

2006 Onion Variety Trial
M. D. Orzolek
Dept. of Horticulture
The Pennsylvania State University

Plot size: Four rows/bed 6.0' long x 6" apart – 48 plants/rep.

Transplanting Date: April 13, 2006

Production system: raised bed with black plastic mulch and 2 rows of drip tape – high flow 0.45 gal./min./100 ft at 12 orifice spacing.

Herbicide Application: Two post-emergence applications of Goal at 3.0 oz./A.

Fungicide: None

Insecticide: Two applications of Warrior at 3.0 oz./A.

Fertility: Broadcast and incorporated 80 lbs./A-N, 60 lbs./A-P, and 120 lbs./A-K and two applications of calcium nitrate injected in the drip system for a total of 14 lbs./A N.

Harvest Date: August 4, 2006

Drying: Bulbs from individual plots were placed in 100 lb. potato Burlap bags and placed in a 17' x 96' high tunnel for 7 days.

Date Graded: October 5 and 11, 2006

Design: Randomized Complete Block with 3 replications.

Varieties	Seed Source	Bulb color
1. Candy*	Seedway	yellow
2. Condor	American Takii	yellow
3. Eagle	American Takii	yellow
4. NuMex Arthur	New Mexico State U.	yellow
5. NuMex Freedom	New Mexico State U	yellow

6. Expression*	Seedway/Bejo	yellow
7. Exacta	Seminis	yellow
8. King Fisher	Seminis	yellow
9. Cowboy	Seedway	yellow
10. Milestone	American Takii	yellow
11. 9003G	American Takii	yellow
12. EM 398*	Emerald	yellow
13. Rosita	Bejo	pink

Table 1. The marketable yield of thirteen Spanish onion varieties evaluated at the Horticulture Research Farm, Rock Springs, PA – 2006.

Variety	Total MKT ^X Yield T/A	Avg. bulb. ^Y wt. lbs.	% Colossal ^Z	% non-MKT
Candy	16.1	0.86	12.4	32.0
Condor	26.3	0.87	17.4	5.0
Eagle	21.7	0.78	12.2	12.0
NM Arthur	20.8	0.88	12.9	15.5
NM Freedom	15.8	0.64	1.7	17.2

Expression	25.0	0.85	20.6	8.0
Exacta	26.6	0.89	23.5	6.2
KingFisher	20.8	0.77	7.6	14.5
Cowboy	19.8	0.64	2.3	3.0
Milestone	16.8	0.55	0.0	4.6
9003G	20.5	0.66	1.6	3.0
EM 398	23.6	0.81	11.6	7.0
Rosita	18.4	0.87	11.3	23.7

X – The total marketable yield is based on an onion population of 50,000 plants/A including jumbo and colossal bulb sizes.

Y – The average bulb weight in pounds included all bulbs greater than 2.5 inches in diameter

Z – The percent colossal bulbs included all bulbs greater than 3.25 inches in diameter.

Table 2. The pungency and soluble solids (sugars) content of 13 sweet Spanish onion varieties evaluated at the Horticulture Research Farm, Rock Springs, PA – 2006.

Varieties	Pungency Mmoles PA/kg	% Soluble Solids
Candy	5.9	7.0
Condor	4.1	7.1
Eagle	5.4	8.3
NuMex Arthur	1.8	5.8
NuMex Freedom	3.2	5.9
Expression	4.3	6.5
Exacta	4.3	5.7
King Fisher	4.7	7.4
Cowboy	5.8	7.9
Milestone	7.2	8.8
9003G	6.0	7.7
EM 398	5.0	7.3
Rosita	<u>4.1</u>	<u>6.6</u>
Trial mean	4.8	7.1

Pungency and soluble tests were conducted by Waters Agricultural Laboratory, Inc., Camilla, GA on November 16, 2006.

Onion Pungency classification based on pyruvic acid levels:

Mmoles pyruvic acid/kg weight of bulbs

1 – 4 very mild sweet onion

5 – 7 mild sweet onion

8-10 intermediate pungency

11-15 pungent

>15 very pungent