degrees F
- "Heat lovers" (e.g. vinca)
 - At least 65 degrees F



Light/Photoperiod

- Most species need full-sun
- Watch impatiens, begonias and ivy geranium as spring progresses
- Some species photoperiodic but usually ignored



Height Control

- Plant Growth Regulators
 - B-nine
 - Cycocel
 - A-rest
 - Sumagic
 - Bonzi
- Water
- DIF



Insect Pests

- Aphids
- Thrips
- Whitefly
- Mites
 - Two-spotted
 - Cyclamen
- Fungus gnats



Diseases

- Damping off
 - Rhizoctonia
 - Pythium
- Botrytis
- Powdery mildew
- Impatiens
 - Necrotic spotted virus
 - Downy mildew



Postharvest/Marketing

- Poor handling by mass marketers
- Label everything
- Group by use
- Display beds



Trends in Bedding Plants



Potted (4 & 6-inch) Annuals

- Geraniums
- Vegetatively-propagated species (e.g. Supertunia®)
- Veggies
- Herbs
- Main difference is crop time, add 2-6 weeks on to flats



Advantages

- Higher profits/ft²
- Increase product diversity
- Longer marketing period



Disadvantages

- Longer crop times—need to charge more per sales unit
- More limited market



Hanging Baskets

- Any species that does not have an strongly upright growth habit
 - Petunia
 - Verbena
 - Impatiens
 - Tuberous begonia
 - Scaevola
 - Mixed species



Advantages

- Use ‘free’ space in greenhouse
- Easy to fit into product mix
- Increase product diversity



Disadvantages

- Irrigation
- Dripping – reduced growth of plants below
- Shipping
- Blocks light below
- Structural support



Mixed Containers

- High interest
- Pots and hanging baskets combining 2 or more species together for variety
- Gives consumers lots of “bang for the buck”
- Get creative
 - “Recipes” available on web



Perennials

- Increasing area of bedding plants, hundreds of species
 - Garden mums
 - Hostas
 - Daylilies
 - Etc.



Advantages

- Can be grown earlier and moved outdoors
- Grow under cooler temperatures
- Grow in unheated hoop houses
- Increase product diversity



Disadvantages

- May be more difficult to grow than the typical bedding plant, less information available
- Many species – many production requirements
- Often propagates less uniformly
- More insect and disease problems, some of which are specific to genera
- Not all flower in production container
- Public knowledge is poor
- Fewer repeat sales, less quantities sold of each species

Patio Plants

- Patio plants
 - Hibiscus
 - Veggies
 - Tree-forms
 - Small market
- Can be profitable but must be priced high due to long crop times and large amount of space



Summary

- Bedding plants most profitable greenhouse crop for most growers
- Getting started means competition—what can you do that others cannot
- Concentrate on quality
- Be aware of new trends in marketing
- Make each crop a learning experience

Questions