

# Evaluation of Dwarf Ornamental Chile Pepper Cultivars for Commercial Greenhouse Production

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## Introduction

- Chile peppers have been used as ornamental plants and given as Christmas gifts since the 15<sup>th</sup> century (Armitage and Hamilton, 1987).
- Today the typical Christmas plant is a poinsettia (Hammer, 1980).
- Dwarf and Semi-dwarf Ornamental chile pepper cultivars have a shorter and more compact growth habit with a dichotomous growth pattern and polychotomous branching.
- Ornamental pepper plants are ideal as container plants for the greenhouse and landscape industry.
- Many of the commercial ornamental pepper cultivars currently available need to be pinched or sprayed with a uniconazole foliar application to achieve a dwarf or semi-dwarf plant habit (Starman, 1993).



NuMex Twilight, a normal size ornamental chile pepper plant can reach up to 66 cm high.



NuMex April Fools' Day and NuMex Cinco de Mayo are dwarf ornamental chile pepper plants and only reach 16 cm high.

## Objective

To compare 12 currently available commercial ornamental pepper cultivars considered to be compact and introduce 13 new ornamental pepper cultivars that do not require pinching or a uniconazole foliar spray to develop a dwarf or semi-dwarf plant habit.

## Materials and Methods

- Seeds were sown in 12-celled plastic trays.
- Trays were filled with a commercial peat moss-vermiculite soil mixture and placed on propagation pads.
- When seedlings reached the two true-leaf stage they were transplanted to 4-inch and 6-inch plastic azalea containers with a professional growing medium.
- Once the fruits began to change from the immature color to the mature color, height and width measurements, immature and mature color data and pod shape descriptions were.
- Color was recorded by comparing the color tabs in the Munsell Book of Color.



12-pack containers with young seedlings and dwarf, ornamental chile pepper plants in 4-inch pots.

## Results and Conclusions

- For each cultivar, mean plant height and width are shown for both 4-inch and 6-inch containers in Table 1.
- Of the new dwarf ornamental chile pepper cultivars, nine did not exceed 6 inches in height in either container size, while the four new semi-dwarf ornamental chile pepper cultivars did not reach greater than 10 inches each container size.
- When planted in the 4-inch containers, each of the heights of cultivars NuMex Thanksgiving, NuMex Summer Solstice, NuMex St. Patrick's Day, NuMex Halloween, NuMex Veterans Day, NuMex Valentine's Day, NuMex Earth Day, NuMex Christmas and NuMex Memorial Day were statistically significantly shorter than all other cultivars except Favorit Yellow, Conga and Blast.
- All heights for the dwarf NuMex ornamental pepper cultivars were significantly different from the semi-dwarf NuMex ornamental pepper cultivars and the semi-dwarf commercial cultivars within the 4 and 6-inch container sizes.



Table 1. Plant heights and widths of 25 ornamental chile pepper cultivars grown in 4-inch and 6-inch (10.2 and 15.2 cm) containers in 2015. Measurements were taken ≈128 d after planting.

Cultivar	Plant height (cm) <sup>1</sup>		Plant width (cm)	
	4-inch Container	6-inch Container	4-inch Container	6-inch Container
Blanca	15.9 cd <sup>a</sup>	15.0 de	19.4 b	20.0 c-f
Blast	11.6 f-h	13.8 ef	13.6 d-g	18.5 e-g
Calico	15.5 cd	18.3 bc	20.6 ab	25.9 a
Conga	12.3 e-g	11.0 g	11.0 f-h	16.9 f-j
Explosive Ember	17.1 bc	22.5 a	20.4 ab	23.6 ab
Favorit Yellow	8.6 hi	15.6 de	9.8 gh	20.7 b-e
Masquerade	21.5 a	13.8 ef	23.9 a	18.5 e-g
Medusa	13.8 d-f	12.2 fg	14.6 c-f	12.8 kl
NuMex April Fool's Day	19.2 ab	17.5 b-d	24.4 a	18.3 e-h
NuMex Chinese New Year	17.2 bc	13.8 ef	18.1 bc	19.6 d-f
NuMex Christmas	10.7 f-i	9.8 gh	12.5 e-h	15.1 h-l
NuMex Cinco de Mayo	16.9 b-d	16.0 c-e	18.8 bc	22.4 b-d
NuMex Earth Day	10.3 g-i	10.0 gh	11.7 f-h	12.2 l
NuMex Easter	15.1 c-e	14.4 ef	16.8 b-e	18.1 e-i
NuMex Halloween	10.3 g-i	17.1 b-d	10.5 f-h	20.2 b-e
NuMex Memorial Day	10.4 g-i	9.7 gh	13.2 d-h	14.3 j-l
NuMex St. Patrick's Day	10.0 g-i	15.4 de	10.7 f-h	20.0 c-f
NuMex Summer Solstice	8.4 hi	15.2 de	10.1 gh	15.8 g-k
NuMex Thanksgiving	7.6 i	7.9 h	9.0 h	13.7 j-l
NuMex Valentine's Day	10.4 ghi	10.0 gh	11.6 f-h	18.5 e-g
NuMex Veterans Day	10.8 fghi	7.9 h	10.7 f-h	14.9 i-l
Purple Flash	15.1 cde	18.9 b	17.1 b-d	23.4 ab
Red Missile	15.5 cd	15.3 de	19.5 b	18.1 e-i
Sangria	15.7 cd	17.5 b-d	20.6 ab	23.0 a-c
Treasures Red	17.2 bc	11.0 g	18.2 bc	18.8 e-g
	P ≤ 0.0001	P ≤ 0.0001	P ≤ 0.0001	P ≤ 0.0001

<sup>1</sup>1 cm = 0.3937 inch.

<sup>a</sup>Means followed by the same letter within a column are not significantly different at α = 0.001, separated by Tukey's honest significant difference test.

## Conclusions

- All of the 12 currently available commercial ornamental chile pepper cultivars and the 13 new NuMex commercially available ornamental chile pepper cultivars were classified as a dwarf or semi-dwarf classification based on industry standards.
- None of the cultivars require pinching or a uniconazole, foliar spray to accomplish the desired, dwarf and compact plant habit when grown for greenhouse container production.

## Literature Cited

- Armitage, A. and B. Hamilton. 1987. Ornamental peppers: A hot new crop. *Greenhouse Grower* 5:92-95.
- Starman, T.W. 1993. Ornamental pepper growth and fruiting response to uniconazole depends on application time. *HortScience* 28:917-919.