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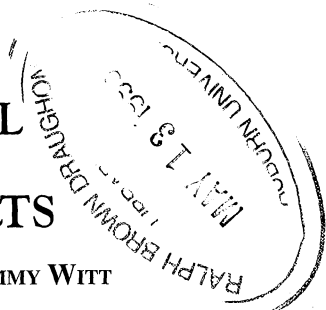
Circular 317 March 1996
Alabama Agricultural Experiment Station
Auburn University, Alabama
Lowell T. Frobish, Director

On the cover: a top-performing yellow
pansy cultivar, Universal Plus Yellow Blotch,
from Goldsmith Seed.

Information contained herein is available to all persons without regard to race,
color, sex, or national origin.

1994-1995 ANNUAL WINTER TRIAL GARDEN RESULTS

DARBY QUINN, BRIDGET BEHE, AND JIMMY WITT



INTRODUCTION

FROM FALL 1994 THROUGH SPRING 1995, 300 bedding plant cultivars were evaluated in the All-America Selections (AAS) Display Garden at the E.V. Smith Research Center (EVSRC). The objective of this study was to determine the cold tolerance and overall performance of winter-flowering annual plant cultivars to assist Alabama horticultural professionals and consumers in plant selection. Results may vary from year to year as climatic conditions affect cultivar performance.

AAS is a non-profit organization founded in 1932 to encourage the development of superior flower and vegetable cultivars through controlled trials; select AAS "winners" based on the nationwide trials; and communicate these winners to professionals and consumers through a network of display gardens and printed media. The EVSRC Trial Garden was established as an AAS Display Garden in 1993. EVSRC, a unit of the Alabama Agricultural Experiment Station, is located in Shorter, 15 miles east of Montgomery, Ala. (latitude 32° 30'N, longitude 85° 40'W).

Similar tests were conducted at more than 200 display gardens throughout the U.S. to assess the general performance of new bedding plant cultivars under local environmental conditions. The nearest of these other trial gardens is located at Callaway Gardens in Pine Mountain, Ga. Other display gardens in Alabama

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are at Bellingrath Gardens in Theodore and the Birmingham Botanical Garden. This publication presents results from the E. V. Smith trials. Comparison of results from several display sites will increase the reliability of the findings because environmental variables such as air temperature, humidity, exposure, cultural practices, soil type, rainfall and supplemental irrigation, and insect and disease pressures can greatly affect plant performance.

MATERIALS AND METHODS

Raised beds were created using existing Norfolk-Orangeburg loamy sand association soil (fine, loamy, siliceous, thermic Typic Kandiuults). The beds were constructed three years ago using treated railroad ties. Soil was tilled and fumigated with methyl bromide the previous April, and the soil was tested and amended accordingly at that time. After planting, there was no additional fertilization, pesticide application, or deadheading during the course of the evaluation. The beds were watered with an overhead irrigation system to provide one inch of total rainfall and supplemental irrigation each week. Beds were located in full sun and a bark mulch was applied to a depth of approximately two inches after planting.

Seeds of the entries were donated by several companies and grown by a single commercial producer in Alabama. Twelve plants of each cultivar were planted in two rows of six each, and they were planted nine inches on center. The outside four plants were used as guard rows. The inside eight plants were evaluated bimonthly from Dec. 5, 1994, through March 27, 1995. They were rated each time by the same person using a 1-5 scale (0 = plant died; 1 = small display of foliage with no flowers; 2 = adequate foliage with no flowers or few buds showing; 3 = adequate to large amount of foliage and a relatively small floral display; 4 = sufficient foliage and floral display to be attractive in the landscape; and 5 = superior floral display and sufficient foliage display). Ratings were made in whole number units. Flowering plants were rated primarily based on their floral displays. However, size, shape, and freedom from insect, disease, or other blemishes were also considered. As shown in Table 1, the weather during this trial period was warmer and drier than normal.

PANSY PERFORMANCE

Many pansy cultivars performed exceptionally well. Evaluations included three pink, 12 rose, 13 purple, 14 orange, 17 white, 17 mixed, 22 red, 25 yellow, and 38 blue cultivars. The top two cultivars in each color group and those cultivars with an average 2.5 rating or higher are listed in Table 2. The average rating shows the performance over the testing period. Peak rating shows the highest score for that cultivar. Peak dates indicate the evaluation times that the peak rating was achieved. All pansies reached their peak in March. Many cultivars earned a peak rating of 5. Two yellow cultivars, Springtime Yellow Marble (Clause) and Universal Plus Yellow Blotch (Goldsmith), tied for the top average rating of 3.1.

The four series of pansy cultivars that consistently performed well in all color categories were Universal, Imperial, Fama, and Delta.

SNAPDRAGON PERFORMANCE

Twenty cultivars of snapdragons were evaluated from December 1994 through March 1995 with an emphasis on floral display and interest contributed to the winter landscape. None of the entries performed spectacularly, although many performed respectably. Liberty Crimson was the best performer with a peak rating of 3.88 and an average rating of 2.16. Overall, the standard-height cultivars outperformed the dwarf cultivars with more flowers and less internal dieback. These plants were left "in bed" to become a part of the Summer Annual Trial Garden to evaluate their long-term contribution to the landscape.

DIANTHUS PERFORMANCE

Six cultivars of dianthus were evaluated between December 1994 and March 1995. Due to a shortage of cultivars to compare, studies focused on each cultivar's individual performance and acceptability in the landscape setting. All of the cultivars performed well. The best in this small trial for each color group was as follows: violet — Floral Lace Violet Picotee; rose — Floral Lace Rose; white — Princess White; and mixed — Telstar Mix. All these cultivars rated a 3 or higher for a minimum of six weeks.

ACKNOWLEDGMENTS

Pursell Industries of Sylacauga, Ala., donated controlled-release fertilizer for the evaluations in 1994-95. Several seed companies donated seed samples for the evaluations. David and Martha Wright of Wright's Nursery and Greenhouses, Inc., in Plantersville, Ala., produced all the seedlings for this experiment. Personnel at the E.V. Smith Research Center Horticulture Unit established and maintained the beds used in the 1994-95 Winter Trial Garden. Contributing seed companies included Clause Seed, Goldsmith Seed, Wright's Nursery and Greenhouse, Vaughn Seed, Pan American Seed, Benary Seed, Bodger Seed, and American Swiss.

TABLE 1. AVERAGE MONTHLY TEMPERATURE, PRECIPITATION, AND LIGHT LEVELS DURING TRIAL GARDEN EVALUATIONS AT E. V. SMITH RESEARCH CENTER

Month	Avg. temp.	100-yr. avg. temp.	Avg. precip.	30-yr. avg. precip.	Avg. light level
	<i>°F</i>	<i>°F</i>	<i>in.</i>	<i>in.</i>	<i>watts/hr./m²</i>
Nov.	58.7	54.8	3.25	4.09	3,094
Dec.	50.5	46.8	2.76	5.19	2,319
Jan.	46.6	43.2	4.23	4.98	2,730
Feb.	48.5	46.5	4.81	5.57	3,488
Mar.	58.8	54.3	4.56	6.60	4,150

TABLE 2. PANSY CULTIVAR PERFORMANCE IN 1994-95

Cultivar (Source)	Face	Avg. rating	Peak rating	Peak date
Yellow				
Springtime Yellow Marble (Clause)	y	3.1	4.8	3/13, 3/27
Universal Plus Yellow Blotch (Goldsmith)	y	3.1	4.6	3/13, 3/27
Crystal Bowl Yellow (Wright's)	n	2.9	4.6	3/27
Delta Pure Primrose (Vaughn)	n	2.9	4.4	3/27
Universal Plus Yellow (Goldsmith)	n	2.9	4.6	3/27
Blue				
Bingo Blue with Blotch (Pan American)	y	2.8	5.0	3/13, 3/27
De Chalon (Clause)	n	2.8	5.0	3/13, 3/27
Fama Dark Eyed Blue (Benary)	y	2.8	5.0	3/13, 3/27
Fama True Blue (Benary)	n	2.8	5.0	3/13, 3/27
Happy Face Blue (Bodger)	y	2.8	5.0	3/13, 3/27
Imperial Silver Blue (Vaughn)	n	2.8	5.0	3/13, 3/27
Rally Deep Blue with Blotch (Pan American)	y	2.8	5.0	3/13, 3/27
Roc Blue with Light Flag (Sluiss)	y	2.8	5.0	3/13, 3/27
Roc Light Blue (Sluiss)	n	2.8	5.0	3/13, 3/27
Skyline Blue with White Flag (Sluiss)	y	2.8	5.0	3/13, 3/27
Universal Plus Beaconsfield (Goldsmith)	n	2.8	5.0	3/13, 3/27
Universal Plus True Blue (Goldsmith)	n	2.8	5.0	3/13, 3/27
White				
Happy Face White (Bodger)	y	2.7	4.9	3/27
Delta White with Blotch (Vaughn)	y	2.5	4.9	3/27
Rally Pure White (Pan American)	n	2.5	4.0	3/27
Purple				
Atlas Purple (Bodger)	n	2.8	5.0	3/13, 3/27
Bingo Deep Purple (Pan American)	n	2.8	5.0	3/13, 3/27
Fama See Me (Benary)	y	2.8	5.0	3/13, 3/27
Imperial Purple and White (Vaughn)	y	2.8	5.0	3/13, 3/27
Majestic Giants Purple (Vaughn)	y	2.8	5.0	3/13, 3/27
Springtime Black (Clause)	n	2.8	5.0	3/13, 3/27
Universal Plus Violet Blotch (Goldsmith)	y	2.8	5.0	3/13, 3/27
Rose				
Bingo Light Rose (Pan American)	n	2.8	5.0	3/27
Crystal Bowl Primrose (Wright's)	n	2.8	5.0	3/13, 3/27
Red				
Clear Sky Red (Sluiss)	n	2.8	5.0	3/13, 3/27
Delta Carmine with Blotch (Vaughn)	y	2.8	5.0	3/13, 3/27
Delta Pure Red (Vaughn)	n	2.8	5.0	3/27
Majestic Giants Scarlet Br. Shad (Vaughn)	y	2.8	5.0	3/13, 3/27
Majestic Giants Red and Yellow (Vaughn)	y	2.8	5.0	3/13, 3/27
Maxim Red and Yellow (Vaughn)	y	2.8	5.0	3/13, 3/27
Universal Plus Red Wing (Goldsmith)	y	2.8	5.0	3/13, 3/27
Orange				
Fama Orange (Benary)	n	2.8	5.0	3/13, 3/27
Imperial Orange (Vaughn)	n	2.8	5.0	3/13, 3/27
Imperial Orange Prince (Vaughn)	y	2.8	5.0	3/13, 3/27
Rally Orange (Pan American)	n	2.8	5.0	3/13, 3/27
Mix				
All Sky Mix (Sluiss)	n	2.8	5.0	3/13, 3/27
Delta Pure Colors Mix (Sluiss)	n	2.8	5.0	3/13, 3/27
Fama Mix (Benary)	y	2.8	5.0	3/13, 3/27
Happy Face Mixture (Bodger)	y	2.8	5.0	3/13, 3/27
Medallion Mix (Clause)	y	2.8	5.0	3/13, 3/27
Universal Plus Mixture (Goldsmith)	n	2.8	5.0	3/13, 3/27
Pink				
Imperial Pink Shades (Vaughn)	y	2.5	5.0	3/27

RATINGS

Plants were evaluated twice monthly from December 1994 through March 1995. They were rated each time by the same person using a 1-5 scale. Flowering plants were rated primarily on their floral display, but size, shape, and freedom from insect or disease blemishes were also considered. Kale was rated without consideration of flowering.

RATING SYSTEM: 0 = plant dies; 1 = small display of foliage with no flowers; 2 = adequate foliage with no flowers or few buds showing; 3 = adequate to large amount of foliage and a relatively small floral display; 4 = sufficient foliage and floral display to be attractive in the landscape; and 5 = superior floral display and sufficient foliage display. Ratings were made in whole number units. Display was defined by size and color of the leaves.

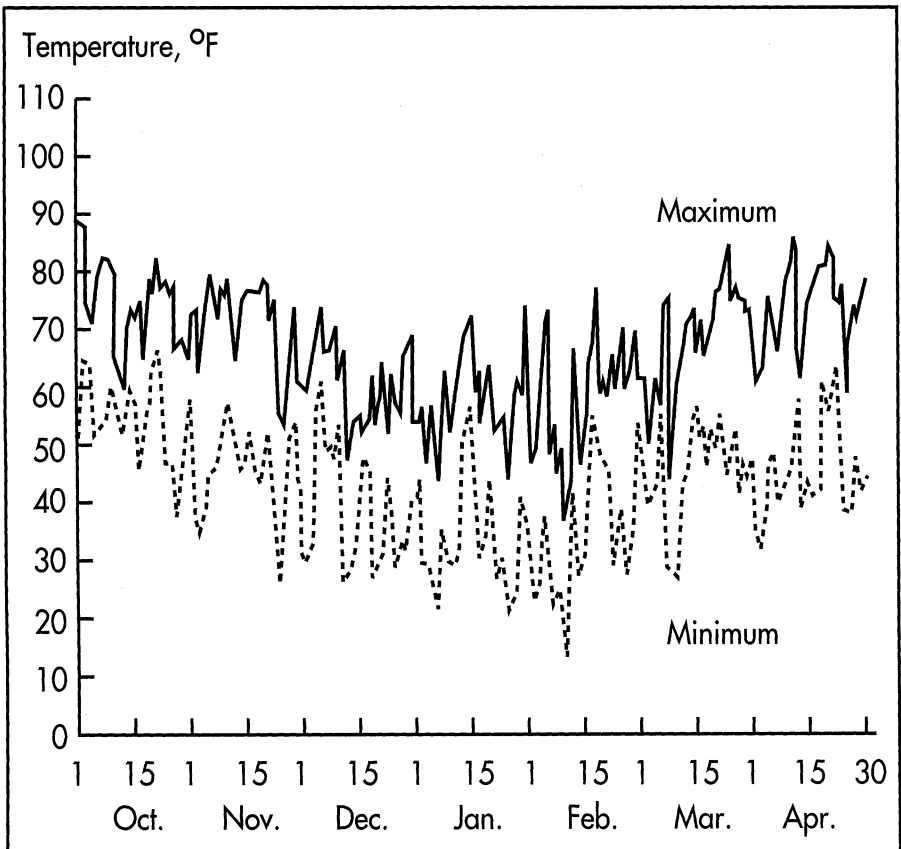
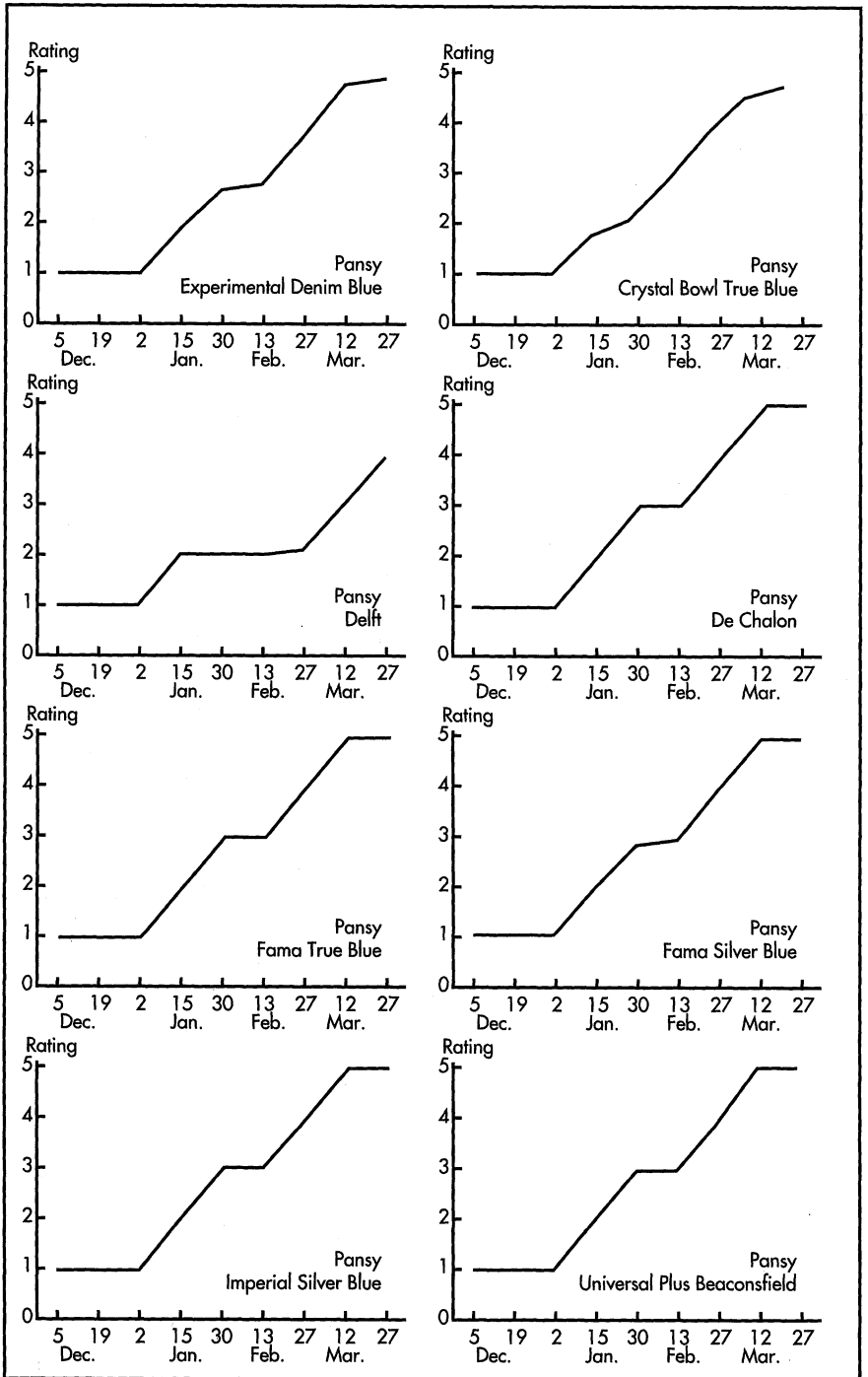
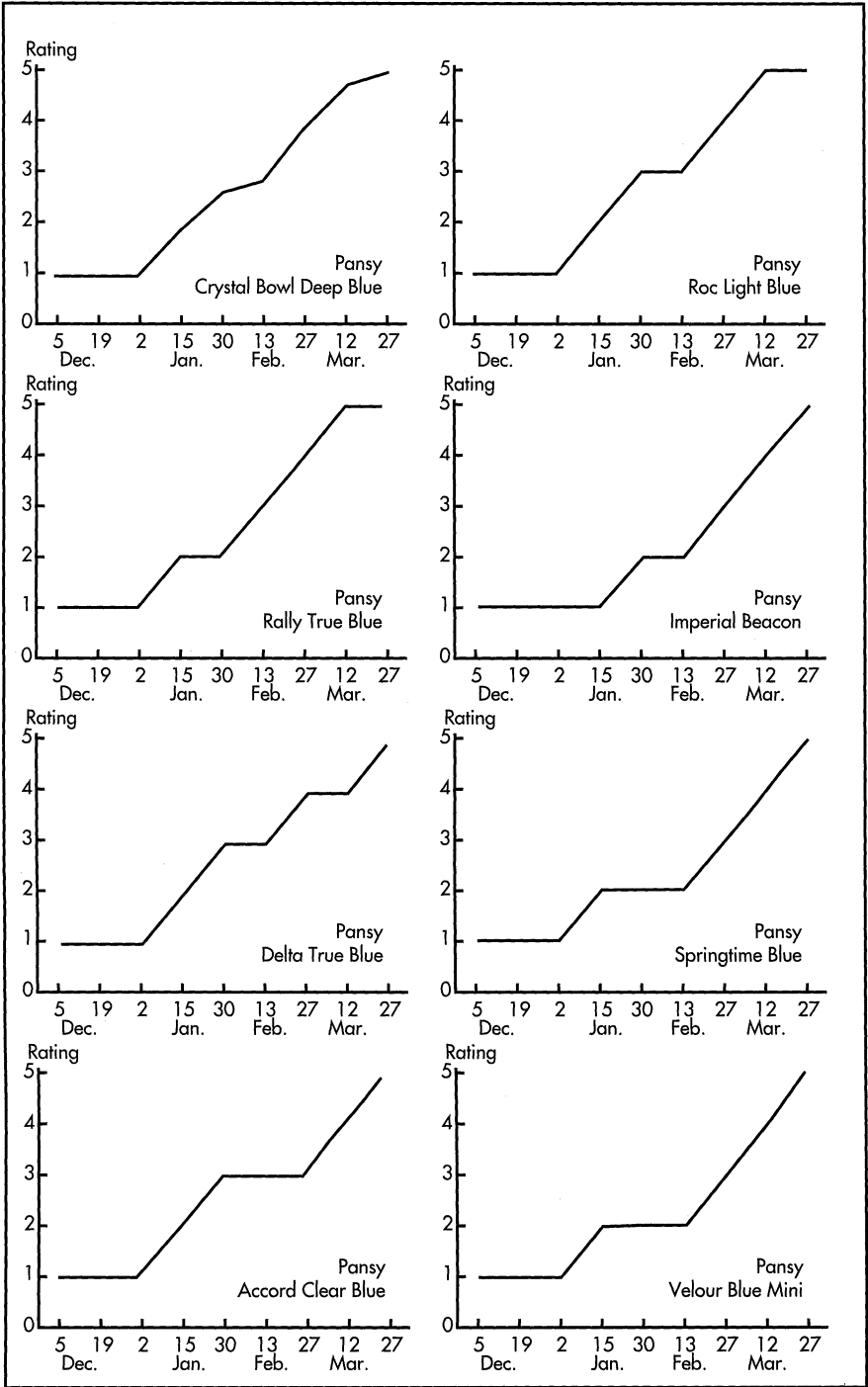
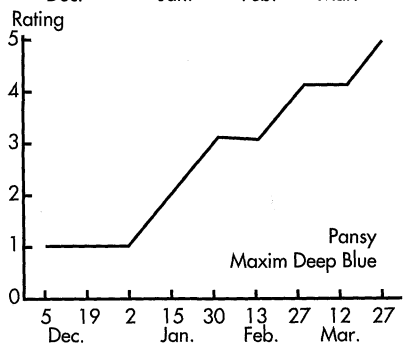
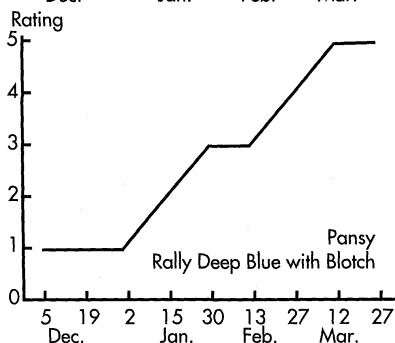
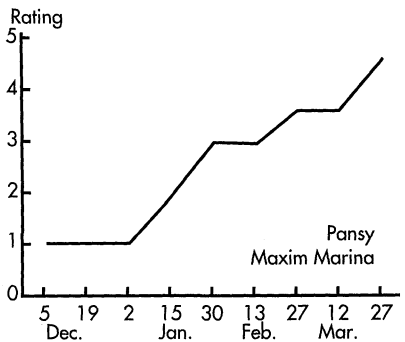
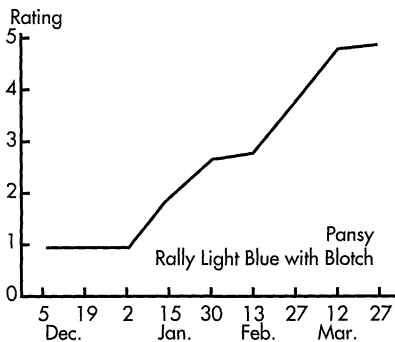
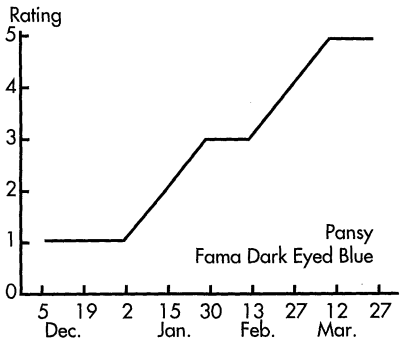
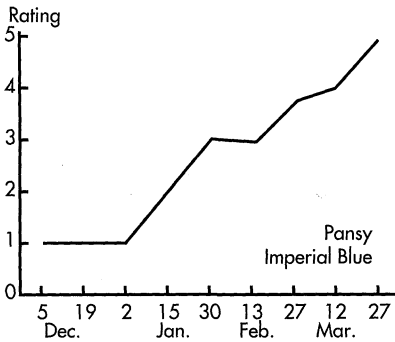
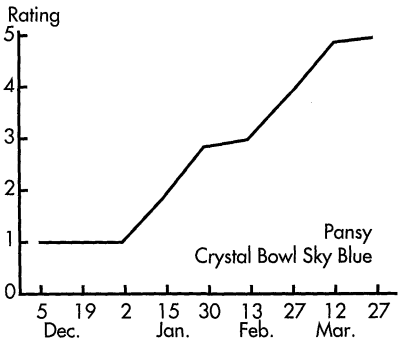
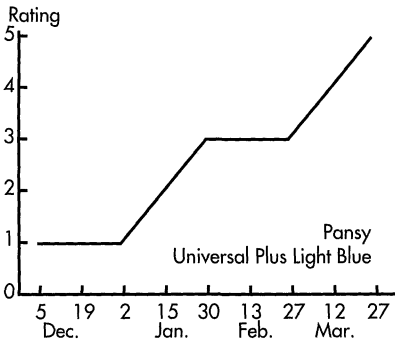
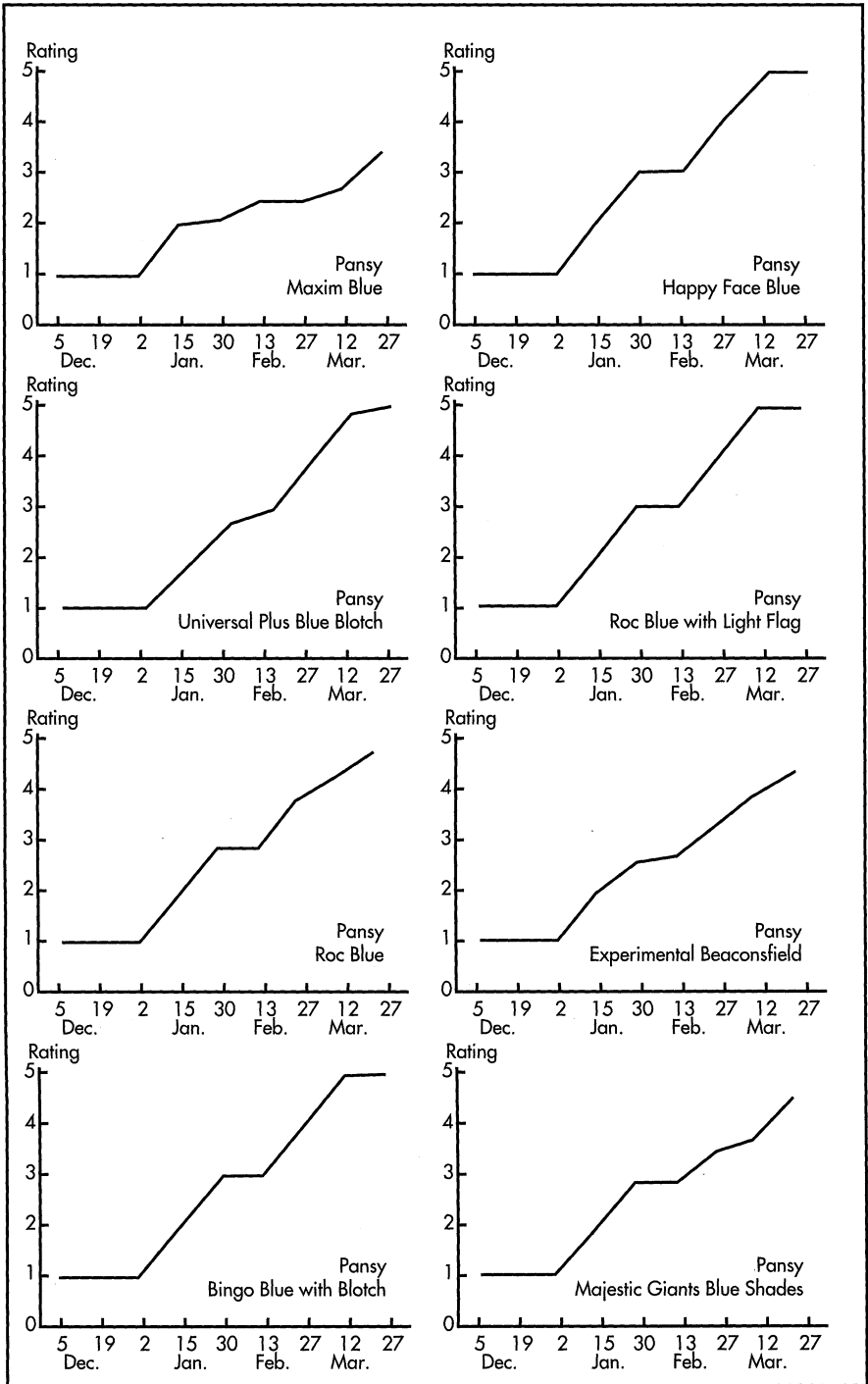


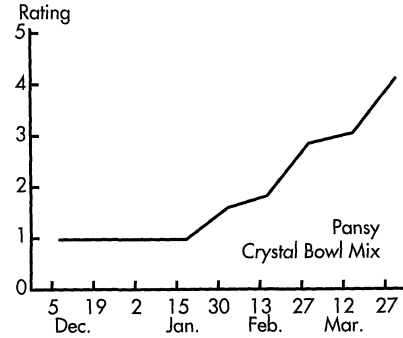
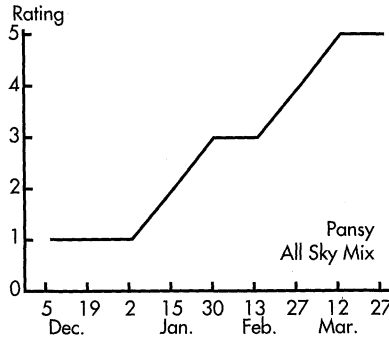
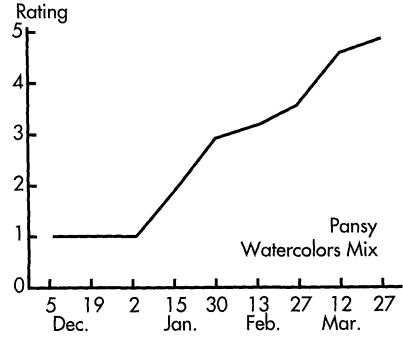
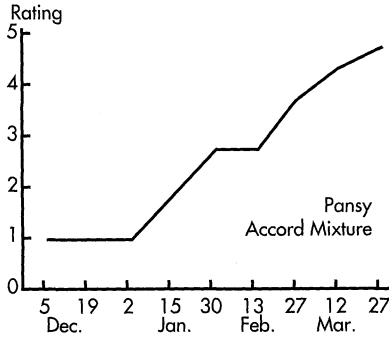
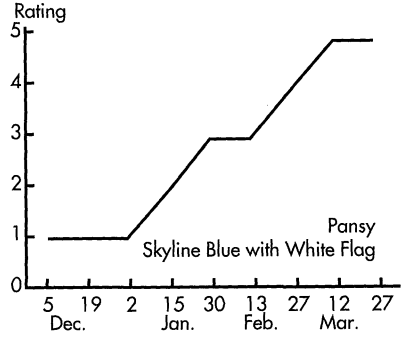
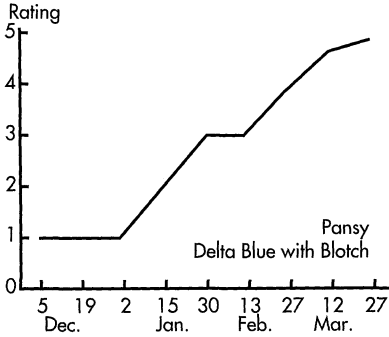
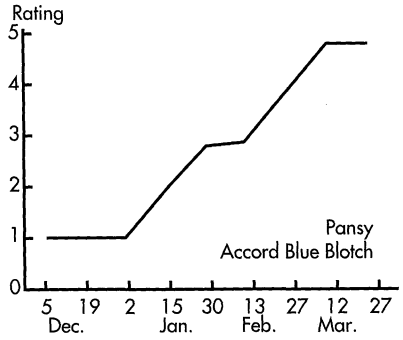
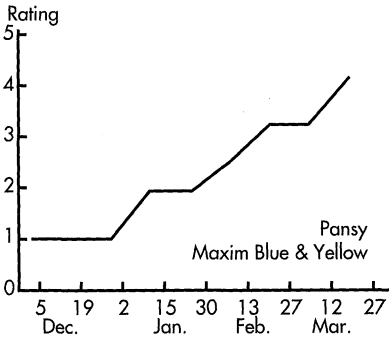
Figure 1. Minimum and maximum air temperatures at the E. V. Smith Research Center during the 1994-1995 Winter Trial.

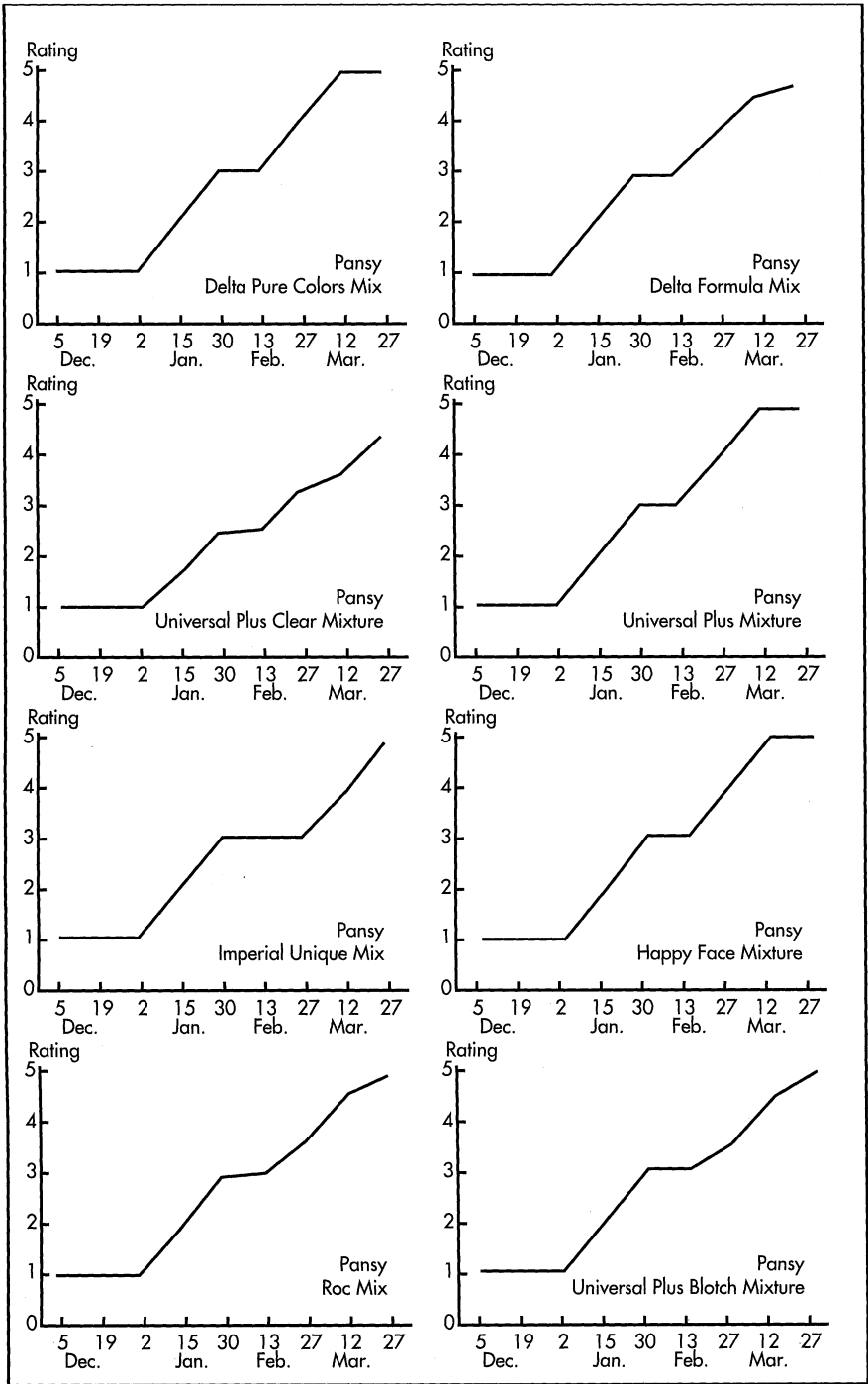


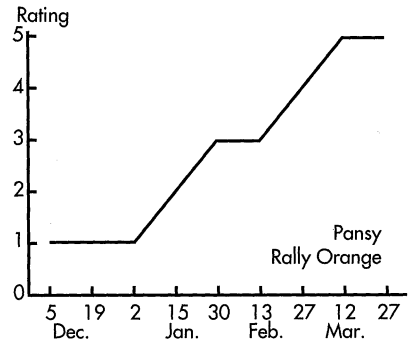
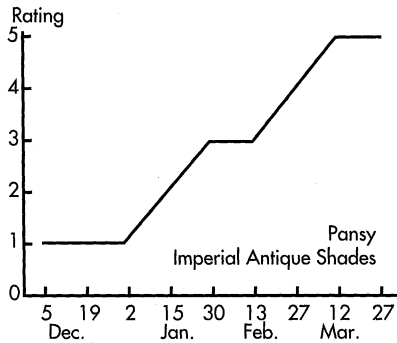
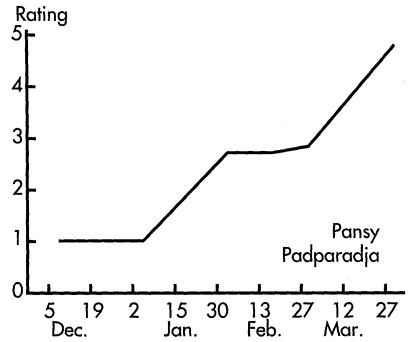
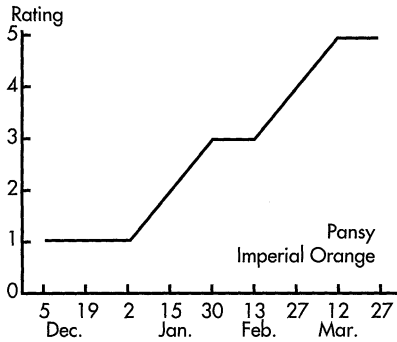
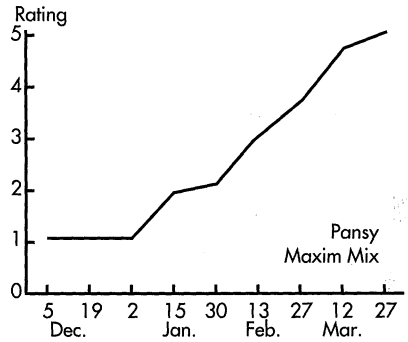
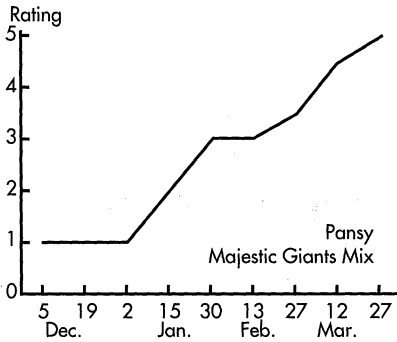
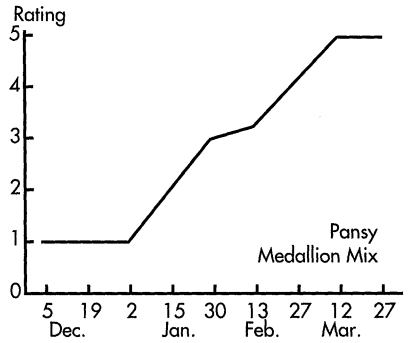
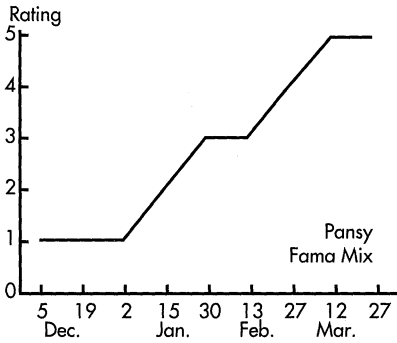


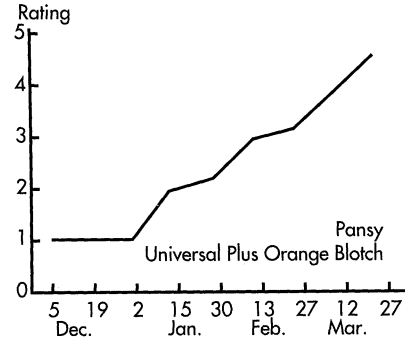
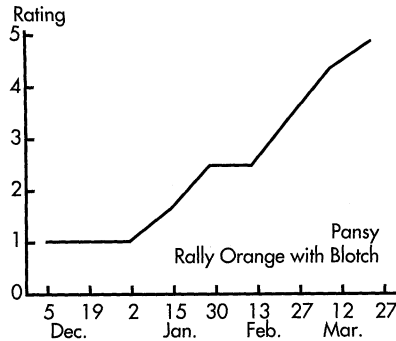
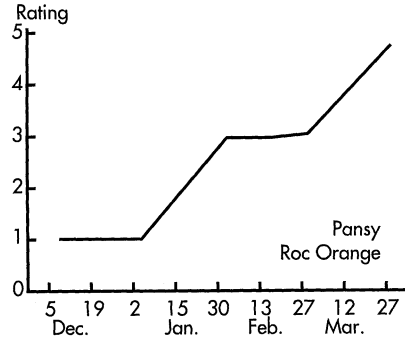
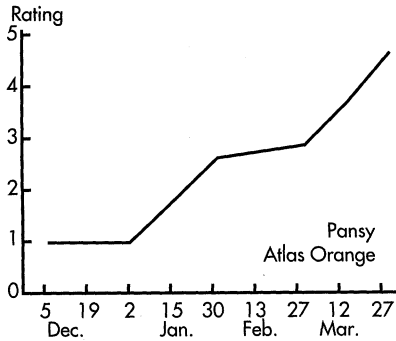
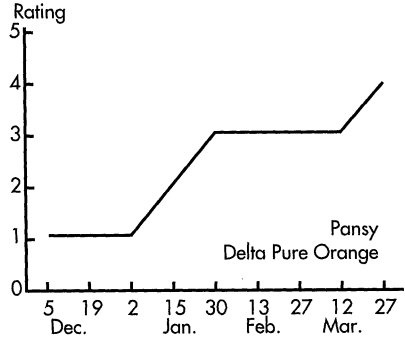
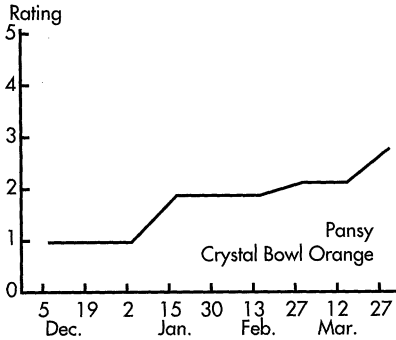
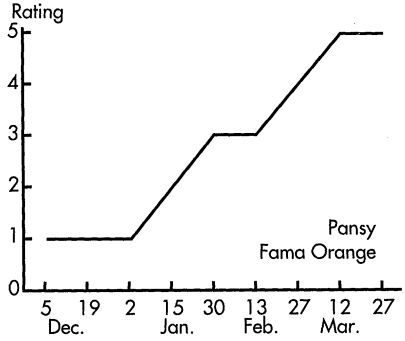
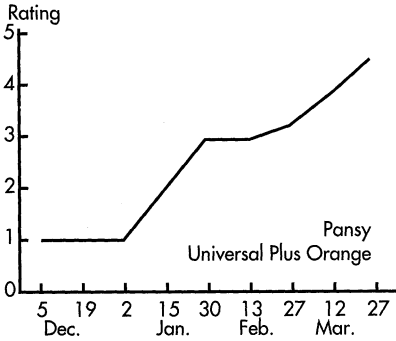


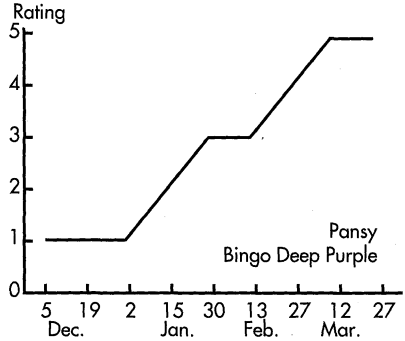
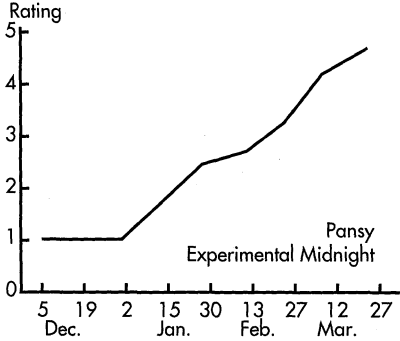
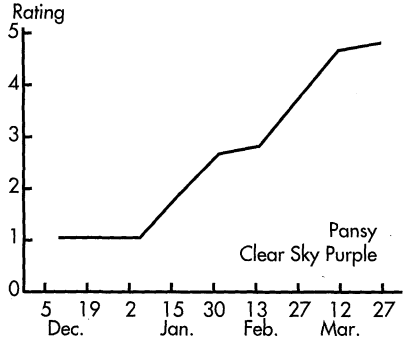
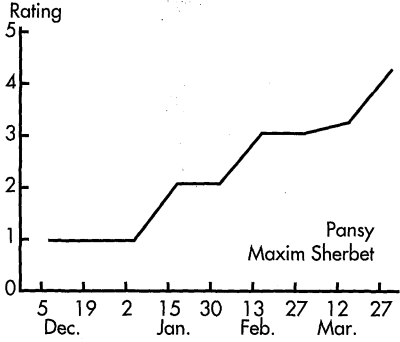
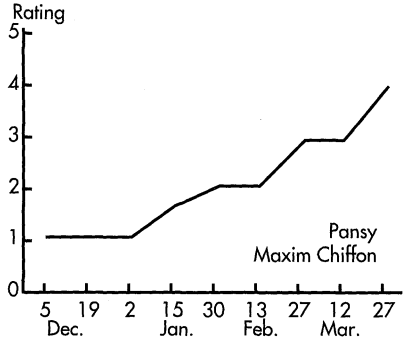
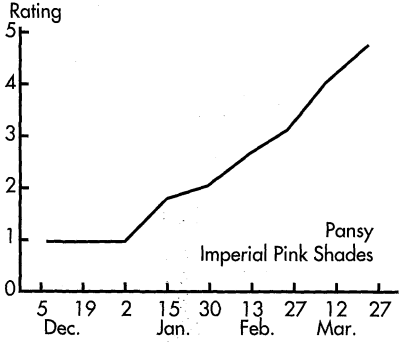
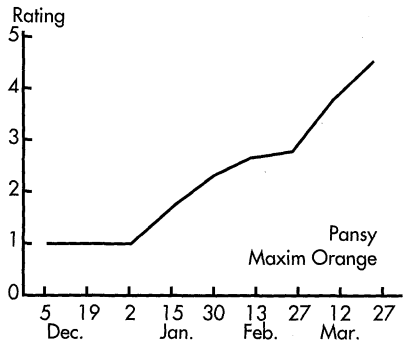
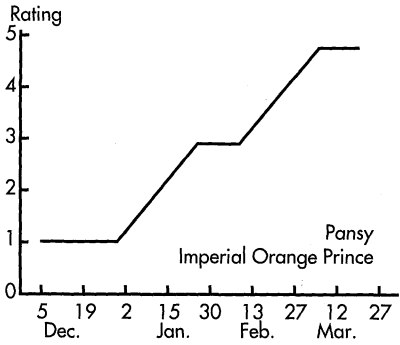


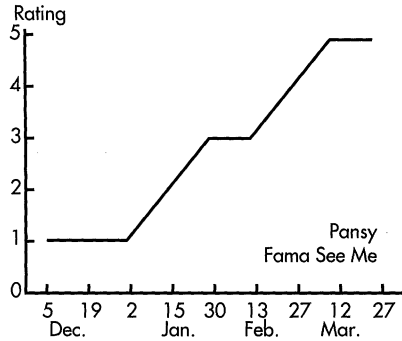
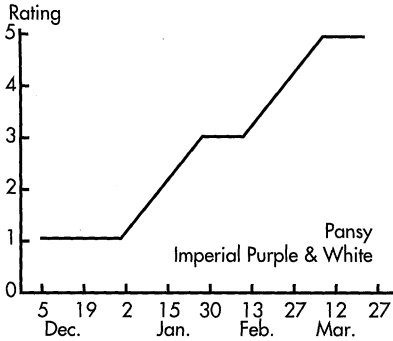
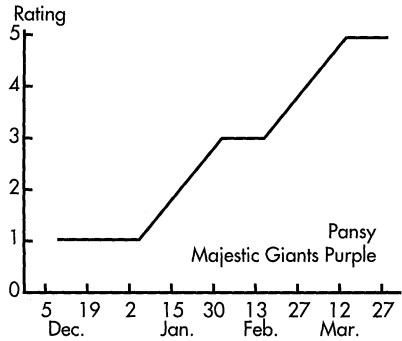
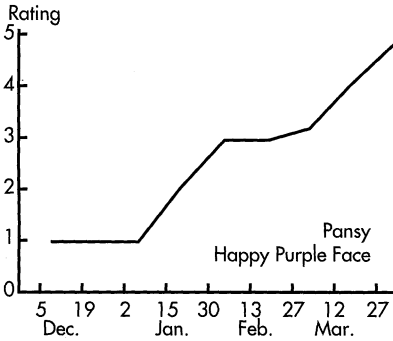
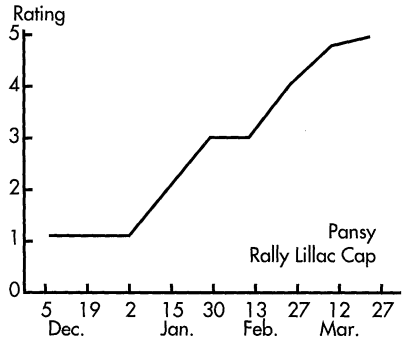
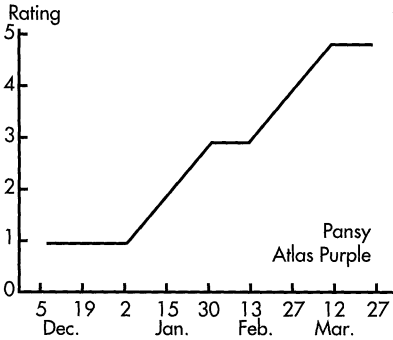
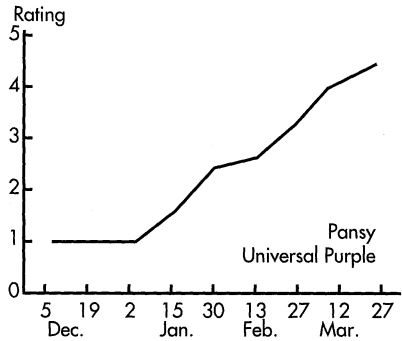
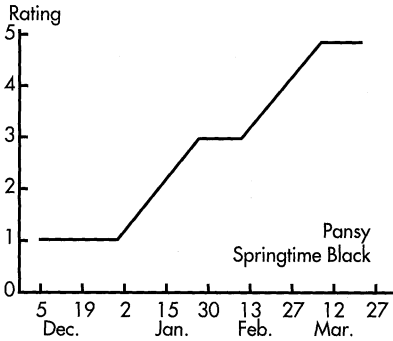


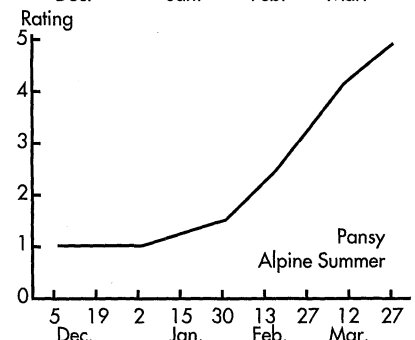
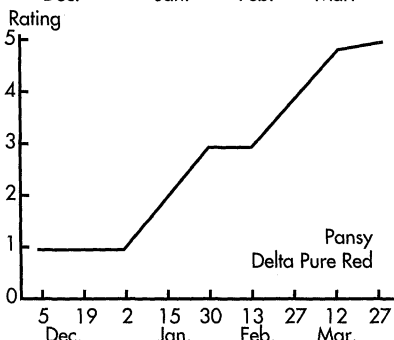
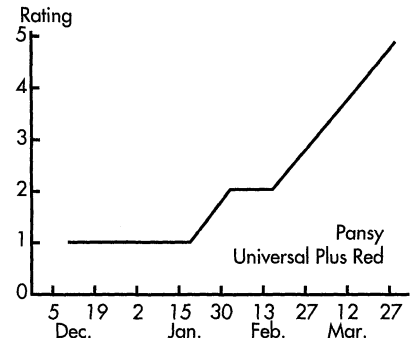
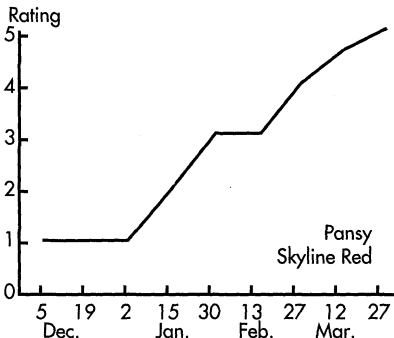
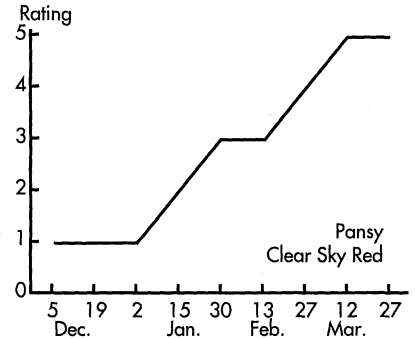
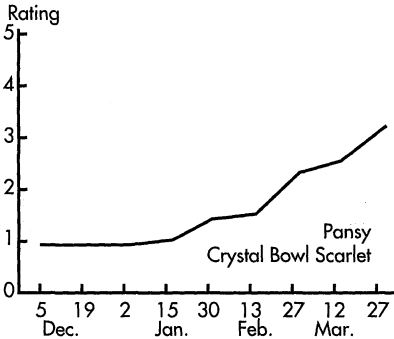
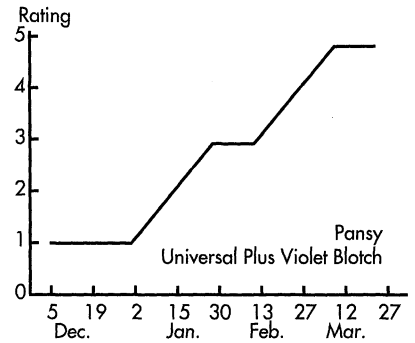
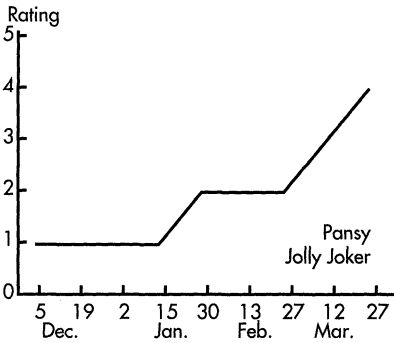


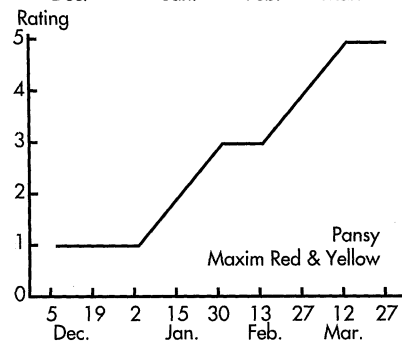
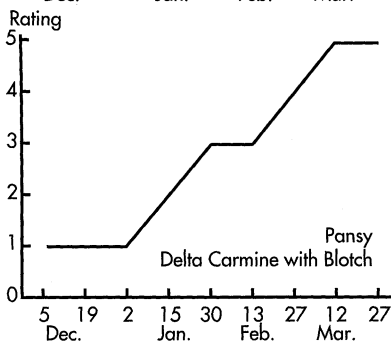
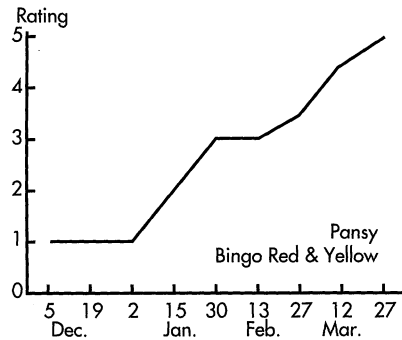
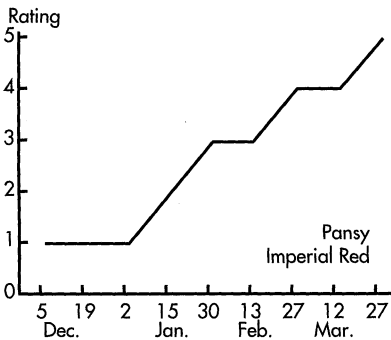
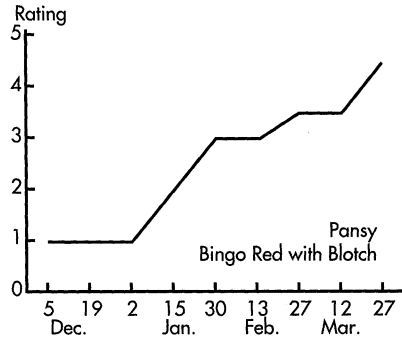
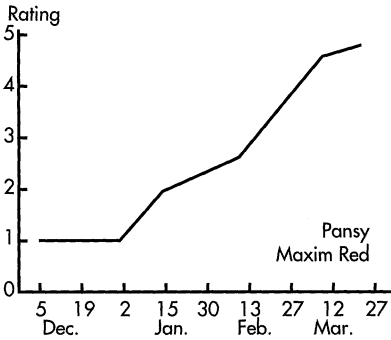
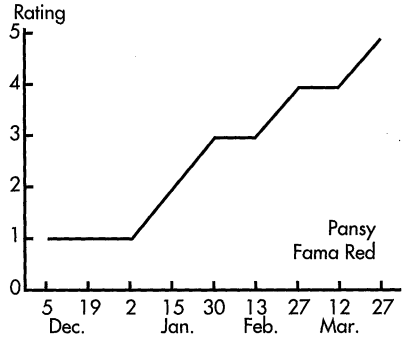
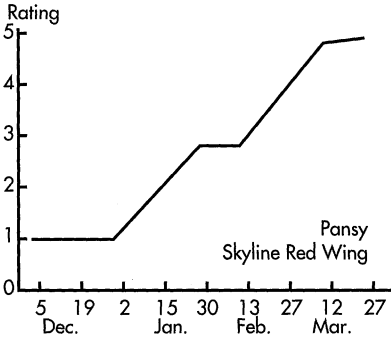


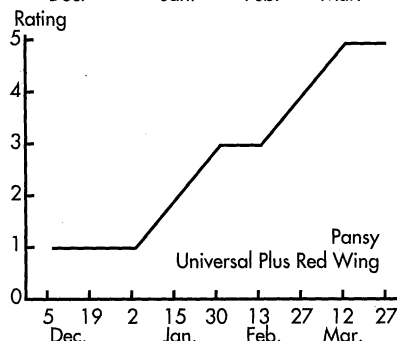
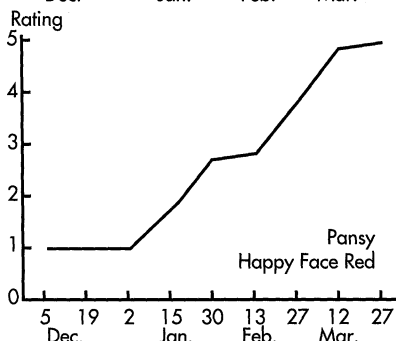
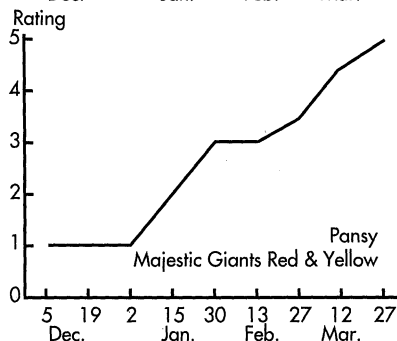
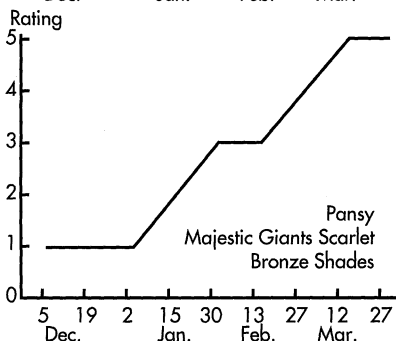
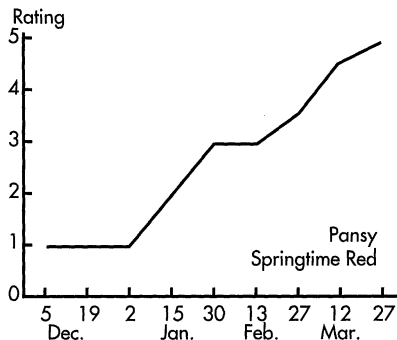
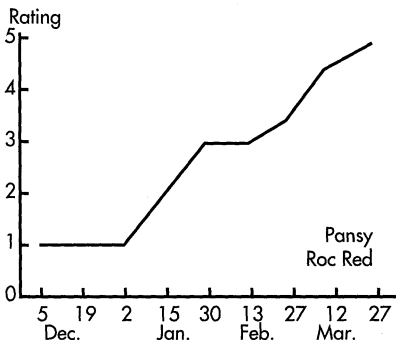
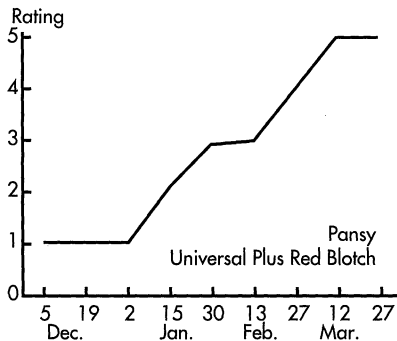
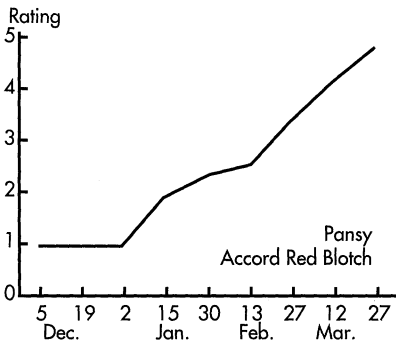


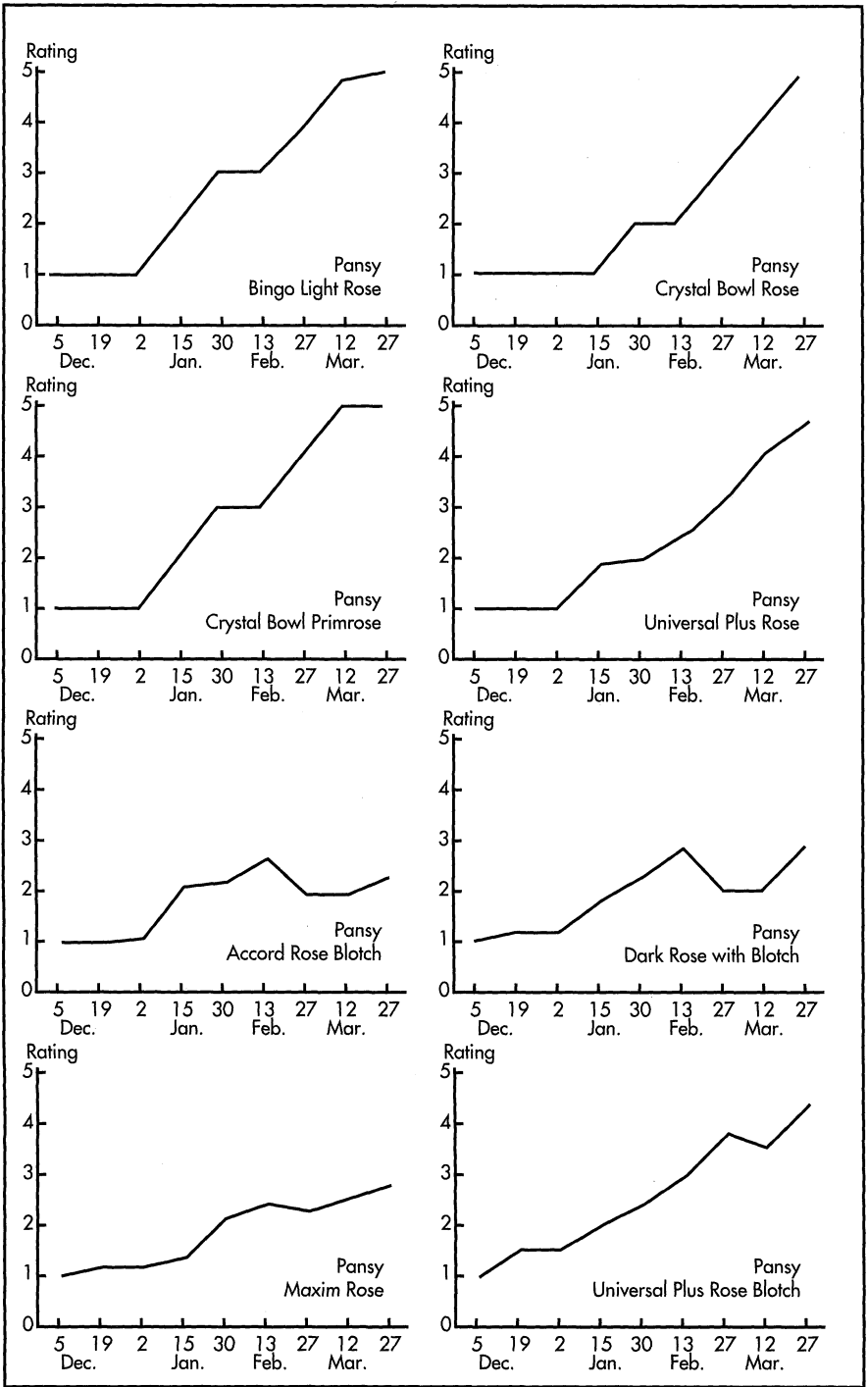


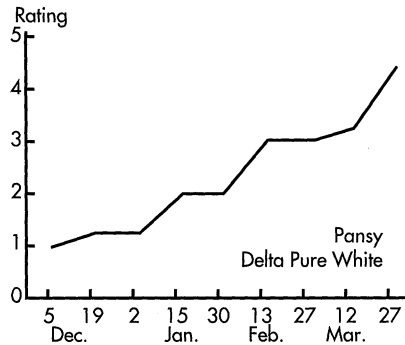
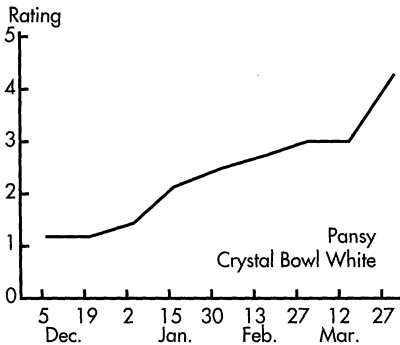
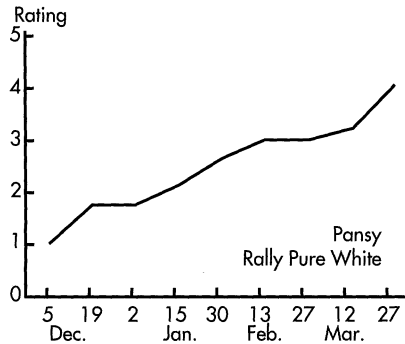
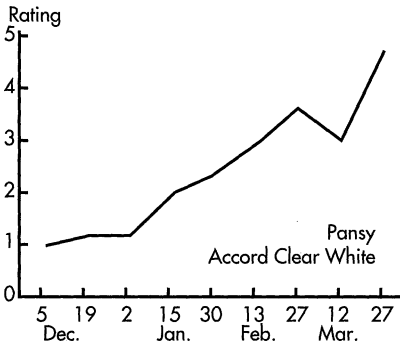
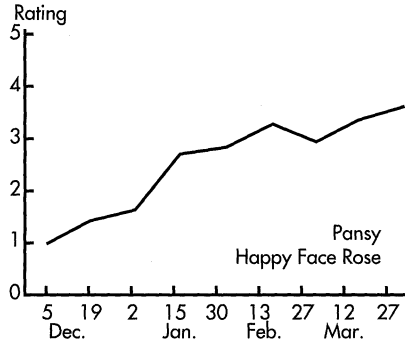
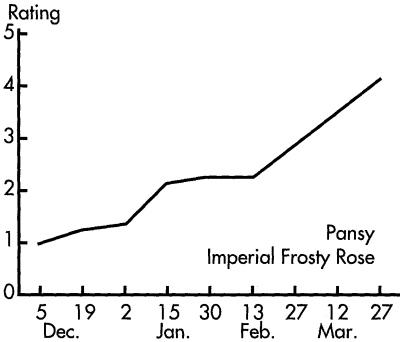
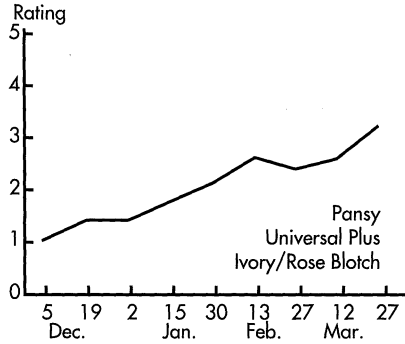
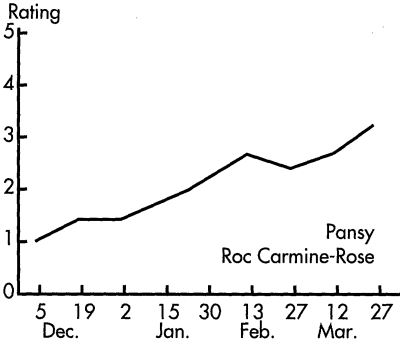


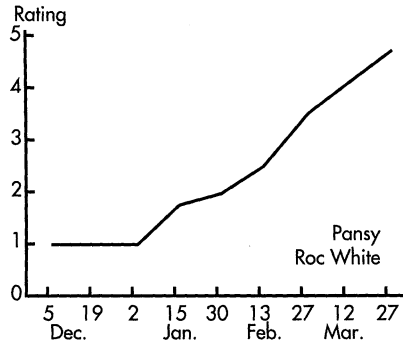
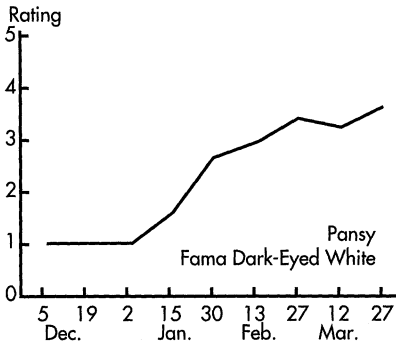
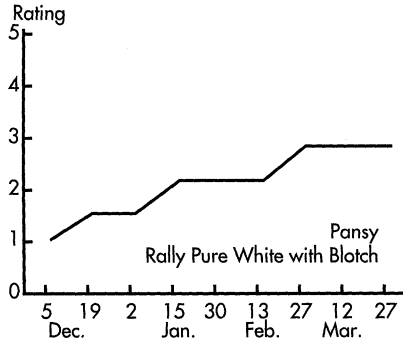
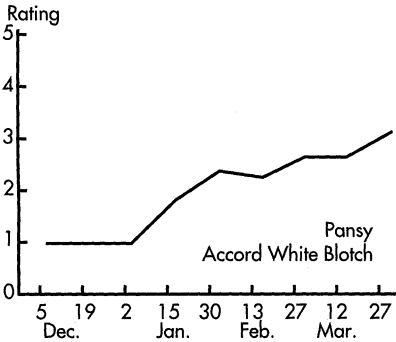
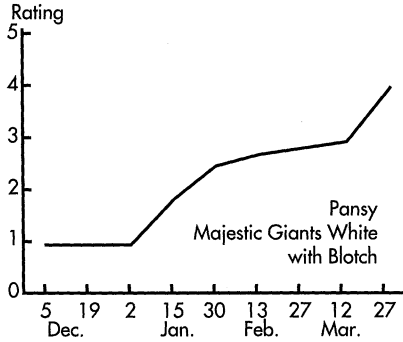
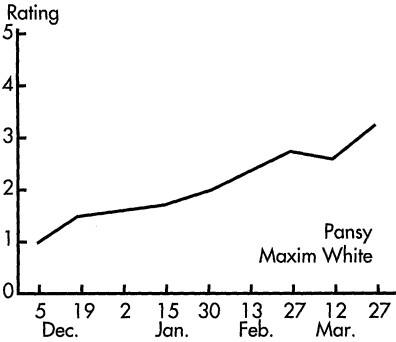
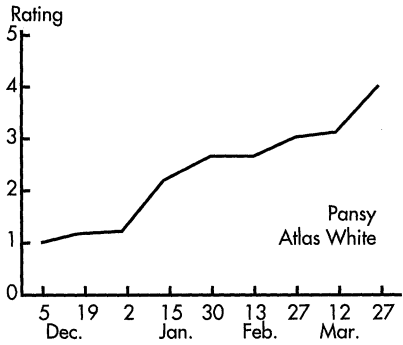
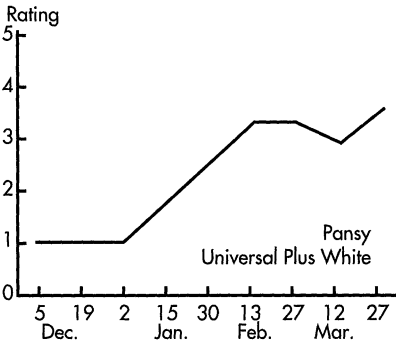


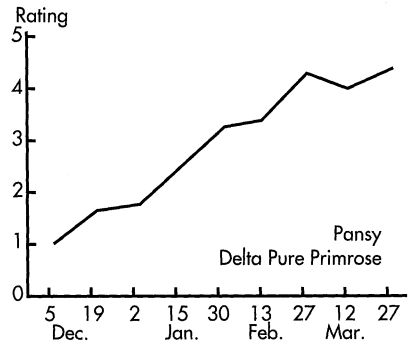
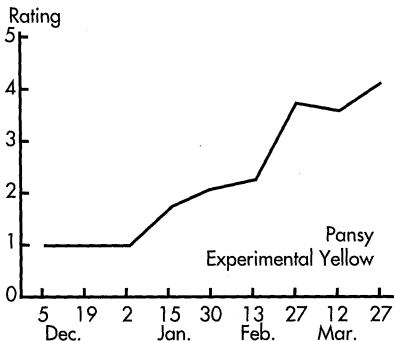
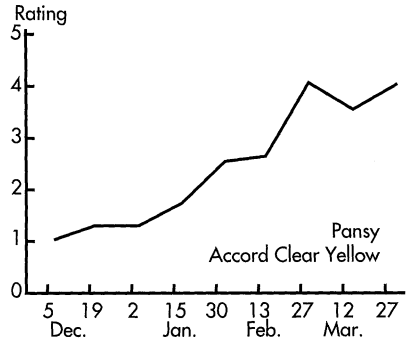
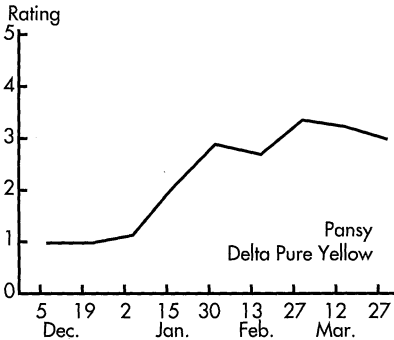
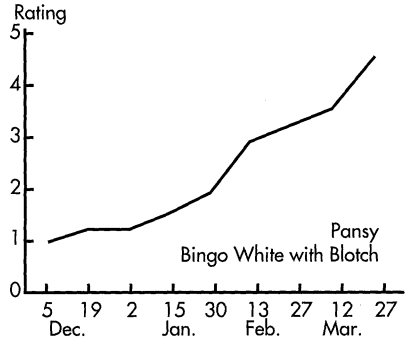
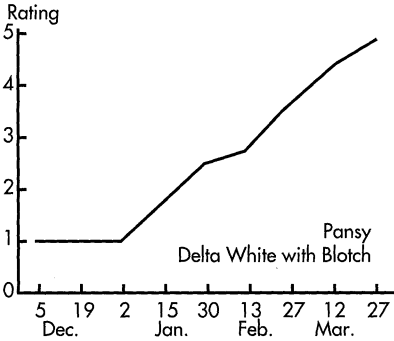
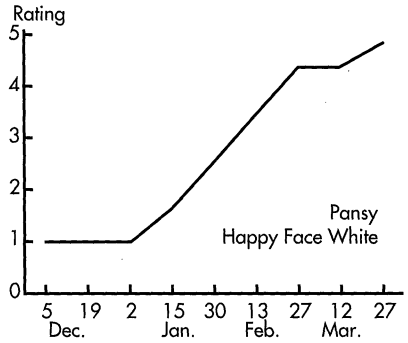
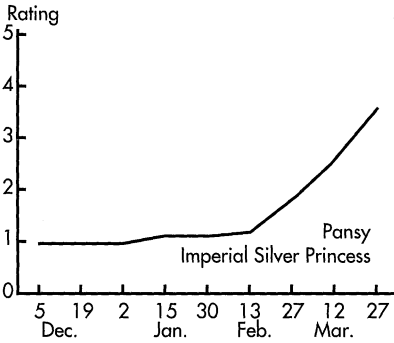


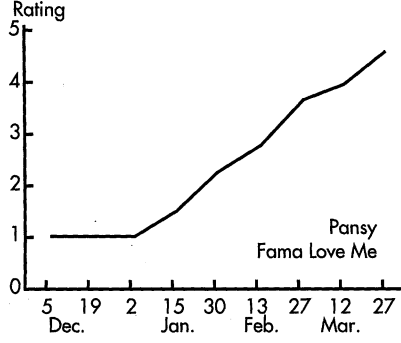
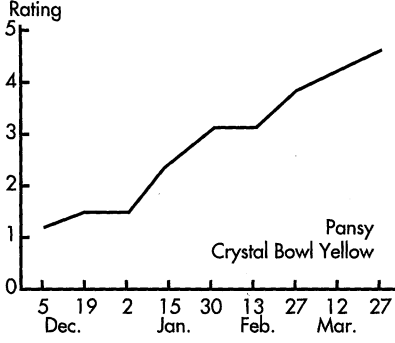
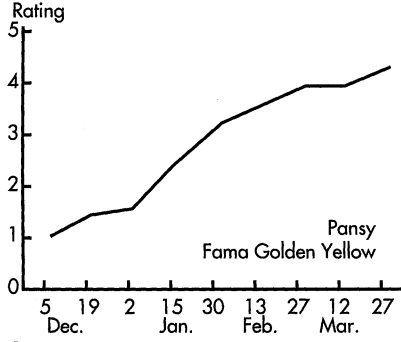
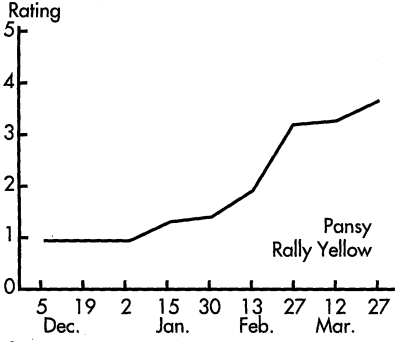
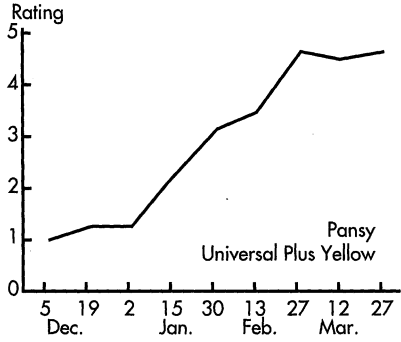
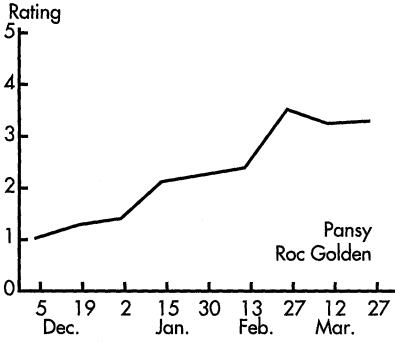
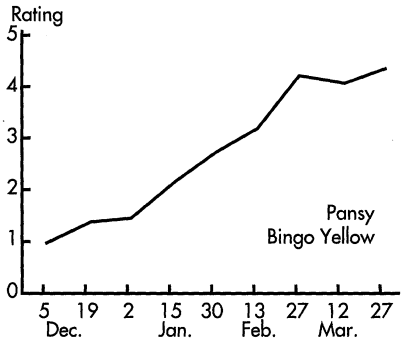
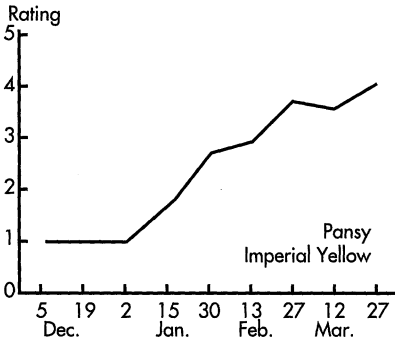


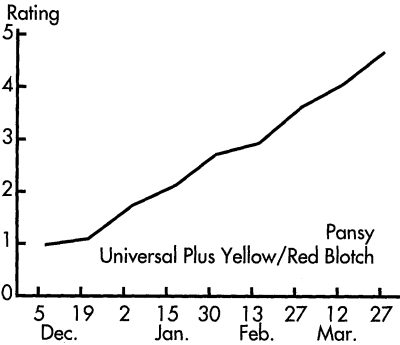
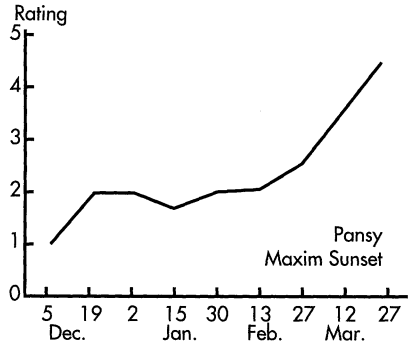
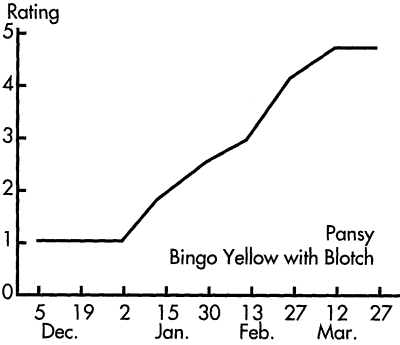
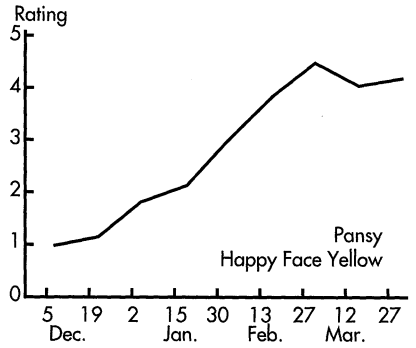
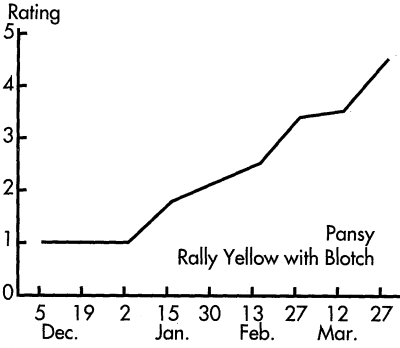


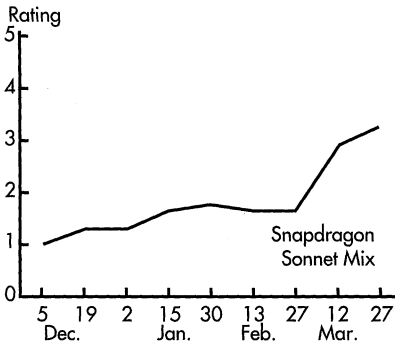
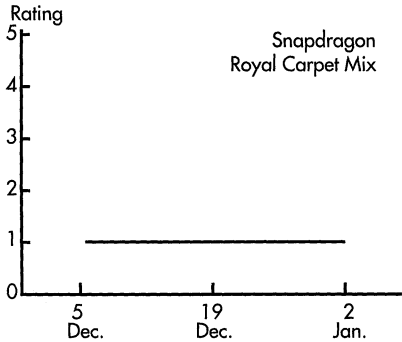
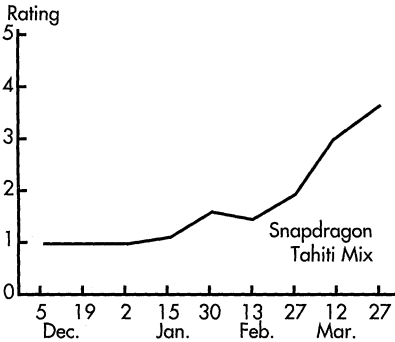
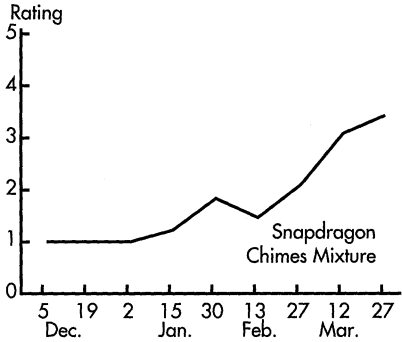
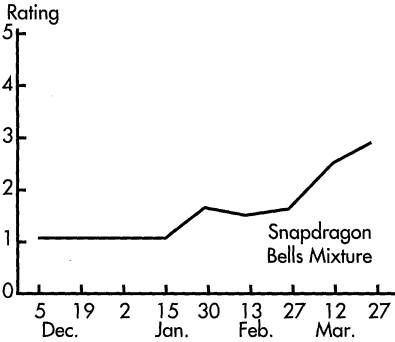
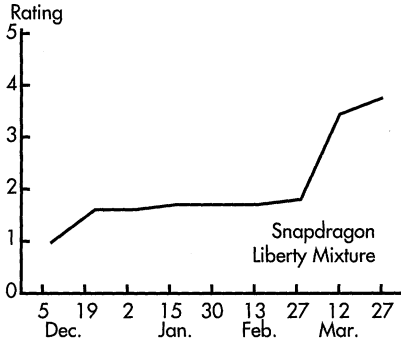
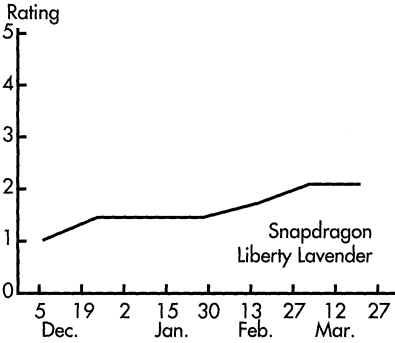


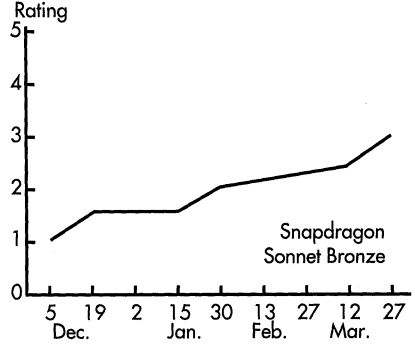
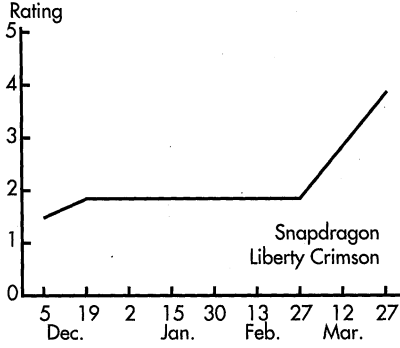
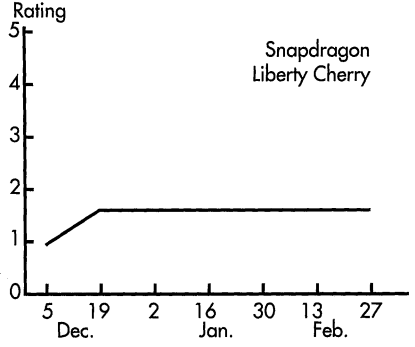
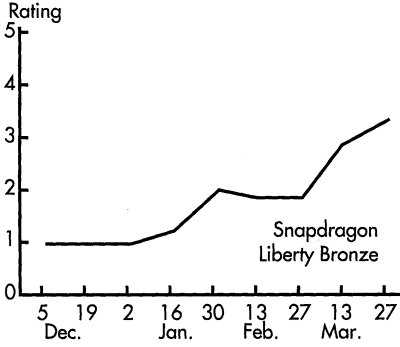
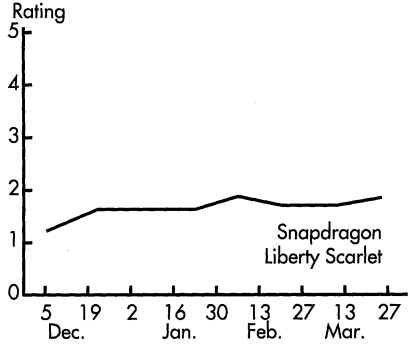
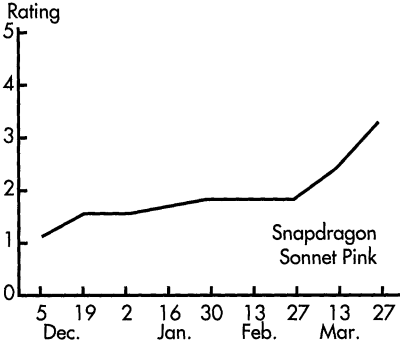
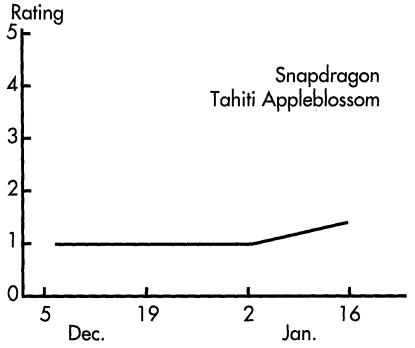
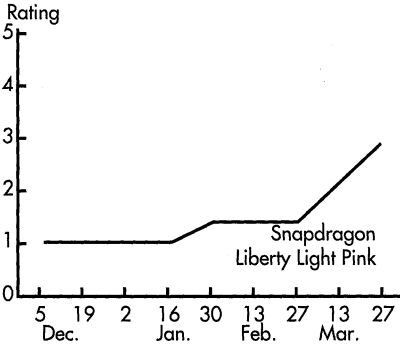


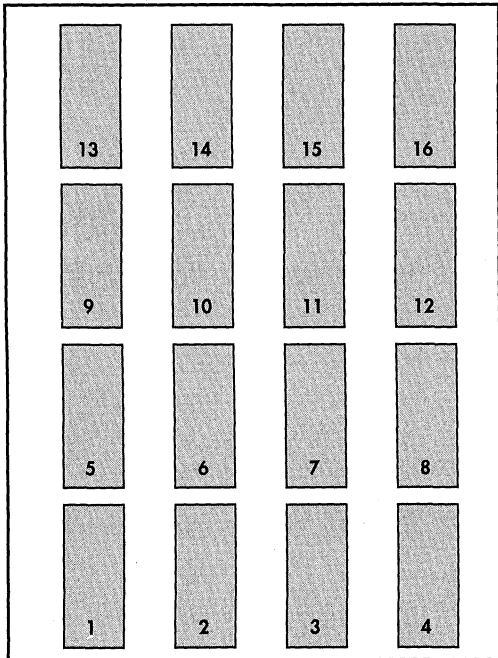
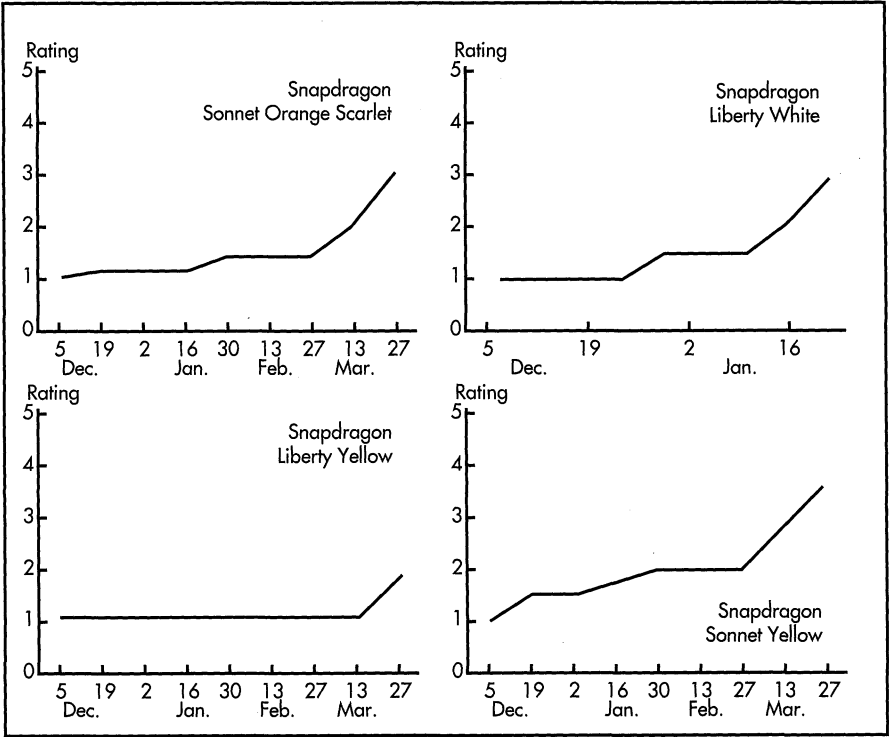




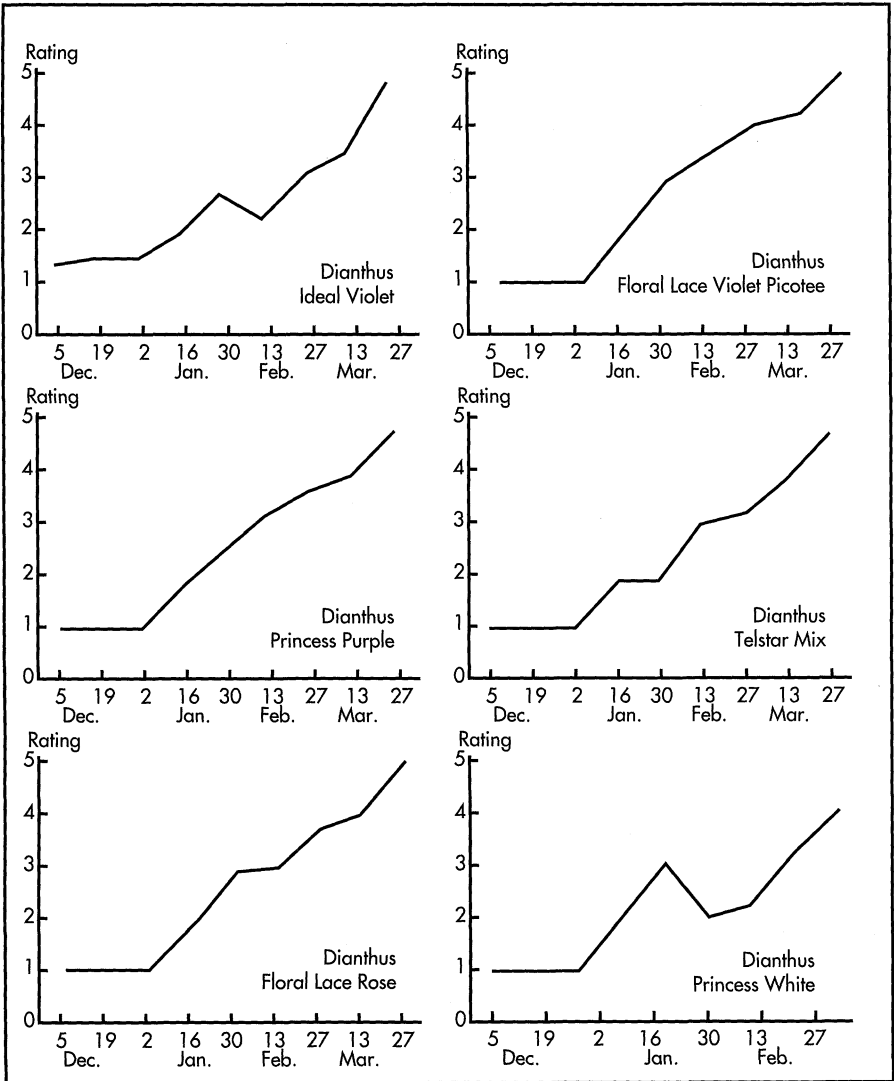


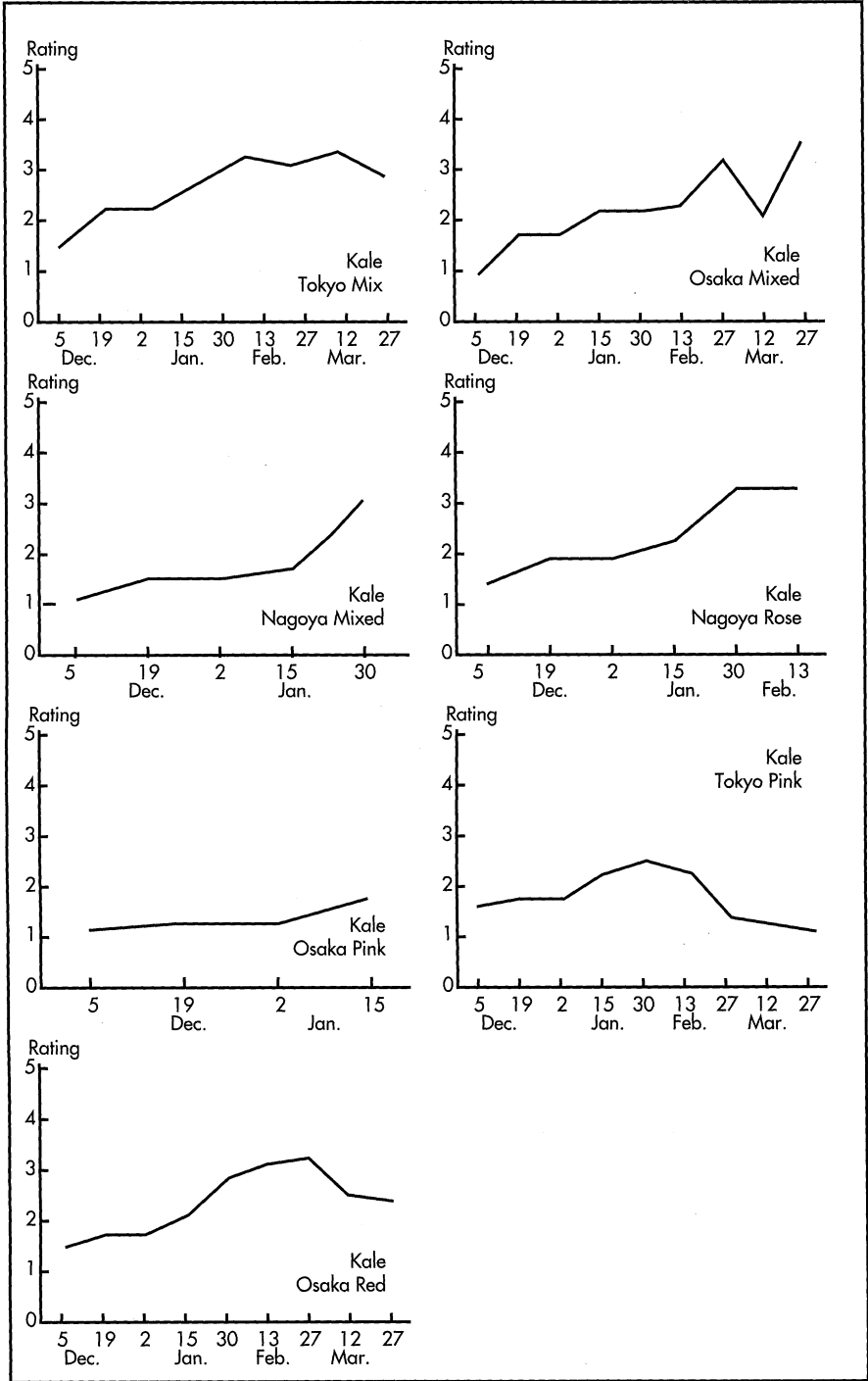






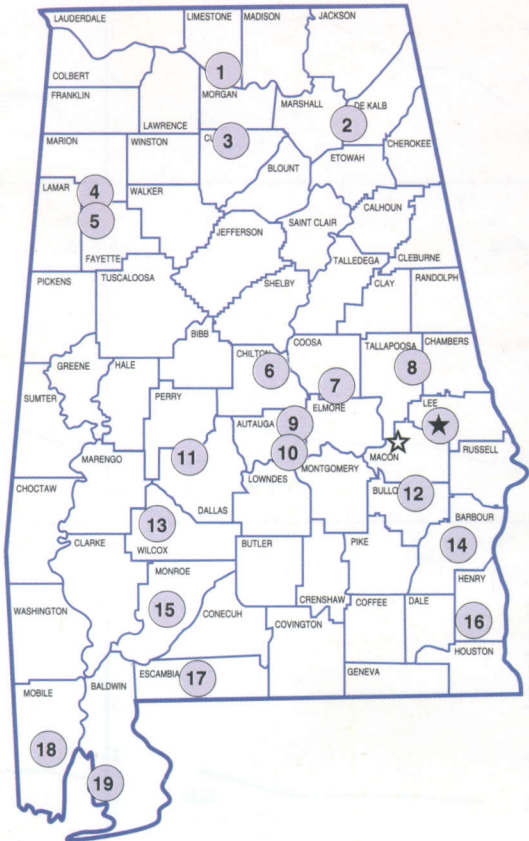
Plot plan for Annual Bedding Plant Evaluation at E.V. Smith Research Center





Alabama's Agricultural Experiment Station System AUBURN UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the state has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

- ★ Main Agricultural Experiment Station, Auburn.
- ☆ E. V. Smith Research Center, Shorter.

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Tennessee Valley Substation, Belle Mina. 2. Sand Mountain Substation, Crossville. 3. North Alabama Horticulture Substation, Cullman. 4. Upper Coastal Plain Substation, Winfield. 5. Forestry Unit, Fayette County. 6. Chilton Area Horticulture Substation, Clanton. 7. Forestry Unit, Coosa County. 8. Piedmont Substation, Camp Hill. 9. Forestry Unit, Autauga County. 10. Prattville Experiment Field, Prattville. | <ol style="list-style-type: none"> 11. Black Belt Substation, Marion Junction. 12. The Turnipseed-Ikenberry Place, Union Springs. 13. Lower Coastal Plain Substation, Camden. 14. Forestry Unit, Barbour County. 15. Monroeville Experiment Field, Monroeville. 16. Wiregrass Substation, Headland. 17. Brewton Experiment Field, Brewton. 18. Ornamental Horticulture Substation, Spring Hill. 19. Gulf Coast Substation, Fairhope. |
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