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1997 PANSY TRIAL SUMMARY

Douglas A. Bailey, Department of Horticultural Science, NC State University

During November 1996 through April 1997, we evaluated 114 pansy selections plus 4 viola entries and recorded how well they performed in the North Carolina landscape.

Weather during the winter and spring of 1997 was relatively mild and most pansies continued flowering throughout the season. Temperatures in December (+6%), January (+2%), February (+11%) and March (+9%) were above normal (Table). November (-10%) and April (-7%) were below normal, and the cooler temperatures at the beginning and end of the season seemed to extend the flowering for many cultivars. Overall, the seasonal daily average temperature was 48.5, less than 1 °F above the 30 year average of 47.9 °F for the same time period.

Precipitation fluctuated during the six month trial with 4 months well below average, 1 month with average precipitation, and April well above average (Table 1 and Figure 2). Overall, we received 21.3 inches of precipitation, which is 19% below our 26.3 inch average precipitation for the seven month period.

Leaders of the Pack

The following were selected in 1997 on their ability to display attractive landscape color throughout the majority of the winter and spring season. At any one time, other entries may have made a better short-term showing, but the "Leaders of the Pack" were selected for consistent, dependable full-season performance as a source of color and beauty in the landscape. The cultivar source is shown in parenthesis.

Pansies:

White--Blotch: 'Rally White Blotch Improved' (BALL), 'Skyline White' (S&G), 'Fama Dark-Eyed White' (BEN), 'Accord/Banner White Blotch' (GOLD)

Yellow--Clear: 'Baby Bingo Yellow' (BALL), 'Clear Sky Primrose' (S&G), 'Accord/Banner Clear Primrose' (GOLD)

Yellow--Blotch: 'Fama Dark-Eyed Lemon' (BEN), 'Delta Primrose w/ Blotch' (S&G), 'Skyline Yellow' (S&G), 'Universal Plus Yellow Blotch' (GOLD), 'Rally Yellow w/ Blotch' (GOLD), 'Rally Yellow w/ Blotch'

Table 1. Solar energy, temperature and precipitation for November 1996 through April 1997 and 30 year temperature and precipitation averages for Raleigh, N.C.

Month	Daily average solar radiation received (Langley's/day)	Daily average temperature (°F) and percent change from 30 year avg	30 year average daily temperature (°F)	Monthly precipitation (inches) and percent change from 30 year avg	30 year average monthly precipitation (inches)
November	203	46.4 (-10%)	51.7	2.96 (-13%)	3.40
December	163	45.6 (+6%)	42.9	3.34 (0%)	3.34
January	225	41.2 (+2%)	40.2	3.00 (-21%)	3.79
February	228	46.9 (+11%)	42.1	2.98 (-21%)	3.75
March	361	54.7 (+9%)	50.1	3.38 (-19%)	4.19
April	430	56.0 (-7%)	60.4	5.64 (+68%)	3.36

Yellow--Blotch (continued): (BALL), 'Happy Face Yellow' (BG), 'Majestic Giants Yellow w/ Blotch' (SAK)

Rose--Blotch: 'Accord/Banner Rose Blotch' (GOLD), 'Majestic Giants Rose Shades' (SAK)

Red--Clear: 'Delta Pure Red' (S&G)

Red--Blotch: 'Accord/Banner Red Blotch' (GOLD), 'Skyline Red' (S&G)

Red / Yellow: 'Accord/Banner Red Wing' (GOLD)

Blue--Clear: 'Baby Bingo Denim' (BALL), 'Rally TrueBlue' (BALL), 'Fama Silver Blue' (BEN), 'Accord/Banner Clear Blue' (GOLD), 'Clear Sky True Blue' (S&G), 'Atlas Blue Splash' (BG)

Blue--Blotch: 'Rally Light Blue w/ Blotch' (BALL), 'Rally Deep Blue w/ Blotch' (BALL), 'Bingo Blue w/ Blotch' (BALL), 'Happy Face Blue' (BG), 'Delta

Blue w/ Blotch' (S&G), 'Accord/Banner Blue Blotch' (GOLD), 'Super Majestic Giants Ocean' (SAK), 'Super Majestic Giants Blue Cap' (SAK), 'Majestic Giants Blue Shades' (SAK)

Purple--Clear: 'Baby Bingo Midnight' (BALL), 'Fama Purple' (BEN), 'Universal Plus

Table 2. Series average ratings for the 1996 / 1997 winter trials.

Series	Number trialed	Source	Avg. rating	No. wks with 50% plants in bloom
Pansy				
Accord/Banner	18	GOLD	3.0	18
Atlas	6	BG	3.0	14
Baby Bingo	4	BALL	3.4	20
Bingo	8	BALL	3.0	18
Clear Sky	4	S&G	3.1	18
Delta	10	S&G	3.0	19
Fama	17	BEN	3.0	17
Happy Face	6	BG	3.1	16
Majestic Giants	8	SAK	3.1	14
Rally	10	BALL	3.1	16
Skyline	4	S&G	3.1	18
Super Majestic Giants	6	SAK	3.1	10
Universal Plus	12	GOLD	3.0	17
Viola				
Penny	4	GOLD	3.6	22

Lavender' (GOLD), 'Ultima Lavender Shades' (SAK)
Purple--Blotch: 'Rally Lilac Cap' (BALL)
Purple / White: 'Baby Bingo Beaconsfield' (BALL)
Violas: 'Penny Violet Flare' (GOLD), 'Penny Azure Wing' (GOLD), 'Penny Primrose' (GOLD), 'Penny Violet Beacon' (GOLD)

Exceptional Performance Winners

Each year, the best of the best, those cultivars that exemplify outstanding performance during the trials, will be recognized as Exceptional Performance award winners. The winners are judged on full-season performance and are recommended as outstanding selections for our region. Growers, retailers and landscapers are encouraged to consider these cultivars first for their winter and spring color needs. Only two cultivars were selected from 118 entries in the 1996–1997 winter trial:

- Viola, 'Penny Violet Flare' (GOLD)**
- Viola, 'Penny Azure Wing' (GOLD)**

Table 3. Seasonal average rating and number of weeks where 50% of the plants representing each cultivar was in bloom (total of 22 weeks in the trial) for each color-type combination.

Color--Type	No. of cultivars	Avg. rating	No. of wks in bloom
White--all	15	3.0	16
White--clear	6	2.8	17
White--blotch	9	3.1	15
Yellow--all	26	3.1	16
Yellow--clear	12	3.1	17
Yellow--blotch	14	3.1	16
Orange--all	7	2.9	14
Orange--clear	5	2.9	15
Orange--blotch	2	3.0	11
Rose--all	9	3.0	19
Rose--clear	3	2.9	20
Rose--blotch	6	3.1	18
Red--all	14	3.0	16
Red--clear	4	3.1	19
Red--blotch	10	3.0	14
Blue--all	19	3.2	17
Blue--clear	7	3.3	18
Blue--blotch	12	3.2	16
Purple--all	16	3.1	18
Purple--clear	8	3.1	18
Purple--blotch	8	3.1	18

We are indebted to the following companies for supporting our 1995–96 winter trials:

- **BALL** Ball Seed Co., P.O. Box 335, West Chicago, IL 60185
- **BEN** Ernst Benary of America, Inc. 1444 Larson Street, Sycamore, IL 60178
- **BG** Bodger Seeds Ltd., 1800 North Tyler Avenue, Lompoc, CA 91733-3618
- **GOLD** Goldsmith Seeds, Inc., P.O. Box 1349, Gilroy, CA 95020
- **SAK** Sakata Seed America, Inc., P.O. Box 158, Wrens, GA 30833
- **S&G** S&G Seeds, 5300 Katrine Avenue, Downers Grove, IL 60515

*Appreciation is also expressed to **Fafard, Inc.**, P.O. Box 26, Anderson, SC 29622; and to the **North Carolina Commercial Flower Growers' Association** for their donations to and support of the 1996–1997 winter annual trial garden.*

Seasonal Ratings and Performance

The season average ratings for the pansy and viola series that had at least three entries are listed in Table 2 in alphabetical order.

Baby Bingo was the top performing pansy series in the 1996 / 1997 winter trials while the viola series Penny outperformed all pansy series. There was very little difference among the remainder of the pansy series with respect to seasonal average. However, there was distinct differences in number of weeks with 50% or more of the plants in flower (total of 22 weeks). Since full season flowering is such an important landscape performance feature, we have summarized average number of weeks with 50% or more of the plants in flower by flower color and type in Table 3. Rose cultivars seemed to flower longer than other colors. Purple cultivars also flowered for a long period of time. There

appears to be little difference between red, yellow, and white cultivars. However, orange cultivars were the least floriferous in the trials. Within a given color, there appears to be little difference between clear and blotched flowers with the exception of reds, where clear cultivars flowered longer than blotched cultivars. This information may be useful to landscapers seeking to select color schemes that maintain color throughout the winter bedding plant season.

The number of pansies continues to increase each year, and the quality appears to improve as well. However, there is still a need for contrasting plant materials during our cool season in the Southeast. Hopefully other companion plants will be discovered in the future. Violas seem to hold up better during our winters and we hope companies will continue to submit viola entries along with pansies.

Calendar of Events

Event	Date	Time	Location and contacts
Specialty Cut Flower Growers Conference	Wednesday–Saturday 27–30 August		Doubletree-Lloyd Center, Portland, OR. Contact ASCFG at 216.774.2887 for more information.
NCCFGA Board Meeting	TBA mid-October		TBA. Contact Bonnie Holloman at 919.779.4618 for more details.
NC State University Poinsettia Open House	Thursday 4 December	9:00 am to 3:00 pm	Horticulture Field Laboratory, Raleigh, N.C. Contact Bonnie for more details.
Grower Expo	Thursday–Sunday 8–11 January 1998		Hyatt Regency O'Hare, Rosemont, Ill. Contact GrowerTalks at 800.456.5380.
Green and Growin' Show	Friday–Sunday 16–18 January 1998		Benton Convention Center, Winston-Salem, NC. Contact Bonnie for more information.

BIOCONTROL IN GREENHOUSES

David B. Orr and James R. Baker

Department of Entomology, NC State University

Biological control is a tool to be considered in constructing an integrated pest management scheme for protected crop production. In a complete integrated pest management program, diseases, weeds, and plant growth must be considered as well as insects and mites. But because we are entomologists, this discussion covers insect and mite pests of greenhouse crops only. With IPM, each crop must be considered individually. Some greenhouse crops such as tomato and poinsettia are especially suitable for biocontrol for several reasons. Tomatoes and poinsettias have relatively few insect and mite pests. They are not grown year round so there is a break in the production cycle. Biological control organisms can be used especially effectively for caterpillars, spider mites and whiteflies. Table 1 gives biological controls now commercially available. Table 2 is a list of pesticides that are compatibility with various natural enemies used for biological control in the greenhouse.

Other Management Practices

Screening. Screening can significantly reduce numbers of insects flying into greenhouses. Even thrips can be excluded by several screening materials now on the market. A word of caution: the finer the screen, the greater its resistance to air flow into the greenhouse. For specifications on greenhouse screening, see Baker et al. (1993).

Clothing. Growers can avoid carrying insects into the greenhouse by not wearing white, blue, yellow or green clothing. Aphids, thrips and whiteflies are attracted to yellow, green and blue. Thrips are also attracted to white.

Quarantine. Growers should inquire if their supplier is having whitefly or mealybug problems. At least then growers will know what to expect

on the cuttings or plugs. In addition, all plant material should be inspected before it is brought into the greenhouse. New plant material should be kept in a separate section for a week or more before incorporating the new material into the production area (highly resistant thrips, aphids and whiteflies are readily transported throughout the greenhouse industry on cuttings and plants) to assure that pests are not integrated into the main production area.

Monitoring. Constant vigilance for insects, mites and disease is required for effective pest management. Certain employees should be assigned the responsibility of scouting for insects and other pests on a regular basis (weekly the winter and twice weekly in summer). Written records should be kept of where various pests are found. Pests should be monitored by using yellow sticky cards, yellow pan traps, and by regular examination of the foliage and occasionally the roots. Potato slices can be useful for monitoring fungus gnats.

Record Keeping. A log of pest type, locality, abundance and all pesticides applied should be kept. These records can be of long term benefit as many pests tend to appear about the same time each year. Short term benefits include knowing what pests survive a pesticide application. This alert the grower to the possibility of poor timing, poor application of the treatment, or pesticide resistance in the pest population. A change in the kind of treatment or pesticide can be made before the crop is significantly damaged.

Pest Recognition. It is important to be able to recognize the different kinds of pests in their various stages of development. The North Carolina Cooperative Extension Service

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Table 1. Commercially available biological controls for greenhouse use.

PEST	NATURAL ENEMY	RATE	UNIQUE CHARACTERS
Aphids	Aphid Lions <i>Chrysoperla spp.</i>	Preventative: 1-3/yd, Monthly, as needed Control (low infest.): 2 to 5/yd ² , Bi-weekly, 2 to 3 times Control (moderate infest.): 4 to 8/yd ² , Bi-weekly, 2 to 4 times Control (high infest.): 7 to 12/yd ² , Bi-weekly, 3 to 5 times Maintenance: 1 to 2/yd ² , Tri-weekly, Indefinitely COMMENTS: Rates shown above for larvae. For eggs, multiply rate times 5; for adults, divide by 4	Purchase fed larvae that are packaged individually. Lacewings are cannibalistic and should be well dispersed.
	Aphid Midge <i>Aphidoletes aphidomyza</i>	Preventative: 1 to 3/yd ² , Monthly, as needed Control (low infest.): 2 to 5/yd ² , Biweekly, 2 to 3 times Control (mod. infest.): 4 to 7/yd ² , Weekly, 2 to 4 times Control (high infest.): 6 to 9/yd ² , Weekly, 3 to 5 times Maintenance: 2 to 3/yd ² , Monthly, Indefinitely COMMENTS: Preventive releases should be made in sites open to the outside	Drop from plants into soil to pupate. If soil is not directly beneath foliage (i.e. if roots are bagged, etc.), they will die and not reproduce in the greenhouse. Can be kept active by using long-day lights.
	Aphid Parasitoids <i>Aphidius matricarae</i>	Preventative: 1 to 2/ yd ² , Bi-weekly, as needed Control (low infest.): 2 to 4/yd ² , weekly, 2 to 3 times Control (mod. infest.): 4 to 8/yd ² , weekly, 2 to 4 times Control (high infest.): N/A Maintenance: 2 to 3/yd ² , monthly	Shipped as live adults, ready to parasitize aphids.
	Lady Beetle <i>Hippodamia convergens</i>	Preventative: N/A Control (low infest.): 2 to 5/yd ² , Biweekly, 2 to 3 times Control (mod. infest.): 4 to 7/yd ² , Weekly, 2 to 4 times Control (high infest.): 6 to 9/yd ² , Weekly, 3 to 5 times Maintenance: 2 to 3/yd ² , Monthly, Indefinitely COMMENTS: Preventive releases should be made in sites open to the outside	"Bug Pro" and other synthetic food sources are available to help keep lady beetles put.
	Syrphid Maggots	N/A	May occur naturally where screening is not employed.
Broad Mite	Predaceous Mite <i>Neoseiulus barkeri</i>	10 to 30 per plant	

Table 1, continued.

PEST	NATURAL ENEMY	RATE	UNIQUE CHARACTERS
Caterpillars	Bacterium <i>Bacillus thuringiensis kurstaki</i> (various formulations)	Follow label directions (generally, 1 to 5 teaspoons per gallon of water)	Can be used with regular chemical pesticides
Fungus Gnats	Bacterium <i>Bacillus thuringiensis israelensis</i> (Gnatrol™)	Follow label directions (generally, 2 to 8 pints per 100 gallons of water)	Compatible with most pesticides.
	Nematodes <i>Steinernema carpocapsae</i> (Scanmask™)	19,000 per sq ft.	This strain is adapted to cooler soil temperatures.
	<i>Steinernema carpocapsae</i> (Ecomask™)	70,000 per sq ft.	This strain is adapted to warmer soil temperatures.
Leafminers	Warm Weather Leaf Miner Parasitoid <i>Dacnusa siberica</i>	Preventative: 1 to 3/yd ² , Bi-weekly, as needed Control (low infest.): 2 to 5/yd ² , Bi-weekly, 2 to 3 times Control (moderate infest.): N/A Control (high infest.): N/A Maintenance: 2 to 4/yd ² , Monthly, Indefinitely COMMENTS: Early season introduction will work the best. Use with parasitic nematodes	Will also feed on thrips pupae in the soil.
	Warm Weather Leaf Miner Parasitoid <i>Diglyphus isaea</i>	Preventative: 1 to 2/yd ² , Tri-weekly, as needed Control (low infest.): 2 to 4/yd ² , Bi-weekly, 2 to 3 times Control (mod. infest.): N/A Control (high infest.): N/A Maintenance: 2 to 3/yd ² , Monthly, Indefinitely COMMENTS: Late spring introductions will work the best. Use with parasitic nematodes	

Table 1, continued.

PEST	NATURAL ENEMY	RATE	UNIQUE CHARACTERS
Mealybugs	Australian Lady Beetle <i>Cryptolaemus montrouzieri</i>	Preventative: N/A Control (low infest.): 2 to 4/yd ² , Tri-weekly, 2 to 3 times Control (mod. infest.): 4 to 6/yd ² , Tri-weekly, 2 to 3 times Control (high infest.): 6 to 8/yd ² , Bi-weekly, 2 to 4 times Maintenance: 2 to 3/yd ² , Monthly, Indefinitely COMMENTS: Large scale use is normally in the southern states	Lady beetles are somewhat sensitive to pesticides including soap. Lady beetles work best at high mealybug populations and not so well with low infestations.
	Parasitic wasp <i>Leptomastix dactylopii</i>	2 per sq yd ² or 5 per infested plant. Repeat 1 or 2 times per year	Use in conjunction with the Australian Lady Beetle. Good control in 2 to 3 months. Citrus mealybug only.
Mealybug, Longtailed	Aphid Lions <i>Chrysoperla carnea</i>	Preventative: 1 to 3/yd ² , Monthly, as needed Control (low infest.): 2 to 5/yd ² , Bi-weekly, 2 to 3 times Control (mod. infest.): 4 to 8/yd ² , Bi-weekly, 2 to 4 times Control (high infest.): 7 to 12/yd ² , Bi-weekly, 3 to 5 times Maintenance: 1 to 2/yd ² , Tri-weekly, Indefinitely COMMENTS: Rates shown above for larvae. For eggs, multiply rate times 5; for adults, divide by 4	Larvae are recommended.
Scale Insects	Lady Beetles <i>Harmonia axyridis</i> or <i>Hippodamia</i>	Preventative: N/A Control (low infest.): 1 to 2/yd ² , Tri-weekly, 2 to 3 times Control (mod. infest.): 2 to 3/yd ² , Tri-weekly, 2 to 3 times Control (high infest.): 3 to 4/yd ² , Bi-weekly, 3 to 4 times Maintenance: 1 to 3/yd ² , Quarterly - Indefinitely COMMENTS: The release rate shown above are suggested until further data is available	
Soft Scales	Parasitic Wasp <i>Metaphycus helvolus</i>	5 to 10 per plant	For hemispherical scale, brown soft scale, nigra scale, black scale
Spider Mites	Predaceous Mites <i>Amblyseius (= Neoseiulus) fallacis</i>	Preventative: 5 to 9/yd ² , Monthly, as needed Control (low infest.): 10 to 18/yd ² , Tri-weekly, 2 to 3 times Control (mod. infest.): 18 to 26/yd ² , Bi-weekly, 2 to 4 times Control (high infest.): 26 to 32/yd ² , Bi-weekly, 2 to 4 times Maintenance: 3 to 6/yd ² , Monthly, Indefinitely	A very hardy mite that can do well under a variety of conditions. Will feed on pollen if prey are not available.

Table 1, continued.

PEST	NATURAL ENEMY	RATE	UNIQUE CHARACTERS
Spider Mites, continued	Predaceous Mites <i>Phytoseiulus persimilis</i> , <i>Neoseiulus cucumeris</i>	Release all predaceous mites at a rate of 1 per sq ft of crop plus 10 per mite-infested leaf	
Thrips	Insidious Flower Bug <i>Orius insidiosus</i>	Preventative: N/A Control (low infest.): 2 to 3/yd ² , Tri-weekly, 2 to 3 times Control (mod. infest.): 3 to 4/yd ² , Bi-weekly, 2 to 4 times Control (high infest.): 4 to 6/yd ² , Weekly, 2 to 4 times Maintenance: 1 to 2/yd ² , Monthly, Indefinitely COMMENTS: Use with <i>Hypoaspis miles</i> for mid- to long-term kill	Goes dormant with short days. Use in conjunction with <i>Neoseiulus cucumeris</i> .
	Predatory Mite <i>Amblyseius</i> (= <i>Neoseiulus</i>) <i>cucumeris</i>	Preventative: 30 to 90/yd ² , Tri-weekly, as needed Control (low infest.): 90 to 150/yd ² , Weekly, 3 to 5 times Control (mod. infest.): 150 to 210/yd ² , Weekly, 3 to 5 times Control (high infest.): 210 to 270/yd ² , Weekly, 4 to 6 times Maintenance: 60 to 120/yd ² , Monthly, Indefinitely COMMENTS: The Preventative and Maintenance releases may be made with packets, repeated every 8 weeks	Use in conjunction with <i>Orius insidiosus</i> .
	Soil-Dwelling Mite <i>Hypoaspis miles</i>	Preventative: 70 to 90/yd ² , Monthly, as needed Control (low infest.): 90 to 130/yd ² , Tri-weekly, 2 to 3 times Control (mod. infest.): 130 to 190/yd ² , Bi-Weekly, 2 to 4 times Control (high infest.): 190 to 270/yd ² , Bi-weekly, 3 to 5 times Maintenance: 8 to 100/yd ² , Monthly, Indefinitely	Will also feed on thrips pupae in the soil.
Whiteflies	Fungus <i>Beauveria bassiana</i> (Naturalis-L™)	Follow label directions (generally, 2 tsp to 2 Tbs. per gallon of water)	Apply 3 to 5 sprays for complete control.
	The Greenhouse Whitefly Parasitoid <i>Encarsia formosa</i>	Preventative: 4 to 6/yd ² , Bi-weekly, as needed Control (low infest.): 7 to 9/yd ² , Weekly, 3 to 4 times Control (mod. infest.): 10 to 14/yd ² , Weekly, 3 to 5 times Control (high infest.): N/A Maintenance: 5 to 7/yd ² , Monthly, Indefinitely COMMENTS: For whitefly sensitive crops, try 125-150% of rates above plus Preventative: Weekly	Insecticidal soap can be used in conjunction with if applied in the "black scale" or "brown scale" stage.

Table 1, continued.

PEST	NATURAL ENEMY	RATE	UNIQUE CHARACTERS
Whiteflies, continued	The Mixed Species Whitefly Parasitoid (<i>Eretmocerus californicus</i>)	Preventative: 4 to 6/yd ² , Bi-weekly, as needed Control (low infest.): 7 to 9/yd ² , Weekly, 3 to 4 times Control (mod. infest.): 10 to 14/yd ² , Weekly, 3 to 5 times Control (high infest.): N/A Maintenance: 5 to 7/yd ² , Monthly, Indefinitely COMMENTS: For whitefly sensitive crops, try 125 to 150% of rates above plus Preventative: Weekly	Use twice as many as <i>Encarsia formosa</i> because this parasite has males.
Whitefly, Silverleaf	The Mixed Species Whitefly Parasitoid <i>Eretmocerus californicus</i>	Preventative: 6 to 8/yd ² , Bi-weekly, as needed Control (low infest.): 9 to 13/yd ² , Weekly, 3 to 4 times Control (mod. infest.): 14 to 18/yd ² , Weekly, 3 to 5 times Control (high infest.): N/A Maintenance: 7 to 9/yd ² , Tri-weekly, Indefinitely	
	Whitefly Destroyer <i>Delphastus pusillus</i>	Preventative: N/A Control (low infest.): 1 to 2/yd ² , Tri-weekly, 2 to 3 times Control (mod. infest.): 2 to 3/yd ² , Bi-weekly, 2 to 4 times Control (high infest.): 3 to 4/yd ² , Weekly, 3 to 5 times Maintenance: 1 to 2/yd ² , Monthly, Indefinitely COMMENTS: For releases in tomatoes, use 150-200% of rates determined above	Release at "hot spots."

Some of the information in the chart above was provided by The Green Spot, Nottingham, NH

publication, AG-136, Insect and Related Pests of Flowers and Foliage Plants should be of some help in identifying insects and mites on plants and insects on sticky cards. The most frequently misidentified pests are shore flies and fungus gnats. Shore flies breed in algae and do little direct damage to poinsettias. However, shore flies are very resistant to pesticides. Fungus gnats breed in decaying roots and over watered peat moss. Fungus gnats can be very damaging to poinsettia cuttings and plants, but they can be controlled with pesticides. Another misidentification assumes that parasitized aphids are a new kind of tan aphid which cannot be killed with insecticides. Unfortunately pesticides are

sometimes expended uselessly against shore flies and parasitized aphids.

Chemical Control. Generally speaking, the natural enemies used in biological control are susceptible to many chemical sprays. However, some chemical products are compatible with natural enemies, and are listed in Table 1. Certain stages in the life cycle of natural enemies are more resistant to pesticides. For example, the "brown mummy" stage of aphids infected with *Aphidius* wasps is more resistant than other stages, as is the "black scale" or "brown scale" stage of *Encarsia* wasps.

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Table 2. Pesticide compatibility chart. This reference chart lists commercially available natural enemies and pesticides which are compatible with them. Compatibility means that after 24 hours of exposure to a given pesticide, the mortality rate of a natural enemy is 5% or less. It is still best to exercise caution and moderation when applying these substances around natural enemies, as some losses will occur. Moreover, the product's inert ingredient(s) may prove harmful. For information pertaining to effective residual periods for these and other products, please call your supplier.

PESTS	NATURAL ENEMY	COMPATIBLE PESTICIDE PRODUCTS
Aphids	Aphid Lion <i>Chrysoperla spp.</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Benlate; Botran; Daconil 2787; Enstar; Exotherm termil; Garlic Barrier; Imidan; Karathane; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Rovral, Chipco 26019; Vanguard
	Aphid Midge	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Basamid; Benlate; Botran; Bravo; Captan; Copper Bordeaux mix; Copper, Fixed; Cycocel; Daconil 2787; Dimilin; Easout; Enstar; Exotherm termil; Garlic Barrier; Karathane; Kumulus; Meltatox, Milban; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Pentac; Phytan 27 (copper); Rovral, Chipco 26019; Vanguard
	Aphid Parasitoids <i>Aphidius colemani</i> , <i>Aphidius matricariae</i>	Aaterra; Actinovate; Agrimycin, Agri-Strep; Apollo; Avid; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Basamid, Bavastin; Baycor; Benlate; Botran; Bravo; Captan, Copper Bordeaux mix; Copper, fixed; Cycocel; Daconil 2787; Dimilin; Enstar; Exotherm termil; Funginex; Garlic Barrier; Kumulus; Manzate 200, Daconil 200; Meltatox, Milban, Mycostop; Naturalis-O, <i>B. bassiana</i> ; Nimrod; Nissorun; Pentac; Phytan 27 (copper); Previcur-N; Ridomil; Ronilan; Rovral, Chipco 26019; Rubigan; Sulfur; Sumisclex; Thiram; Vanguard; Vendex, Torque plus
	<i>Aphytis melinus</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Benlate; Botran; Cycocel; Daconil 2787; Enstar; Exotherm termil; Garlic Barrier; Imidan; Karathane; Kumulus, Mycostop; Naturalis-O, <i>B. bassiana</i> ; Phytan 27 (copper); Rovral, Chipco 26019; Vanguard
	Lady Beetles <i>Hippodamia convergens</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Benlate; Botran; Cycocel; Daconil 2787; Enstar; Garlic Barrier; Imidan; Karathane; Kumulus; Meltatox, Milban, Mycostop; Naturalis-O, <i>B. bassiana</i> ; Pirimor; Rovral, Chipco 26019; Vanguard
	Multicolored Asian Lady Beetle <i>Harmonia axyridis</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Benlate; Botran; Cycocel; Daconil 2787; Enstar; Exotherm termil; Garlic Barrier; Imidan; Karathane; Kumulus, Mycostop; Naturalis-O, Rovral, Chipco 26019; Vanguard
	Syrphid maggots	Probably NOT compatible with most insecticides.
Broad mite	Predaceous mite <i>Neoseiulus barkeri</i>	Probably compatible with most pesticides listed below under Spider mites, Predaceous mites.

Table 2, continued.

PESTS	NATURAL ENEMY	COMPATIBLE PESTICIDE PRODUCTS
Caterpillars	Bacterium <i>Bacillus thuringiensis</i>	Compatible with most pesticides.
Fungus Gnats	Nematodes <i>Steinernema carpocapsae</i>	Compatible with most pesticides except for nematicidal products including diazinon and Dursban.
	Soil Dwelling Mite <i>Hypoaspis miles</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Basamid; Botran; Bravo; Copper Bordeaux mix; Copper, fixed; Cycocel; Daconil 2787; Dimilin; Enstar; Exotherm termil; Garlic Barrier; Imidan; Meltatox, Milban; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Phytan 27 (copper); Pirimor; Rovral, Chipco 26019; Vanguard
Leafminers	Warm Weather Leafminer Parasitoid <i>Dacnusa siberica</i> , <i>Diglyphus isaea</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Benlate; Botran; Cycocel; Daconil 2787; Enstar; Exotherm termil; Garlic Barrier; Imidan; Karathane; Kumulus; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Phytan 27 (copper); Rovral, Chipco 26019; Vanguard
Mealybugs	Aphid lions	See under Aphids
	Australian Lady Beetle <i>Cryptolaemus montrouzieri</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Benlate; Botran; SD, H-14, Dipel; Cycocel; Daconil 2787; Enstar; Exotherm termil; Garlic Barrier; Imidan; Karathane; Kumulus; Meltatox, Milban; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Pirimor; Rovral, Chipco 26019; Vanguard
	Predatory Wasp for Citrus Mealybug <i>Leptomastix dactylopii</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Benlate; Botran; Cycocel; Daconil 2787; Enstar; Exotherm termil; Garlic Barrier; Imidan; Karathane; Kumulus; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Rovral, Chipco 26019; Vanguard
Scale Insects	Lady beetles <i>Harmonia axyridis</i> or <i>Hippodamia</i>	See under Aphids
Soft scales	Predatory wasp <i>Metaphycus helvolus</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Benlate; Botran; Cycocel; Daconil 2787; Enstar; Exotherm termil; Garlic Barrier; Imidan; Karathane; Kumulus; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Phytan 27 (copper); Rovral, Chipco 26019; Vanguard
Spider mites	Predatory Mites <i>Amblyseius fallacis</i>	Actinovate; Agrimycin, Agri-Strep; All organophosphates; Ambush; Apollo; Avid; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Baycor; Benlate; Botran; Captan; Copper Bordeaux mix; Copper, fixed; Cycocel; Cyprex; Daconil 2787; Dikar; Dithane; Dursban; Enstar; Exotherm termil; Ferbam; Garlic Barrier; Guthion; Imidan; Kelthane; Kumulus; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Omite, Ornamite; Phytan 27 (copper); Pirimor;; Polyram; Ronilan; Rubigan; Sulfur; Talstar; Thiodan, floor spray; Thiram; Trygard; Vanguard

Table 2, continued.

PESTS	NATURAL ENEMY	COMPATIBLE PESTICIDE PRODUCTS
Spider mites, continued	Predatory mites <i>Phytoseiulus persimilis</i>	Actinovate; Agrimycin, Agri-Strep; Aliette; Apollo; Applaud; Avid; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Basamid; Bavastin; Baycor; Botran; Bravo; Captan; Copper Bordeaux mix; Copper, fixed; Cycocel; Daconil 2787; Diazinon FS; Dimilin; Dithane; Enstar; Exotherm termil; Fungaflor; Garlic Barrier; Imidan; Karathane; Kumulus; Manzate; Meltatox, Milban; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Nimrod; Nissorun; Phytan 27 (copper); Pirimor; Plant-Fume (nicotine); Previcur-N; Rovral, Chipco 26019; Sulfur; Sumisclex; Supareen-M; Talstar; Topsin M; Vanguard; Vendex, Torque plus
Thrips	Insidious plant bug <i>Orius insidiosus</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Benlate; Botran; Daconil 2787; Enstar; Exotherm termil; Imidan; Karathane; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Phytan 27 (copper); Rovral, Chipco 26019; Vanguard
	Predaceous wasp <i>Thripoctenus americanus</i>	Probably not compatible with insecticides.
	Predatory Mites <i>Amblyseius cucumeris</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Applaud; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Basamid; Bavastin; Baycor; Benlate; Botran; Bravo; Copper Bordeaux mix; Copper, fixed; Cycocel; Daconil 2787; Diazinon FS; Dimilin; Dithane; Enstar; Exotherm termil; Fungaflor; Funginex; Garlic Barrier; Imidan; Insecticidal soap; Karathane; Kumulus; Manzate; Meltatox, Milban; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Nimrod; Nissorun; Phytan 27 (copper); Pirimor; Plant-Fume (nicotine); Ronilan; Rovral, Chipco 26019; Rubigan; Sulfur; Supareen-M; Thiram; Topsin M; Vanguard; Vendex, Torque plus
	Soil dwelling mite <i>Hypoaspis miles</i>	See under Fungus gnats
Whiteflies	Greenhouse Whitefly Parasitoid <i>Encarsia formosa</i> and Mixed Species Whitefly Parasitoid <i>Eretmocerus californicus</i>	Aaterra; Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Basamid; Bavastin; Baycor; Benlate; Botran; Bravo; Captan; Copper Bordeaux mix; Copper, fixed; Cycocel; Daconil 2787; Dimilin; Enstar; Exotherm termil; Funginex; Garlic Barrier; Kumulus; Manzate 200, Daconil 200; Meltatox, Milban; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Nimrod; Nissorun; Pentac; Phytan 27 (copper); Previcur-N; Ridomil; Ronilan; Rubigan; Sulfur; Sumisclex; Thiram; Vanguard; Vendex, Torque plus
	Fungus <i>Beauveria bassiana</i> (Naturalis-L™)	Probably not compatible with fungicides.

Table 2, continued.

PESTS	NATURAL ENEMY	COMPATIBLE PESTICIDE PRODUCTS
Whiteflies, continued	Whitefly Destroyer <i>Delphastus pusillus</i>	Actinovate; Agrimycin, Agri-Strep; Apollo; Azatin EC (neem); <i>Bacillus thuringiensis kurstaki</i> B, SD, H-14, Dipel; B-Nine; Benlate; Botran; Cycocel; Daconil 2787; Enstar; Exotherm termil; Garlic Barrier; Imidan; Karathane; Kumulus; Mycostop; Naturalis-O, <i>B. bassiana</i> ; Rovral, Chipco 26019; Vanguard

The information in the chart above was provided by The Green Spot, Nottingham, NH; Applied Bio-Nomics, Ltd., Sidney, B. C., Canada; Biobest Biological Systems, bvba, Westerio, Belgium; Koppert B.V., Netherlands; and Dan Mayer, Washington State Univ. Information about the biorational substances for use with *Amblyseius fallacis* was compiled from slide-dip testing experiments conducted by S.E. Lienk, N.Y.S. Agr. Exp. Stn., Geneva, NY.

Sources of Natural Enemies

The Green Spot, 93 Priest Rd., Nottingham, NH 03290-6204, Tel: 603.942.8925, Fax: 603.942.8932

Ciba Bunting North America, PO Box 2430, Oxnard, CA 93034-2430, Tel: 805.986.8265, Fax: 805.986.8267

Koppert USA, 2856 South Main St., Ann Arbor, MI 48103, Tel: 313.998.5589, Fax: 313.998.5557

References

Baker, J.R., M.B. Crouse and E.A. Shearin. 1993. Screening as part of insect and disease management in the greenhouse. N.C. Flower Growers' Bull. 38(4): 12-17.

YOU MAY BE A GREENHOUSE REDNECK...

Billy Hardin, Hardin's Wholesale Florist, Liberty, N.C.

(The following top-ten indicators of being a greenhouse redneck were given by Billy at the banquet during the 1997 Southeast Greenhouse Conference and Trade Show. We're still not sure about Billy, but you may want to test yourself to see if you qualify as a greenhouse redneck. There were 11 redneck indicators, but the editor couldn't remember the last one; something to do with Crowder being your last name...)

- 1) If you think a wettable powder refers to B.C.'s or Goodies, you could be a greenhouse redneck.
- 2) If you think a Dosatron is a megavitamin, there's a good chance you're a greenhouse redneck.
- 3) If you think IPM is a large computer company, hey--there you go.
- 4) If you think Greenshield is a weapon used by Rambo, you could be a greenhouse redneck.
- 5) If you think that a growth regulator is some sort of sexual stimulant sold at the Circle K, chances are you're a greenhouse redneck and you

- need to take a vacation very, very soon.
- 6) If you think 20-20-20 means you have perfect vision, you could be a greenhouse redneck.
- 7) If you think cycocel is a room at the mental health clinic, well then...
- 8) If you think short days refer to Mondays and Fridays, you could be a redneck.
- 9) If you think parts per million has something to do with chicken McNuggets or a tachometer, you definitely could be a greenhouse redneck.
- 10) If you define the word "disbud" to mean "the beer in my hand," you are without a doubt a greenhouse redneck.

BUILDING A BUSINESS RELATIONSHIP WITH YOUR LENDER

**Alex White, Agricultural & Resource Economics, NC State University;
Troy D. Wilson and David M. Kohl, Agricultural & Applied Economics,
Virginia Tech University**

Debt-financing is an important facet of greenhouse and other horticultural operations. According to the Professional Plant Growers Association, in 1994 the average debt-to-asset ratio for the industry was 50.4 percent. This indicates that producers are currently borrowing \$0.50 for every \$1.00 of assets in their business. Put another way, their creditors "own" (have claims to) over one-half of the business's assets! With this in mind, choosing a lender is one of the most critical business decisions a horticultural producer must face. This article discusses the main factors to consider when choosing a lender.

A positive, open relationship between producer and lender is a key element in the success of the business. To set the groundwork for this relationship, think of your lender as your business partner. Your success directly impacts your lender. That is, if your business is successful, the lender earns profits; if your business fails, the lender loses money. (Keep in mind, lending institutions are in business to earn profits through successful loans, not through foreclosure. As a rule, banks lose money in foreclosure situations!) And your lender's actions directly impact your operation. A poorly-structured loan may have a considerable negative impact on the cash flow of your business, whereas a properly-structured loan may greatly enhance the cash flow position of your operation.

Now, the big question: What should you look for when choosing your lender? The simple answer is: Choose a lender who has the same qualities you would require of a new business partner; someone with whom you can develop a good working relationship. Consider the

following factors when selecting your lender.

An understanding of your industry and your business. Choose a lender who has experience in or up-to-date knowledge of the horticultural industry. In order for the lender to properly structure loan products, he/she must understand the nature of the industry. Look for an institution or a loan officer who remains current with the practices of your industry. "Speaking the same language" provides a common ground on which to work.

Also, the lender must understand your business, as well as your personal and business goals. Do not work with a lender who doesn't recognize your goals.

The capacity to meet your borrowing needs. By capacity I'm referring to the ability to make a loan in the amount you request. Many banks have limits on the amount of money they can lend to individuals, businesses, or certain industries. Loan limits may restrict the growth of your business. Be sure to ask about the loan limits which may affect your business!

Competitive loan products and quality services. Look for institutions which offer competitive interest rates, flexible loan terms, and quality financial services. Avoid "generic loans". A good loan officer should customize the loan to fit your individual business, such as matching the repayment schedule to the timing of cash flows in your business. Look for a lender who will negotiate on interest rates, but be careful about basing your choice of a lender strictly on interest rates. Think about your other input suppliers: Do you deal with the supplier with the lowest prices, or with the supplier who best fits your needs in terms of price, quality, timing, etc.?

Don't be afraid to pay a little bit more for quality service!

Also, consider other financial services you might need, such as cash management tools, insurance products, investment products, or retirement planning. You might be able to obtain lower interest rates on your loans by using other services of the bank.

Stable loan officer staff with proven "track records." As with most businesses, stability in the work force is usually a good indicator of quality. It takes time to establish a strong relationship with your lender, and this can be hard to do (and frustrating) if there is a rapid turnover of loan officers at your bank. Currently, there is a 12 to 17 percent annual turnover of loan officers nationwide. It is not uncommon in agriculture for a borrower to remain loyal to a certain loan officer rather than the institution. Again, look for loan officers with a proven history of quality service in your industry. Don't be afraid to ask your prospective loan officer for a list of references.

Long-term presence in your industry. Today, there is a consolidation in the banking and lending industry, with management teams actively seeking business-making opportunities. With this in mind, look for an institution which has a history of serving your industry in good times as well as bad times. Avoid lenders who jump in and out of industries during booms and busts. A good lender supports your industry during prosperous and challenging times. After all, in many instances you have greater need of support from your lender during the challenging times!

Access to the decision maker. Find out who makes the decision to grant or deny your loan request. Is it your loan officer, a local loan committee, or is it someone or some group at the "regional headquarters"? You should have access to the person or group who has authority on the loan decision. This allows you to more fully explain the circumstances surrounding your loan request. Besides, most producers would rather do business "eyeball-to-eyeball" with their lender

rather than dealing over the phone with someone at "headquarters".

Treats you as more than a number. Look for loan officers who work to establish a relationship with you. Are they interested in knowing more about you, your family, and your business? Will they follow-up with you after granting the loan? Do they often ask how they can better serve you, or how they can improve their working relationship with you? Do they have a genuine interest in helping you succeed without trying to get involved in the management of your business? Many times the personal touch provided by a quality loan officer is worth a slightly higher interest rate.

Professional loan officer staff. Just as when selecting a business partner, require your loan officer and lending institution to treat you in a professional manner. Look for a lender who has a record of trust, confidentiality, and ethical practices. Choose a lender who takes pride in his/her professionalism.

Processes your request in a timely manner. In today's fast-paced society you often have a limited "window of opportunity" in which to make business decisions. You need to know if you can get the loan in time to take advantage of an opportunity. And there's nothing more frustrating than having to wait, and wait, and wait to hear from your lender! Did you get the loan or not? Look for a lender who can process your loan request in a timely manner.

That should give you a good idea as to what to look for when selecting your lender. Now let's briefly turn our attention to your responsibilities in fostering a quality relationship with your lender. Just as with any relationship, it takes effort from both parties to make the relationship work. As a borrower, consider the following items.

Provide your lender with accurate, current financial statements. Quality information is vital to making sound decisions. Be prepared to provide your lender with pertinent financial information about yourself and your business. You can greatly speed up the loan process by

providing your lender with balance sheets, income statements (or tax returns), and cash flow statements for your business. Be sure to notify your lender of your personal debts, including credit card debt. In-depth sensitivity analysis on key factors of your operation is extremely helpful to your lender. Sensitivity analysis refers to factors such as your breakeven sales volume or breakeven selling price, or the maximum amount your sales revenues can decrease without impairing your ability to repay loans and other obligations. Sensitivity analysis is an extremely important management tool! You should also know the key indicators of financial success (e.g. current ratio, rate of return on assets, etc.) for your industry.

For established businesses, lenders usually require 3-5 years of financial information and at least 1 year's projections. Be forewarned: It is your responsibility to provide this information! Your loan officer may help you construct these statements, but don't count on it. If you have a relatively new business or if you are planning on starting a new business obviously you won't have 3-5 years of financial information. In these cases, provide current financial statements and at least 1 year of projections. Be forewarned again: Don't submit accountant-prepared statements to your lender without examining them -- you should be able to understand these statements!

Provide a business and marketing plan. A business plan and a marketing plan are extremely helpful to lenders, especially if they have limited experience in your industry, or if you do not have a "track record" in the industry. Business plans lay out why you are in business (your mission), how your business is organized, what you plan on producing, and other information as to the "make-up" of your operation. Marketing plans detail your marketing strategies: who is your target market, who is your competition, what is your pricing policy, how do you plan on marketing your products, etc. These plans give your lender a better feel for your operation, where it is headed, and how well you have planned your business.

Lenders also like to see contingency plans! A contingency plan is your "backup" plan if your primary plan falls through, for whatever reason. Contingency plans show alternative uses for your assets, alternative marketing plans, and "escape routes" in case you want to get out of business. This shows your lender that you are active in managing your business, and that you have tried to anticipate major events which may impact your operation.

Be honest, professional, and ethical. Be honest with your lender. Provide accurate information. Let them know what your goals are, not what you think they want to hear! Treat your loan office in a professional, ethical manner. Remember: once trust is violated, it is hard to renew a quality working relationship!

Maintain open communications at all times, not just when you need help. Like most people, lenders hate surprises! They would rather know of your proposed actions rather than what you just did! Too often agricultural producers decide to buy a piece of machinery and then ask their lender for a loan to pay for it! Keep your lender abreast of your business performance and decisions. Inform your lender of planned purchases or material changes in the operation or organization of your business. Minimize the surprise factor!

Debt-financing is almost required in today's agriculture. With an average debt-to-asset ratio of 50.4 percent, the greenhouse industry is no exception. Choosing a lender to meet your financial needs is an extremely important business decision. To make this decision more manageable, view your lender as a business partner. Look for the qualities in your lender that you want to see in your other business partners. A thumbnail sketch of such a person might include honesty, professionalism, experience and knowledgeable in the industry, easy to work with, and genuinely interested in the success of your business. Don't settle for the first loan officer you meet, or the bank that offers the lowest interest rate. Shop around for the right individual and the right

institution. Look for someone with whom you can build an open, lasting, professional relationship. But remember, building a strong relationship requires hard work by all parties involved. You have responsibilities to your lender as well! Work hard to establish a strong relationship with your lender. You might just find that your lender is your best friend and biggest supporter in times of need! Good Luck!

NCCFGA NEWS

Greetings! This is my first letter as the new president of the NCCFGA. I have served on the board since 1987, primarily as treasurer, and am excited about my new position. I am a second generation greenhouse grower, who was raised to be involved in and supportive of our industry associations. I plan to continue that involvement in my new capacity and am honored to be entrusted with this position and opportunity to promote floriculture in North Carolina.

Your association has just completed the Bedding Plant Field Day on July 30th. Despite intermittent rain showers, attendance at the event was good and attendee comments favorable. The display beds looked great, as pine straw mulch was used for the first time this year. The afternoon talks focused on perennials, as demand for these plants continues to increase in our state. Many thanks to Doug Bailey and other university personnel for their hard work and effort in making the 1997 Field Day a success. If you were unable to attend, please stop by the JC Raulston Arboretum soon--you will not be disappointed.

Your association has also just completed another successful participation in the Southeast Greenhouse Conference and Trade Show. Attendance was over 1,600 and the trade show was sold out. North Carolina was well represented with the highest number of attendees from participating states. Industry feedback on this show is that it is the premier event in the Southeast

for our industry and is an excellent value in terms of quality of trade show, educational programs, and participants. Make plans now to attend the SGCTS June 25-28, 1998 in Greenville, SC.

This fall your board of directors will meet to review research requests and decide how best to spend the revenues generated by NCCFGA events. We will be earmarking \$5,000 to university research for the upcoming year. If there are any items of business or issues you would like us to address, please contact me or a board member in your area. Our association is only as strong as your participation makes it.

I want to welcome new board members Sam Franklin, Bryan Foushee, and Frank Robertson. Many thanks to those board members rotating off for their work and service. Please take note in this issue of who your board and officers are for the 1997-98 term.

Well, there are plants to be watered and poinsettias to worry over, so I best be going. I hope everyone has a good late summer and fall season.

Best Regards,



Joe Stoffregen

1997-98 OFFICERS AND BOARD OF DIRECTORS

Officers

President: Joe Stoffregen
Homewood Nursery, Inc.
10809 Honeycutt Road
Raleigh, NC 27614
Ph. 919.847.0117 / FAX 919.847.3481

President-Elect: Craig Leonard
Kings' Greenhouses
524 Stallings Road
Matthews, NC 28105
Ph. 704.821.7507

Immediate Past-President: Jerry Whitley
Park-N-Shop Plant Market
4750 South Boulevard
Charlotte, NC 28220
Ph. 704.521.9339 / FAX 704.521.9279

Secretary / Treasurer: Steve Mercer
Barbara's Bloomer
1509 George II Highway Southeast
Bolivia, NC 28422
Ph. 910.253.8740 / FAX 910.253.8740

Board of Directors

Sandy Cruise (1998)
Metrolina Greenhouses
16400 Huntersville-Concord Road
Huntersville, NC 28078
Ph. 704.875.1371 / FAX 704.875.6741

Frank Dailey (1999)
Rockwell Farms, Inc.
6055 Highway 152 East
Rockwell, NC 28138
Ph. 704.279.5589 / FAX 704.279.8573

Bryan Foushee (2000)
Spring Meadow Greenhouses
2429 John Thompson Road
Graham, NC 27253
Ph. 910.376.8416

Sam Franklin (2000)
Franklin Brothers Nursery and Greenhouse
3193 Vicksboro Road
Henderson, NC 27536
Ph. 919.492.6166 / FAX 919.492.3536

Board of Directors, Continued

Barbara Hughes (1999)
Fowler's Nursery
6118 Highway 70
Clayton, NC 27520
Ph. 919.989.9000 / FAX 919.989.8010

Frank Robertson (2000)
Henry F. Michell Company
244 Yarborough Mill Road
Milton, NC 27305
Ph. 910.234.9588 / FAX 910.234.9589

Bernard Van Essendelft (1998)
Dual Venture Farms
Route 1, Box 142
Pantego, NC 27860
Ph. 919.927.3367

Steve Waddell (1999)
Roundtree Plantation Greenhouse
517 Roundtree Road
Charlotte, NC 28217
Ph. 704.523.6362 / FAX 704.523.1735

Hyman Young, Jr. (1998)
Velvet Ridge Greenhouses
P.O. Box 6826
Asheville, NC 28816
Ph. 704.254.3376 / FAX: 704.254.3513

NCCFGA Executive Secretary: Bonnie Holloman
NCCFGA
8600 Crowder Road
Raleigh, NC 27603
Ph. 919.779.4618 / FAX 919.779.1685

NCCFGA Educational Advisor: Douglas Bailey
Box 7609 Dept. of Horticultural Science
North Carolina State University
Raleigh, NC 27695-7609
Ph. 919.515.1195 / FAX 919.515.7747
e-mail: doug_bailey@ncsu.edu

**NORTH CAROLINA
COMMERCIAL FLOWER GROWERS' BULLETIN**

**DOUGLAS A. BAILEY, EDITOR
DEPARTMENT OF HORTICULTURAL SCIENCE
NORTH CAROLINA STATE UNIVERSITY
BOX 7609
RALEIGH, NC 27695-7609
PHONE: 919.515.1195 FAX: 919.515.7747
INTERNET: doug_bailey@ncsu.edu
HOME PAGE: <http://www2.ncsu.edu/floriculture/>**

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