



GrowerFacts Extra
Dianthus Coronet™

Additional Culture Research
from

PanAmerican Seed®

Dianthus Coronet

Effects of Light and Temp on Crop Time, published 2021

PanAmericanSeed.

OBJECTIVE

Determine the effects of light and temperature on crop time of Dianthus Coronet using four different treatments.

Treatment (started right after transplant)		Actual Average Daily Temperature	DLI ($\text{mol}\cdot\text{m}^{-2}\cdot\text{d}^{-1}$)	Daylength
T1	Moderate temperature with natural light	61°F (16°C)	9.8	Natural day from 9h20min to 12h20min
T2	Warm temperature with natural light	67°F (19°C)	9.9	Natural day from 9h20min to 12h20min
T3	Warm temperature with natural light + LED	67°F (19°C)	12.8	Natural day from 9h20min to 12h20min
T4	Warm temperature with natural light + HID Daylength extension to 14 hours	68°F (20°C)	9.9	14 hours

Dianthus Coronet

Effects of Light and Temp on Crop Time, published 2021

PanAmericanSeed.

MATERIALS AND METHODS

- Sow date: week 50
- Plug tray size: 288 cells
- Germination conditions: 65°F/18°C, light, covered with vermiculite
- Plug daylength: Natural SD from 9h13min to 9h19min
- Environmental conditions:
 - Plug stage: ADT = 69.9°F/21.1°C, DLI = 7.4 mol.m⁻².d⁻¹
- Plug PGR: Paclobutrazol (Bonzi) 5ppm spray 2 weeks after sowing
- Transplant date: week 2
- Container sizes: 306 pack, Quarts, and 10" HB with 5 and 7 ppp



Dianthus Coronet

Effects of Light and Temp on Crop Time

PanAmericanSeed.

ANNUALS

TREATMENT 1

Treatment (started right after TP)		Actual ADT	DLI (mol.m ⁻² .d ⁻¹)	Daylength	Crop time from TP to finish
T1	Moderate temperature with natural light	61°F/ 16°C	9.8	Natural day from 9h20min to 12h20min	13 weeks



Image taken 9 weeks after transplant.
Left shows 2 x 10 ppm Bonzi spray;
Right shows control.

Dianthus Coronet

Effects of Light and Temp on Crop Time

PanAmericanSeed.

ANNUALS

TREATMENT 2

Treatment (started right after TP)		Actual ADT	DLI (mol.m ⁻² .d ⁻¹)	Daylength	Crop time from TP to finish
T2	Warm temperature with natural light	67°F/ 19°C	9.9	Natural day from 9h20min to 12h20min	10 weeks

RESULTS

Temperature increase from 60°F to 67°F hastened flowering time by 3 weeks under natural daylength.



Image taken 9 weeks after transplant.
Left shows 2 x 10 ppm Bonzi spray;
Right shows control.

Dianthus Coronet

Effects of Light and Temp on Crop Time

PanAmericanSeed.

ANNUALS

TREATMENT 3

Treatment (started right after TP)		Actual ADT	DLI (mol.m ⁻² .d ⁻¹)	Daylength	Crop time from TP to finish
T3	Warm temperature with natural light + LED	67°F/ 19°C	12.8	Natural day from 9h20min to 12h20min	10 weeks

RESULTS

Under similar temperature and same daylength (T2 and T3), the higher light conditions of Treatment 3 promoted more branches with fuller plants but did not affect flower timing.



Image taken 9 weeks after transplant.
Left shows 2 x 10 ppm Bonzi spray;
Right shows control.

Dianthus Coronet

Effects of Light and Temp on Crop Time

PanAmericanSeed.

ANNUALS

TREATMENT 4

Treatment (started right after TP)	Actual ADT	DLI (mol.m ⁻² .d ⁻¹)	Daylength	Crop time from TP to finish
T4 Warm temperature with natural light + HID DL extension to 14 hours	68°F/ 20°C	9.9	14 hours	9 weeks

RESULTS

Under similar temperatures (T2-T4), supplemental long day lighting with daylength extension to 14 hours (T4) promoted flowering by 1 week, likely influenced by increased plant temperature under HPS lamps.



Image taken 9 weeks after transplant.
Left shows 2 x 10 ppm Bonzi spray;
Right shows control.

Dianthus Coronet

Effect of Light and Temp on Crop Time, published 2021

PanAmericanSeed.

CONCLUSION or RECOMMENDATION

- Dianthus Coronet timing is influenced by temperature. An increase in ADT from 60°F to 67°F decreased flowering time by 3 weeks under natural SD.
- When $DLI \geq 10 \text{ mol}\cdot\text{m}^{-2}\cdot\text{d}^{-1}$, higher light intensity under natural daylength promoted branching but did not affect flower timing.
- Under similar warmer temperature conditions, daylength extension to 14 hours promoted flowering by 1 week.



Dianthus Coronet

Plants Per Pot for 10" Hanging Basket, published 2021

PanAmericanSeed.

OBJECTIVE

- To find out proper number of plugs per 10" hanging basket under different environmental conditions.

MATERIALS AND METHODS

- Plugs used in previous light and temp experiment were used to compare 5 plants per pot vs. 7 plants per pot in 10" hanging basket.
- All plants were treated with 2 x 10 ppm paclobutrazol spray.



Dianthus Coronet

Plants Per Pot for 10" Hanging Basket

PanAmericanSeed.

ANNUALS



5 ppp

7 ppp

Treatment 1

Moderate temperature with natural light.
Saleable 13 weeks after transplant.



5 ppp

7 ppp

Treatment 2

Warm temperature with natural light.
Saleable 11 weeks after transplant, except for two bicolor varieties.

Dianthus Coronet

Plants Per Pot for 10" Hanging Basket

PanAmericanSeed.

ANNUALS



5 ppp

7 ppp

Treatment 3

Warm temperature with natural light + LED.
Saleable 10 weeks after transplant.



5 ppp

7 ppp

Treatment 4

Warm temperature with natural light + HID DL extension to 14 hours.
Saleable 9 weeks after transplant.

Dianthus Coronet

Plants Per Pot for 10" Hanging Basket

PanAmericanSeed.

CONCLUSION or RECOMMENDATION

- Five plugs of Dianthus Coronet fill out a 10" hanging basket well. There was little difference in appearance between 5 ppp and 7 ppp under different environmental conditions.
- The two bicolor varieties, Strawberry and White Purple Eye, are more compact and can use half the rate of PGR, or no PGR.

