

Graziosa Fertilization

Graziosa Geraniums

- *Optimizing N Rates*

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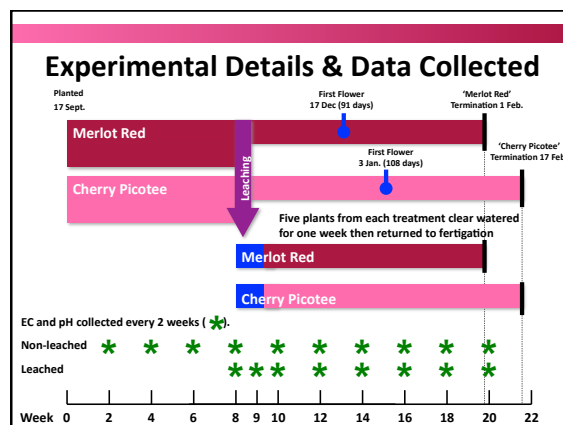
RED FOX
TRUE GROWER'S SERIES

'Cherry Picotee'



'Merlot Red'





Experimental Details: Data Collected

- Visible bud to bloom


???


- Date of first, second, and third flowering inflorescence
- Bud number at each flowering stage

Experimental Details: Data Collected

- Height & Diameter



Height = average of width at widest point and perpendicular width



Diameter = average of width at widest point and perpendicular width

- Dry Weight
- Critical Tissue Concentration

Effects of N Rate Prebloom

'Merlot Red'



50 ppm



200 ppm



400 ppm

- Lower leaf yellowing (A) and overall yellowing visible on 50 ppm.

A



Effects of N Rate Prebloom

'Cherry Picotee'



50 ppm



200 ppm



400 ppm

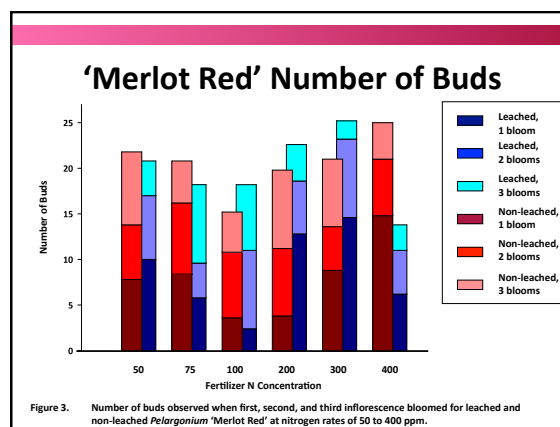
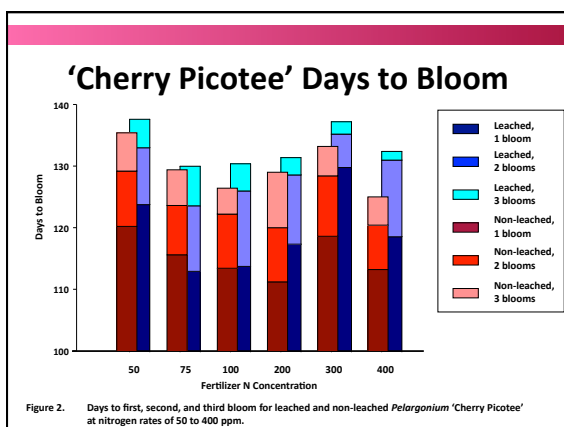
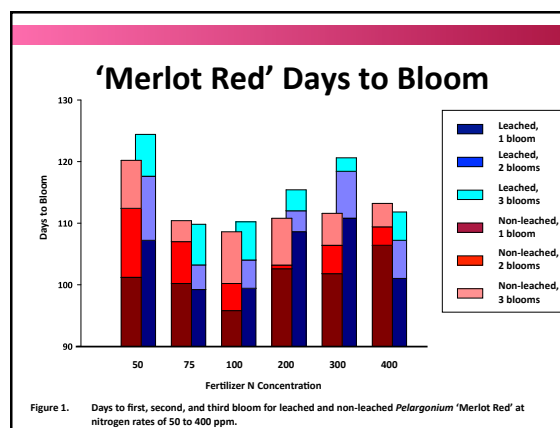
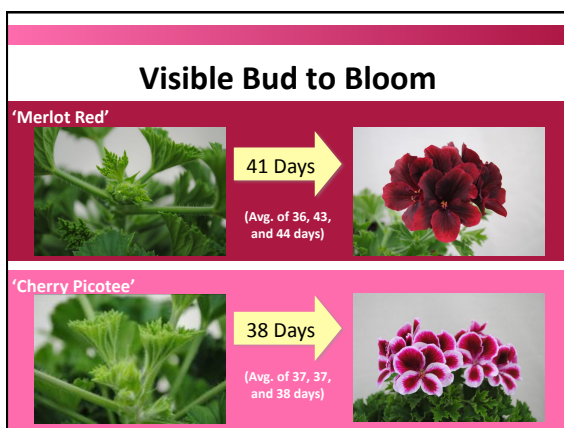
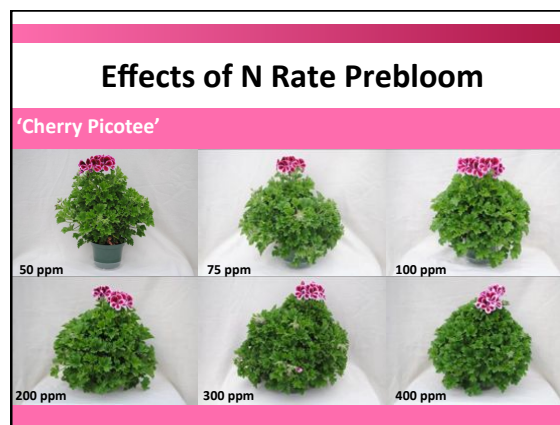
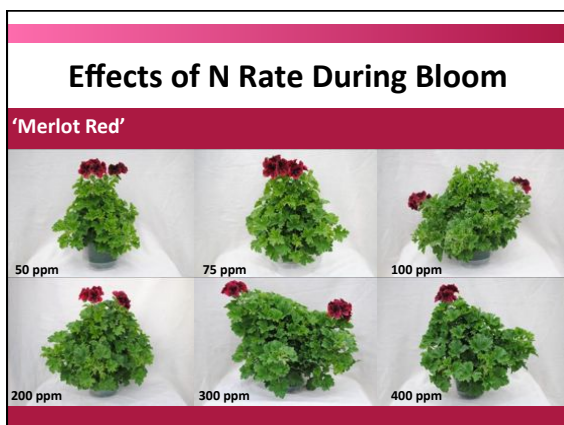
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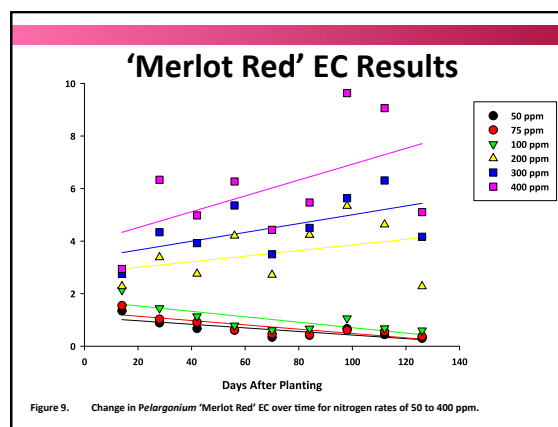
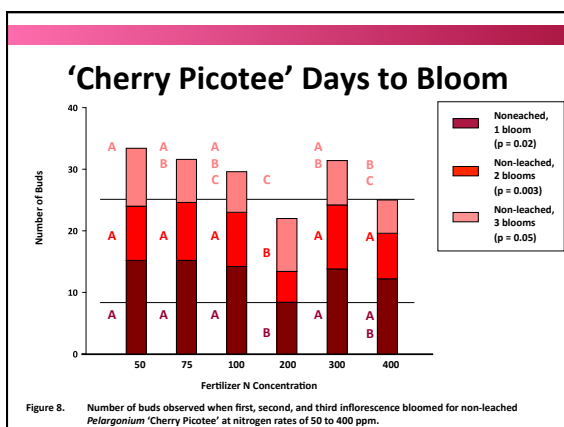
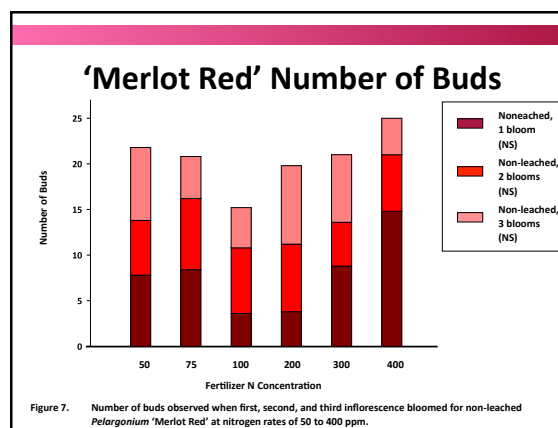
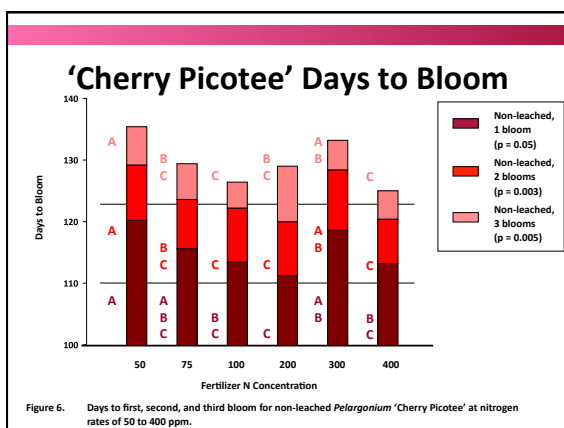
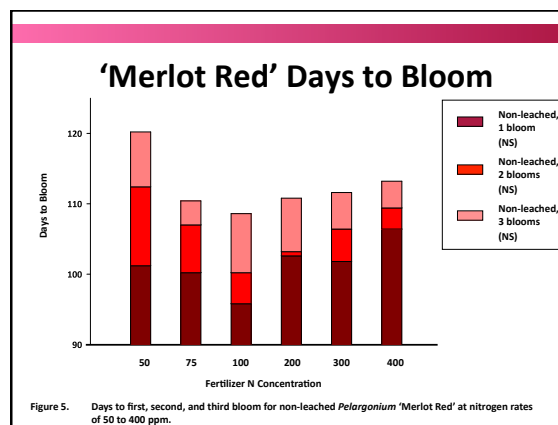
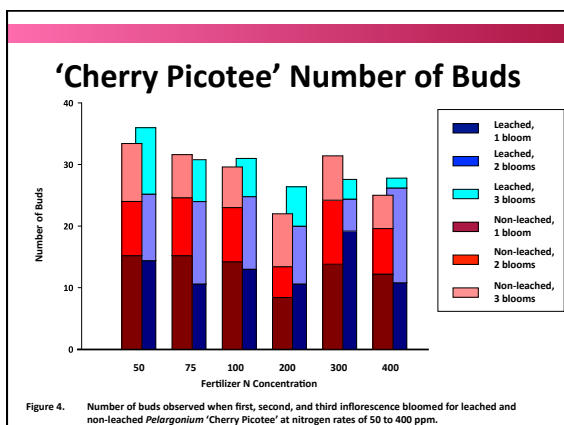
B



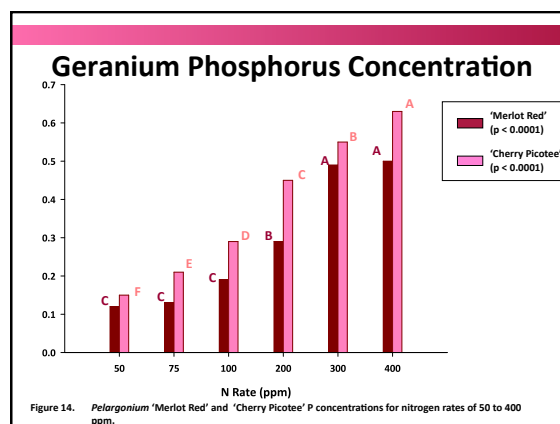
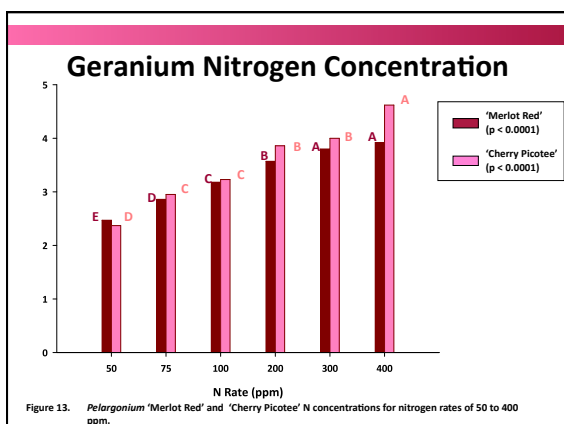
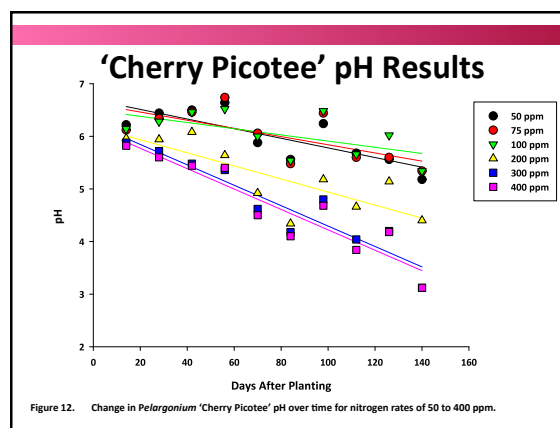
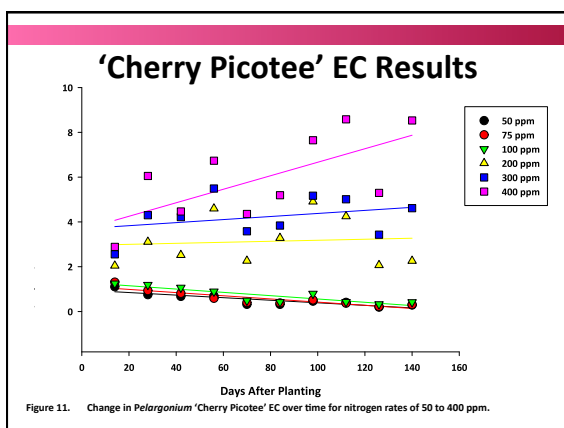
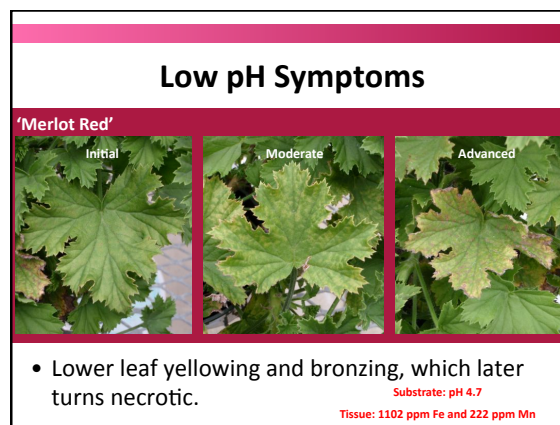
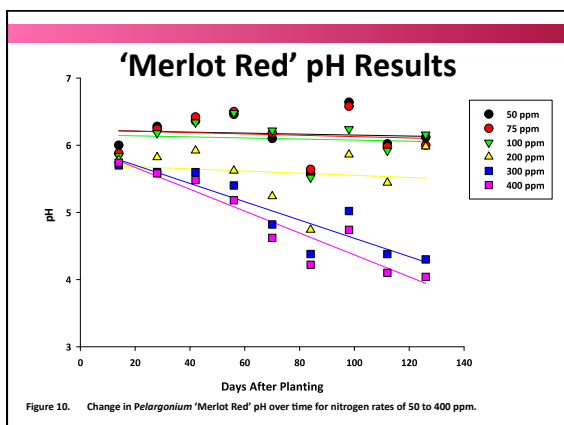
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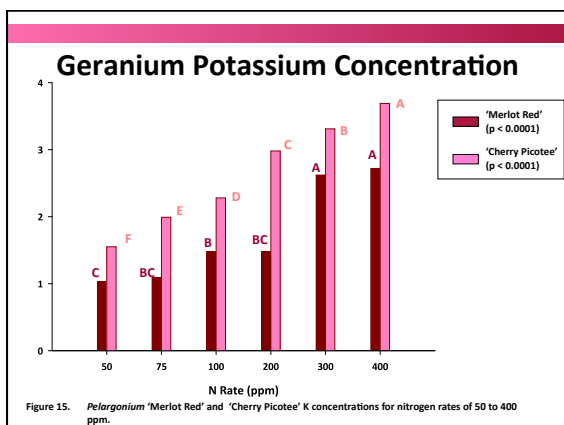
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'Merlot Red' Tissue Concentrations

Trt	Macroelements (%)					Microelements (mg L ⁻¹)					
	N	P	K	Ca	Mg	B	Cu	Fe	Mn	Mo	Zn
50 ppm N	2.47	0.12	1.03	0.79	0.19	25.23	5.62	43.83	33.27	0.73	20.67
75 ppm N	2.86	0.13	1.09	0.58	0.17	20.73	4.51	40.73	25.93	0.52	19.07
100 ppm N	3.18	0.19	1.48	0.60	0.16	24.90	5.80	50.97	29.23	0.93	27.50
200 ppm N	3.57	0.29	1.48	0.49	0.12	21.30	6.57	65.87	43.23	0.40 ¹	37.90
300 ppm N	3.80	0.49	2.62	0.82	0.19	42.97	10.06	119.67	99.37	— ²	55.33
400 ppm N	3.92	0.5	2.72	0.79	0.18	45.57	9.94	87.27	87.57	— ²	50.43
p-value ³	***	***	***	**	NS	***	***	***	***	NS	**

¹ Only two samples were averaged for the value presented.
² Concentration was below the detectable limit.
³ *, **, or *** indicates statistically significant differences between sample means based on F test at $P \leq 0.05$, $P \leq 0.01$, or $P \leq 0.001$, respectively. NS (not significant) indicates the F test difference between sample means was $P > 0.05$.

'Cherry Picotee' Tissue Concentrations

Trt	Macroelements (%)					Microelements (mg L ⁻¹)					
	N	P	K	Ca	Mg	B	Cu	Fe	Mn	Mo	Zn
50 ppm N	2.37	0.15	1.55	1.24	0.29	27.93	9.15	55.63	89.83	0.76	25.13
75 ppm N	2.95	0.21	1.99	0.96	0.25	35.47	11.83	55.00	70.03	1.19	33.90
100 ppm N	3.23	0.29	2.28	1.03	0.28	41.10	11.83	55.80	69.20	1.55	29.97
200 ppm N	3.86	0.45	2.98	1.00	0.29	44.00	15.57	264.67	91.13	0.07 ¹	52.77
300 ppm N	4.00	0.55	3.31	0.98	0.26	57.47	12.27	151.00	106.53	0.02 ¹	61.37
400 ppm N	4.62	0.63	3.69	1.09	0.3	66.97	11.77	102.27	130.33	0.07 ¹	62.77
p-value ²	***	***	***	NS	NS	***	NS	***	***	NS	***

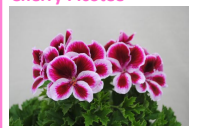
¹ Only one sample used for the value presented.
² *, **, or *** indicates statistically significant differences between sample means based on F test at $P \leq 0.05$, $P \leq 0.01$, or $P \leq 0.001$, respectively. NS (not significant) indicates the F test difference between sample means was $P > 0.05$.

Growing Recommendations

'Merlot Red'



'Cherry Picotee'



Plants should be grown between 150 to 200 ppm N.

Acknowledgments

We would like to acknowledge Dümmer USA for providing the funding, plants, and tissue concentration sample testing for this experiment.



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