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## Research Update

John Erwin  
University of Minnesota

### Mites Can Be Good Too!

The U.S. Agriculture Research Service has showed that a european mite (*Aceria malherbe*) will selectively attack only the field bindweed. The field bindweed is listed as the 15th worst field weed in the United States. Bindweed chokes plants to death by growing around their stems. Test releases in the Southwest have been successful. The mites will now be released to selectively control this weed through out the United States.

Report from Sara S. Rosenthal, ARS Rangeland Insects Lab, Culbertson Hall, Montana State University, Bozeman, Mont. 59717.

### Will We Ever Be Able To Induce Flowering Chemically?

For years researchers have been trying to find the elusive compound 'florigen'. Florigen is a compound which is hypothesized to induce flowering in plants. Recent research at Kinki and Konan Universities in Japan has showed that a high molecular weight compound could be isolated that can induce flowering in duckweed. This is the first published report of a high molecular mass substance that will induce flowering in duckweed. Interestingly, a similar substance to the compound found in duckweed was also isolated in morning glory and cabbage.

Takeba, G., Y. Nakajima, A. Kozaki, O. Tanaka, and Z Kasai. A flower-inducing substance of high molecular weight from higher plants. Plant Physiol., 94:1677-1681.

### Tissue Culture Has Additional Benefits In Ficus.

Researchers at the Research Centre of Horticulture in Denmark studied the differences in growth patterns of cuttings taken from *Ficus benjamina*

stock plants which were propagated traditionally or from tissue culture. They found that cuttings from tissue cultured stock plants rooted faster and had a higher rooting percentage than cutting taken from traditionally propagated stock plants. Rooted cuttings from tissue cultured stock plants grew faster and produced more and longer lateral shoots compared to rooted cuttings from traditionally propagated stock plants. The significantly different growth patterns diminished during the first 4 months after transplantation.

Kristiansen, K. 1991. Post-propagation growth of cuttings from in vitro and in vivo propagated stock plants of *Ficus benjamina*. Scientia Hort., 46:315-322.

### STS Can Reduce Easter Lily Flower Bud Abortion

Researchers at the University of Arizona studied the effects of ethylene, and light intensity on Easter lily flower bud abortion (bud blasting). They found that flower bud abortion after the visible bud stage was not due to a reduction in plant carbohydrate. Bud abortion significantly increased when plants were grown under reduced light intensities and were exposed to ethylene. Application of silver thiosulfate (STS; 1mM or 2 mM concentration) significantly reduced flower bud abortion of plants which were exposed to ethylene. They concluded that a STS applications may be an inexpensive way to reduce ethylene induced Easter lily flower bud abortion.

Mason, M.R., and W.B. Miller. 1991. Flower bud blast in Easter lily is induced by ethephon and inhibited by silver thiosulfate. Hortscience, 26(9):1165-1166.

### Planting Medium Affects *Hippeastrum* Forcing

Nine different media were evaluated for their effects on *Hippeastrum* bulbs cv 'Summertime', 'Sun Dance', 'Appleblossom', and 'Red Lion' at North Carolina State University. They found that plants developed the longest leaves when grown in Sunshine no. 4, Farafad 3-B, or Sunshine Post-Harvest. The best media for production of *Hippeastrum* as a potted plant were Farafad 3-B and Sunshine Mix no. 4. Farafad no. 2 was the best medium for growing *Hippeastrum* as a cut flower.

De Hertogh, A.A. and M. Tilley. 1991. Planting medium effects on forced Swaziland- and Dutch-grown *Hippeastrum* hybrids. *Hortscience*, 26:1168-1170.

### Shading Affects Field-grown Cut Flower Yield

Researchers at the University of Georgia studied the affects of growing a variety of field cut flowers under full sun, or 55% or 67% shade treatments on subsequent yield over a 2-3 year period. Plants grown under shade had longer stems than plants grown under full sun. *Centaurea americana* and *Erygonium planum* yield decreased as the light intensity they were grown under decreased. However, *Echinops* yield increased as light intensity decreased to 55% of ambient light. *Anemone coronaria* had the longest stems when grown under 67% natural light conditions. They concluded that the addition of shading (< 55%) for field-grown cut flowers is beneficial to some but not all crops. However, 67% shading was only beneficial to *Anemone* growth and yield.

Armitage, A.M. 1991. Shade affects yield and stem length of field-grown cut-flower species. *Hortscience*, 26:1174-1176.

### BA May Be Beneficial When Shipping Roses

Researchers at Clemson University and Texas A&M University studied the effects of shipping temperature, shipping duration, and applications of cytokinins on pot rose postharvest life. They

found that an application of 50-100 ppm cytokinin immediately before 5 days of simulated shipping decreased leaf chlorosis resulting from the shipping process and, therefore, resulted in higher quality plants after shipping.

Clark, D.G., J.W. Kelly and H.B. Pemberton. 1991. Postharvest quality characteristics of cultivars of potted rose in response to holding conditions and cytokinins. *Hortscience*, 26:1195-1197.

### Which Exacum Should You Grow?

Researchers at the U.S. Department of Agriculture at Beltsville studied the postharvest life of 15 different Exacum genotypes. Flower development, and flower and leaf color were evaluated at harvest (25% of plant canopy covered in flowers), and 14 or 28 days of storage in a low light environment (< 5 footcandles). The genotypes which performed the best were 'CE', 'Best Rose', and 'Little Champ'.

Rubino, D.B. 1991. Performances of 15 Exacum affine genotypes in a low-irradiance environment. *Hortscience*, 26:1215-1216.



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An application of 50-100 ppm cytokinin immediately before 5 days of simulated shipping decreased leaf chlorosis resulting from the shipping process and, therefore, resulted in higher quality rose plants after shipping.

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# MINNESOTA COMMERCIAL FLOWER GROWERS SHORT COURSE

## Wednesday, October 30

### Greenhouse Tours

- 2:00-2:45 **Terra Products Corp.**  
20230 Interstate 35  
Lakeville, MN  
612-469-3500
- 3:00-3:45 **Bachman's Inc.**  
Growing Range  
23000 Cedar Avenue South  
Farmington, MN  
612-469-2102
- 3:45-4:15 **Eisele Greenhouse, Inc.**  
8280 West 160th Street  
Rosemount, MN  
612-432-7435
- 4:30-5:00 **Bachman's Inc.**  
Apple Valley Retail Store  
7955 County Road 42  
Apple Valley, MN  
612-431-2242
- 5:15-5:45 **Lyndale Garden Center**  
Burnsville  
35E & County Road 42  
Burnsville, MN  
612-892-7444

### Evening Schedule

Location:  
Holiday Inn - Burnsville  
14201 Nicollet Avenue South  
Burnsville, MN  
612-435-2100

- 6:00-6:30 **Social**
- 6:30-7:30 **Dinner**
- 7:30-8:00 **Business Meeting**
- 8:00- **The Future of Floriculture**  
Roy Larson  
North Carolina State University

## Thursday, October 31

Location:  
Rolling Green Country Club  
400 Evergreen Road  
Hamel, MN  
612-478-6021

- Moderator: Scott Carbonneau
- 8:00-8:45 **Geranium Production**  
John Erwin  
University of Minnesota
- 8:45-9:30 **Bedding Plant Production**  
Dave Koranski  
Iowa State University
- 9:30-10:00 **Break**
- 10:00-10:15 **Media Test Evaluation**  
Deb Schwarze  
University of Minnesota
- 10:15-11:00 **Cut Rose Production**  
R.J. Swartz  
Tagawa Greenhouse, Inc.

### Recertification Schedule

- Moderator: Steve Maslowski
- 11:00-11:30 **Fertigation and Chemigation - What's New**  
John Peckham  
Minnesota Department of Ag
- 11:30-11:45 **Location of Your Well with Regard to Pesticide Storage and Use**  
Ron Thompson  
Minnesota Department of Health
- 11:45-12:00 **Laws and Regulations**  
Wayne Dally  
Minnesota Department of Ag
- 12:00-1:00 **Lunch**

1:00-1:45	<b>Label Comprehension, Safety and Protective Clothing</b> Dean Herzfeld University of Minnesota	Moderator: Dave Hallstrom	12:00-12:20	<b>Marketing at Molbak's</b> Sue Steele Molbak's Greenhouse, Inc.
1:45-2:15	<b>Spills and Incidence</b> Roger Mackadans Minnesota Department of Ag		12:20-12:40	<b>Marketing at Tagawa's</b> R.J. Swartz Tagawa Greenhouses, Inc.
2:15-2:45	<b>Minnesota Pesticide Registrations</b> Cal Blanchard Minnesota Department of Ag		12:40-1:00	<b>Marketing at Bachman's</b> Dick Herberg Bachman's, Inc.
2:45-3:00	<b>Break</b>		1:00-1:20	<b>Marketing at Greiling's</b> Tom Wall Gene Greiling Farms
3:00-4:00	<b>Greenhouse Integrated Pest Management</b> John Erwin - Growth Regulators Mark Ascerno - Thrips Frank Pfleger - Tomato Spotted Wilt Virus		1:20-2:15	<b>Group Discussion of New Directions</b>

**Friday, November 1**

Moderator: Mark Whitman

8:00-8:45	<b>Azalea Production</b> Roy Larson North Carolina State University
8:45-9:15	<b>Is There a Potential Market for Native Plants</b> Terry Ferriss University of Wisconsin - River Falls
9:15-9:45	<b>Break</b>
9:45-10:30	<b>Public Perception of Chemical Use in the Floriculture Industry</b> Bob Ehart Ciba Geigy
10:30-11:00	<b>New Crop Production</b> 1) Pot Dahlia 2) Pot Asters 3) Kangaroo Paw 4) Heliotrope 5) Pot Torenia 6) Etc. John Erwin and Mark Strefeler University of Minnesota
11:00-12:00	<b>Lunch</b>



# MAP FOR SHORT COURSE TOURS

