

Colorado State University
2010-2011 Cool Season
Trials Performance Report



Annual Flower Trial Garden
1401 Remington Street
NE Corner of College Avenue and Lake Street
Colorado State University
Department of Horticulture and Landscape Architecture
Ft. Collins, CO. 80523
www.flowertrials.colostate.edu

Table of Contents

Introduction.....2

Cultural Data

 Planting Date.....2

 Watering.....2

Weather Data.....3

Data Collection Methods (Planting through 5/6)4

Conclusion.....4

Bloom Data (Planting through 5/6)5

Overall, Habit and Dieback Ratings.....8

For further information, or if you would like to help support the project, you are invited to contact:

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Introduction

This is the fourth year that Colorado State University conducted a Winter Pansy Trial in ground beds. It marks the eleventh year that the Gardens are located at 1401 Remington Street, adjacent to the Center for the Arts at Colorado State University. The overall goal of this project is to determine which varieties of pansies and violas are best suited for marketing and growing in the Rocky Mountain region. Data was initially recorded in November 2010, then approximately every two weeks from November-December & February-March. Irrigation was also monitored throughout this time period to record how much water the plants were given. This year there was no formal evaluation day due to the early termination of the trials on Wednesday, March 9th as the result of an employee error that destroyed virtually all the plants. Companies were either refunded for their losses or offered credit toward the 2011-2012 Pansy trials. Extra plants that were overwintered outside the greenhouses in flats were used to replant as many as possible on March 15th. The extra plants had some variability in quality (winter dieback) due to some being located on the outer edge during the winter months and do not represent how the plants would have performed in a normal trial. Survivability data was recorded on these plants on March 15th and on a later date in May. Photos were also taken of the replacement plants to document their growth.

The pansy trials at Colorado State University have no specific operation dollars from state funds. Financial assistance, plant material, and other miscellaneous materials for the trials were acquired from sponsoring seed companies and several Colorado Greenhouse companies. These sources include: various state horticulture and industry associations, foundations, nurseries and greenhouse growers from across the nation. Special thanks to Welby Gardens Inc. for their generous support in growing and donating a flat of all the seed pansy and viola varieties. Some operational and staff dollars have come from the Colorado State University Agriculture Experiment Station, Extension, and the Department of Horticulture and Landscape Architecture. Seed companies that participated in this trial were: Benary Seed, Goldsmith Seed, Pan America Seed, Syngenta, Floranova, and American Takii.

Cultural Data for the 2010-2011 Winter Pansy Trial Gardens

Planting Dates

On November 5, 2010 all pansies and violas were planted. All plants arrived from Welby Gardens as rooted seedlings in cell packs that were 2.25" deep. They were then transplanted into planting beds located in the Annual Flower Trial Garden at 1401 Remington Street. There were 4 plants per cell pack that were planted together, and 15 cell packs were planted in each row in the beds.

Watering

All watering was monitored. Watering was done when natural precipitation was low and when the growing media was not saturated. The winter of 2010-11 was very dry with very little snow cover. Watering was done weekly through November and December and then again in February and March once the ground had thawed enough to retain water. On average, the beds received ½" water over a 4 hour period per watering. Granular "Hardy Start" fertilizer (5-6-6), from Hardy Boy, was dispersed

around each trial row prior to planting at a rate of 137g/row. No pesticides were applied throughout the duration of this trial.

Dates of Severe Weather

Winter temperatures were fairly typical of Colorado conditions, with the exception of being very dry. This year we had a very mild fall with many of the annuals persisting into early November. The first freeze after the trials were planted was on November 5, when it got down to 31°F. Extreme cold temperatures occurred on January 2, & 10-12 with lows plunging to -3°F, 0°F, -6°F, and -4°F respectively. February also had extreme cold temperatures with February 1-3 & 9 at -8°F, -13°F, -6°F, and -9°F recorded respectively.

Weather Data November – May

November 2010

Ave Max T = 49°F
Ave Min T = 26 °F
Ave MeanT = 38 °F
Max Max T = 74 °F
Min Min T = 10 °F
Total Prec= 0.70 in.
Max Prec= 0.34 in.

December 2010

Ave Max T = 47 °F
Ave Min T = 22 °F
Ave MeanT = 34 °F
Max Max T = 66 °F
Min Min T = 5 °F
Total Prec= .22 in.
Max Prec= 0.17 in.

January 2011

Ave Max T = 43 °F
Ave Min T = 17 °F
Ave MeanT = 30 °F
Max Max T = 64 °F
Min Min T = -6 °F
Total Prec= 0.29 in.
Max Prec= 0.21 in.

February 2011

Ave Max T = 44 °F
Ave Min T = 15 °F
Ave MeanT = 29 °F
Max Max T = 67 °F
Min Min T = -13 °F
Total Prec= 0.66 in.

March 2011

Ave Max T = 58 °F
Ave Min T = 31 °F
Ave MeanT = 44 °F
Max Max T = 73°F
Min Min T = 10 °F
Total Prec= .29 in.
Max Prec= 0.12 in.

April 2011

Ave Max T = 62 °F
Ave Min T = 36 °F
Ave MeanT = 49 °F
Max Max T = 82 °F
Min Min T = 25 °F
Total Prec= 2.05 in.
Max Prec= .90 in.

May 2011

Ave Max T = 65 °F
Ave Min T = 41 °F
Ave MeanT = 53 °F
Max Max T = 85°F
Min Min T = 28 °F
Total Prec= 4.50 in.
Max Prec= 1.18 in.

Data Collection Methods from Planting through Evaluation Day

Jaclyn Salts (undergraduate Environmental Horticulture student) collected data throughout the 2010-11 pansy trial. The data categories collected included: overall rating (1-5), habit rating (1-5) beginning 11/5/10, as well as dieback ratings and bloom percentage. David Staats (research assistant) took the dieback ratings on 3/15 for the replacement pansies overwintered in flats outside the greenhouse. Jaclyn Salts took the final data on 5/6.

The overall rating scale was 1=poor condition (dying), 2=weak condition (struggling with some dieback), 3=average (few to no flowers with healthy foliage), 4=good condition (progressing flowers with healthy foliage growth), and 5=great condition (many flowers with healthy uniform foliage growth).

The habit rating scale was 1=non-uniform (many inconsistent plants), 2=little uniformity (few inconsistent plants), 3=average (uniform with no growth improvement), 4=good uniformity (uniform with little growth improvement), and 5=great uniformity (uniform with major growth improvement).

The dieback rating for all dates except 3/15 was 0=no dieback all green, 1= little dieback, 2= some dieback, 3= visible dieback, 4= significant dieback, 5= dead (all brown).

The dieback rating for the 3/15 recording from David Staats was rated as 0=little-no dieback all green, 2=visible dieback, 3=visible dieback with some dead

Bloom percentage was rated as first bloom=one bloom is visible on any plant in the variety, 50% bloom=variety appears to average 4 blooms/cell pack, and 100% bloom=variety has full flower coverage.

Conclusion

Based on data collected prior to the physical error on March 9th, it was a difficult year for pansies due to the lack of snow cover, wind, and cold temperatures. As a result, the spring display of pansies consisted of smaller plants with fewer blooms and more dieback than in previous years. Data and photos collected up until March 9th are a reliable representation of plant performance. Although some replacement plants were planted after the mid March error, the extra plants had variability quality (winter dieback). Variability was due to some being located on the outer edge during the winter months and do not represent how the plants would have performed in a normal trial.