

## NEW HAMPSHIRE VEGETABLE, BERRY & TREE FRUIT NEWSLETTER

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### RESEARCH REPORT: 2006 COLORED BELL PEPPER VARIETY TRIAL IN NH

**Background.** Ripe (colored) sweet bell peppers have superior flavor and are more nutritious than their unripe (green) counterparts. Ripening requires an additional 2-3 weeks after fruits are mature green. During this time, fruits are increasingly susceptible to pests and other production problems. In 2006, we evaluated 26 varieties of sweet peppers at the Woodman Horticultural Research Farm in Durham, NH. This is the second year of sweet pepper trials at UNH. 12 varieties were grown in both years; 14 varieties were grown for the first time in 2006. Our goal was to identify varieties that produced high yields of quality colored (red, yellow or orange) fruit early in the season.

**Starting materials and field preparation.** Peppers were seeded on April 17, transplanted into jumbo 0606 flats on April 28, and transplanted to the field on June 1. 50 lbs N and 150 lbs K per acre were incorporated preplant based on soil tests. The peppers were sidedressed twice with 5 lbs soluble N through drip lines. Plants were placed in staggered rows, with 12 linear inches between plants on 3' wide raised beds with black plastic mulch. Ripe (colored) fruits were harvested, counted and weighed weekly between 8/3 and 9/27.

**Pests.** For the second year in a row, European Corn Borer (ECB) was a major pest. Unfortunately, we did not monitor or trap for moths to predict ideal timing for insecticide sprays. Bt was applied but not soon enough or frequently enough to prevent damage. For some of the earliest harvests, over 50% of the fruit were damaged and therefore not marketable. In future years, we will use trap counts (from NH, MA and ME corn IPM web sites) to more effectively manage this pest. One Bt application was used to control tobacco hornworm infestation. No fungicides were applied, since disease levels were low or nonexistent.

### Results

*Yields of colored fruit in August – Table 1.* The first ripe fruits were ready during the week of Aug 3 (compare to Aug 11 in 2005). Yields and variety descriptions are shown in Table 1. Several red bells (**Islander, Paladin, New Ace and Yankee Bell**) produced colored fruits early. As in 2005, **Tangerine Pimiento** ripened early, producing small flattened yellow-orange bells suitable for specialty markets. 2006 was our first year growing **Carmen**, a tapered sweet corno di toro type which was also prolific and early to color. Among the yellow bells, **Golden Summer** produced the most colored fruit early.

*Whole-season yields of colored fruit – Table 2.* The final harvest took place on Sept 27. Highest yields of colored bells were obtained for **New Ace**, followed by **Early Sunation** and **Labrador**, two medium-sized yellow bells. **FatnSassy** was also near the top, with fruit that were blockier with thicker walls than New Ace. The red tapered **Carmen** was also very productive. As in 2005, varieties with the largest fruits produced very late and relatively few marketable colored fruits. These included **Orion, Aladdin, Mandarin, Oriole** and **Gloria**, all of which produced fewer than 2 marketable colored fruit per plant.

2006 vs 2005. Although total yields in 2006 were 2-5 times lower than in 2005 (likely due to field flooding and ECB infestation), the highest and lowest yielding varieties remained the same.

**Table 1. Early season (August 3-August 27) yields of colored bells.**

Variety*	Pounds (6 plants)	No. Fruit (6 plants)	Mature Color	Comments
Carmen <sup>j</sup>	4.8	19	Red	Tapered shape, sweet Corno di Toro type. Attractive and prolific, thin walls, few blemishes.
Islander <sup>j</sup>	4	10.3	Red	Immature color lavender, ripens to red. Unique coloration, prolific and flavorful.
Paladin <sup>sw</sup> <i>PHYT</i>	3	5.7	Red	Thick walled, medium-large blocky fruit. Some cracking. Nice deep green immature color.
Tangerine Pimiento <sup>F</sup>	2.5	19.4	Orange	Small, flattened bell, very thick wall. Bright yellow-orange.
New Ace <sup>sw</sup>	2.4	7.8	Red	Small-med, thin walls, uniform shape and size. Slightly tapered.
Yankee Bell <sup>j</sup>	2.3	6.3	Red	Small-med sized fruits, blocky, thick walls, nice shape.
Fat n Sassy <sup>HPS</sup>	2.1	4	Red	Medium-sized, blocky, thick wall, very attractive.
GoldenSummer <sup>R</sup>	1.8	5.3	Yellow	Yellow-green immature color, ripens to bright yellow. thick walls. Some fruit slightly tapered.
Socrates <sup>R</sup> <i>BLS</i>	1.7	3.7	Red	Blotchy ripening to an orange-red. Lots of rot, med-large fruits, not terribly attractive.
ZsaZsasw	1.7	5	Red	Ivory color, blunt tapered shape, thicker walls and shorter than Carmen
Gourmet <sup>j</sup>	1.7	4.4	Orange	Medium-sized, average wall thickness.
Valencia <sup>sw</sup>	1.5	3	Orange	Somewhat blotchy ripening. Medium-large fruits.
Queen <sup>R</sup>	1.5	4	Orange	Very attractive medium sized bell, thick walls.
Gloria <sup>sw</sup> <i>BLS</i>	1.3	2.3	Yellow	Very large yellow bells.
Red Knight <sup>j</sup> <i>BLS</i>	1.2	2.3	Red	Medium-large fruits, lots of loss to rot.
Admiral <sup>ne</sup> <i>BLS</i>	1.1	2.4	Yellow	Medium-sized, blocky, thick walls.
Lafayette <sup>sw</sup> <i>BLS</i>	1.1	1.7	Yellow	Medium-large fruits.
Early Sunsation <sup>sw</sup> <i>BLS</i>	1	2	Yellow	Medium-sized, blocky, thick-walled.
Canary St	0.8	1.7	Yellow	Very large yellow bells.
King of the North <sup>F</sup>	0.3	0.7	Red	Small-medium, tapered, not uniform.
Orion <sup>j</sup> <i>BLS</i>	0.3	0.5	Red	Produced very few fruits.
Yummy <sup>sw</sup>	0.3	3	Orange	Sweet, mini tapered fruit with thin walls, bright orange. Very attractive, late to mature.
Oriole St	0.2	0.3	Orange	Medium-large orange bell, lost many to rot.
Labrador <sup>j</sup>	0.1	0.3	Yellow	Medium-sized, slightly tapered, easy to pick.
Mandarin <sup>R</sup>	0	0	Orange	Very large elongated fruit. Few fruit, lots of rot
Aladdin <sup>R</sup> <i>BLS</i>	0	0	Yellow	Produced very few fruits.

\* Seed sources: <sup>ne</sup> - New England Seeds, <sup>j</sup> - Johnny's Seeds, <sup>sw</sup> - Seedway, <sup>St</sup>- Stokes, <sup>R</sup>- Rupp Seeds, <sup>F</sup>- Fedco, <sup>HPS</sup>- HPS. Disease resistances: *BLS* = bacterial leaf spot races 1-3, *PHYT* = phytophthora

### Overall Summary/My Picks

*Red Bells* – **New Ace** and **FatnSassy** are best bets for early color, with **Paladin** for a traditional blocky heavy pepper. Paladin has the added benefit of Phytophthora resistance, a plus for growers planting in less than desirable sites. None of these are resistant to bacterial leaf spot (BLS). Among the BLS resistant varieties, **Socrates** might be suitable, but for us it fell short in terms of both yields and appearance for red pepper production.

*Yellow Bells* – **Early Sunsation** (BLS resistant) and **Labrador** were excellent in both 2005 and 2006. Both are slightly later than New Ace, but both produced high yields of very attractive bright yellow fruits with good flavor. **Golden Summer** is also worth considering for early production. Because it's yellow-green immature color gradually turns to bright mature yellow, it can be picked slightly prior to full maturity and still be recognized as a yellow bell.

*Orange Bells* – **Valencia** and **Gourmet** were both nice orange bells with good flavor, but both have low yields when compared with red and yellow varieties. Our casual observation is that orange bells appear to be more susceptible to rots and insect damage than the other colors. **Queen** was not very productive, but the fruits were really beautiful –just like the orange peppers flown in from Holland in the supermarket. For those who can capture very high value for super quality fruits, they might be worth considering.

**Table 2. Whole-season (August 3-September 27) yields of colored bells.**

Variety	Pounds (6 plants)	# Fruit (6 plants)	Mature Color	Variety	Pounds (6 plants)	# Fruit (6 plants)	Mature Color
New Ace	18.1	59	Red	Admiral	7	12	Yellow
Carmen*	16.5	60	Red	ZsaZsa*	6.9	18	Red
Early Sunsation	15.4	30	Yellow	Canary	6.9	15	Yellow
Labrador	15.3	41	Yellow	Gourmet	6.6	18	Orange
Fat n Sassy	14.7	30	Red	Lafayette	6.5	12	Yellow
Paladin	14.4	27	Red	King of the North		15	Red
Socrates	11.9	22	Red	Gloria	5.7	10	Yellow
Yankee Bell	11.8	29	Red	Queen	5	12	Orange
Islander	11.5	33	Red	Oriole	4.2	10	Orange
Red Knight	10.6	22	Red	Mandarin	4	7	Red
GoldenSummer	9.8	27	Yellow	Aladdin	3.7	7	Yellow
Tangerine Pimiento	9	69	Orange	Orion	2.9	4	Red
Valencia	7.9	17	Orange	Yummy	2.4	36	Orange

\* Only 6 plants were grown of Carmen & Zsa Zsa. This is not enough for statistical analysis - interpret with caution!

**ACKNOWLEDGEMENTS:** We are grateful to Johnny's Selected Seeds, Rupp Seeds, and Seedway Seeds for seed donation. Special thanks to John McLean, Evan Ford, David Goudreault and Russell Norton, and the crew at Woodman Farm for their technical assistance and advice.

### INDAR SECTION 3 LABEL FOR BLUEBERRIES

A national supplemental label (section 3) has now been issued for Indar to be used for disease control on blueberry. In addition to mummyberry, the label also includes alternaria, anthracnose, leaf spot and blotch, phomopsis, powdery mildew and rusts. Follow the label for additional restrictions and terms of use. For the past three years, the state of New Hampshire has applied for and has received an emergency use (Section 18) label for the fungicide Indar (fenbucanazole) to control mummy berry on blueberries in New Hampshire. We no longer need to go through this process. This section 3 label does not expire at the end of this year, and you no longer need to file usage reports with me. You still need to file reports with the division of pesticide control as usual, and you must have a copy of the supplemental label on hand in order to use Indar for blueberries. You can get a copy from pesticide dealers, from your local cooperative extension educator, or online at <http://www.cdms.net>.

*Fungicide use and timing.* To prevent primary infections, fungicide applications should begin at bud break, or at the early green tip stage of growth. The material should be reapplied at the recommended interval (10-14 days). An important reminder: **This supplemental label applies only to Indar - use of Orbit (propiconazole) is not permitted!** For optimum disease control and to prevent the mummy berry fungus from becoming resistant to Indar, cultural practices should also be used to reduce disease incidence. These include mulching to bury the mummies and raking or applying urea in very early spring to disturb the apothecia before they release spores.

## UPCOMING MEETINGS AND EVENTS



*Fri-Sat Feb 23-24. Training for Initial Pesticide Applicator Certification Exam.* 4-9pm on Fri, 9am-noon on Sat. Lancaster, NH. Contact: Rachel Maccini, 603-629-9494. **AC, O.**

*Mon Feb. 26. Vermont Vegetable and Berry Growers' Annual Meeting.* Capital Plaza Hotel, Montpelier VT. Contact: Vern Grubinger, 802-257-7967. **V, F, O.**

*Wed-Thurs. Feb28-Mar1. New England Farmers' Direct Marketing Conference & Trade Show.* Sturbridge, MA. Keynote speaker is Jane Eckert, 'Marketing with More Creativity than Cash'. Registration for both days \$85, reduced fess for additional family members and scholarships are available. See <http://www.harvestnewengland.org> for complete schedule. Contact: 617-626-1700. **AC.**

*Sat. Mar 3. NOFA-NH Winter Conference.* Tilton, NH. The program is filled with excellent sessions for commercial and backyard growers alike. Keynote speaker is John Carroll, UNH Professor of Natural Resources. Contact: (603) 224-5022 or [info@nofanh.org](mailto:info@nofanh.org) or <http://www.nofanh.org/calendar.html>. **AC, O.**

*Sat. Mar 3. Tree Fruit Pruning Demo.* Kigali Farm, Cornish, NH. 10am-12:30pm. Contact: Seth Wilner, (603) 863-9200. **TF, PAT.**

*Tues. Mar. 6. New England Brassica School.* 8:30am-4:30pm. Sturbridge, MA. Topics include nutrition, flowering physiology, marketing, pest control, and season extension for brassica crops. Registration \$50. Contact: Andrew Cavanagh, [acavanagh@psis.umass.edu](mailto:acavanagh@psis.umass.edu) or (413) 545-3696. **V, O.**

*Sat. Mar 10. New Hampshire Vegetable and Berry Growers' Association Meeting.* 9am-4:15pm. Boscawen, NH. Topics include beneficial insects, cucurbit disease control, specialty crops (garlic/onion, sweetpotato, heirloom tomatoes), brassica cover crops, weather impacts on berry crops, and more. \$25 members/\$30 non-members, includes lunch. Contact: Chip Hardy, 603-645-2241. **V, F, PAT, O.**

*Wed. Mar. 14. New England Greenhouse Tomato School.* Doubletree Hotel, Burlington, VT. Program includes an update on Quebec growing practices, biocontrol of greenhouse tomato pests, greenhouse tomato disease control, and more. Contact: Vern Grubinger, 802-257-7967. **V, O.**

*Wed-Thurs. Mar 21-22. Maine Vegetable Growers' School.* Springvale (3/21) and Waterville (3/22), ME. Contact: Mark Hutchinson, 800-244-2104. **V, F, PAT.**

*Thurs. Mar 22. Fri. Mar 23. New Hampshire Fruit Growers' Association Meeting.* 9am-4 pm. Boscawen, NH. Contact Herb Cooper, 603-323-7558 or George Hamilton, 603-641-6060. **V, F, PAT.**

*Sat. Mar 24. Apple and Blueberry Pruning Demo.* Deer Cap Orchard, Ossipee, NH. 9am-1pm. Contact: Tina Savage, (603) 539-3331. **TF, PAT.**

*Mon. Apr 9. Peach Pruning Demo.* Carter Hill Orchards, Concord, NH. 5-7pm. Contact Sadie Puglisi, (603)225-5505. **TF.**

**Meeting topics:** F = flower, O = certified organic, SF = small fruit, TF = tree fruit, V = vegetable, AC = all crops. PAT = pesticide applicator recertification credits available.

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