

To

Date

Tuesday December 13, 2011

*3 pages from Sonja Peters*

## 2011: Plug and Cutting Conference



This 3-day conference was held in San Jose, California, September 12 to 14.

Organized by the OFA

<http://www.ofaconferences.org/node/49>

About 400 people attended. 34 people (23 different companies) were from Canada.

Other countries represented were: Netherlands, Mongolia, Mexico, Israel, Denmark, Costa Rica, and USA.

### **Overview**

Informative workshops, excellent presenters, trade show was small.

This series of workshops in the past was organized by Grower Talks and Ball Publishing. It has since been taken over by Ohio Florist Association.

Next conference in the series is "Perennial Production", September 2012 in Michigan, followed by "Disease, Insect and Plant Growth Management" in fall 2013.

### ***The Plug & Cutting Industries: How do We Turn Challenges into Opportunities***

By Will Healy, Ball / Bill Swanekamp, Kube-Pak Corp / Sim McMurry, Metrolina Greenhouses / David Van Wingerden, Green Circle Growers Inc. / Roger Styer, Total Growth Solutions

- research today vs. 20 years ago: fewer extension people / those remaining are a good core group that work closely with growers
- universities are having difficulty keeping horticulture programs going due to lower enrollment
- Brazil is emerging as a strong producer of plugs
- some growers are looking for European interns
- Roger Styer (Total Growth Solutions – produce 115,000,000 plugs and liners per year) – “We are using less chemicals and more biological controls and are finding plants are growing better.”

### **Optimizing Root Zone Environment: Water, Media, Nutrition**

By Bill Agro, Blackmore Company Inc. / Jamie Gibson, Conrad Fafard Inc. / Paul Fisher, University of Florida

- most growers are bringing their commercial mix in from an outside supplier
- larger growers are blending their own mix
  - of the growers in the room 60% are using a commercial mix / 40% are blending their own
- majority of the mixes are still comprised of peat and perlite
- coir, rice hulls, fine pine bark, vermiculite etc. are still being researched as alternatives

### **Waterborne Solutions**

By Paul Fisher, University of Florida

#### **Biofilm**

- A living complex of organic and inorganic components colonizes and grows in irrigation lines and holding tank used to water greenhouse and nursery crops.
- Why is it a problem? Has the potential to clog irrigation lines and emitters / more a concern when using recycled irrigation water (biofilm feeds algae in irrigation lines) /  
note: high calcium in irrigation water can also clog irrigation lines
- Can use 3M Petrifilm to monitor for Biofilm (>10,000 cfu/ml bacteria = high biofilm risk).
- Shock treatment of lines between crops may work the best.
  - Fill irrigation lines with Chlorine dioxide 20 to 50 ppm or an activated peroxygen (ZeroTrol) and let it sit overnight. Blow out the lines in the morning (remove irrigation emitters). Note: ZeroTrol and others will harm microbial life in growing media.

### **Best Management Practices for Handling Unrooted Cuttings**

By Jim Faust, Clemson University and John Dole, North Carolina State University

- Take only enough cuttings into the greenhouse that can be stuck within an hour. Keep cuttings out of direct sunlight or air movement.
  - 1) If shipments were delayed during shipping, immediately stick cuttings.
  - 2) If shipments arrived at normal 48 hours or 72 hours then:
    - a) Identify plants that are poor shippers and immediately stick them  
Example: Diamond Frost Euphorbia (ethylene sensitive)
    - b) Measure temperature with an IR gun. If temperatures inside a box is:
      - i) <7°C – stick high chilling-sensitive
      - ii) >21°C – open boxes, and stick all cuttings immediately
      - iii) 15.5 to 21°C – open boxes, place in cooler and stick within 24 hours (allow cuttings to cool before sticking them)
      - iv) 10 to 15.5°C – place in cooler at 10°C for up to 48 hours

## **Challenges of 'Clean' Cuttings/ Plugs & How These Affect Pest Management Programs**

By Ronald Valentin, Biobest USA

- 'clean' means as low as possible pest levels on cuttings/plugs...if breeders over use pesticides because they are attempting 'zero tolerance' this can contribute to pesticide resistance
- not a blame game (positive and constructive communication between breeder, propagator and grower is important)
- inspect plants before they come into the greenhouse
- dip cuttings before sticking in a nematode solution (*Steinernema spp*) and / or *Beauveria bassiana* (Botanigard)<sup>1</sup>
  - this minimize (not 100% reduction) hitch hikers and effects thrips, fungus gants, aphids and whiteflies
  - a dip works better then a sprencn after sticking / dipping can also spread disease(s)
  - aeration of nematodes in tank is important (mechanical or injection of air)

### **Tips from Ball Horticulture**

- Euphorbia: keep cuttings very wet for first 2 days and nights, then taper the mist off quickly. Wet foliage and soil will get you soft stretch chlorotic plants. Run on the dry side to avoid soft plants.
- Achillea, Lavendula, Rosemary, Artemesia, Pervoskia, Sedum, Delospermum, Helichrysum: root with dry conditions and under growing lights

### **Managing Temperature for Production and Scheduling AND**

#### **Managing Photoperiodic Light for Production and Scheduling**

By Chris Currey, Purdue University / John Erwin, University of Minnesota / Roberto Lopez, Purdue University / Erik Runkle, Michigan State University

##### **a) Juvenile and Maturity**

- after seed germination, plants are immature or juvenile (perennials cuttings are already mature when taken from the stock plant)
- the juvenile phase is characterized by an inability to induce flowers
- juvenile plants are incapable of perceiving and responding to the environmental stimuli that cause mature plants to flower
- the duration of juvenility varies by species / usually lasts from a few weeks to a few months
- the mature phase is characterized by the ability to produce flowers

---

<sup>1</sup> Work done by Wendy Romero at the University of Guelph see <http://www.bioworksinc.com/industry-news/greenhouse-ca-3-10.pdf> and <http://www.greenhousecanada.com/content/view/2215/38/>