MATTED ROW STRAWBERRY VARIETY TRIAL RESULTS, 2012
Highmoor Farm, Maine Agricultural and Forest Experiment Station

David T. Handley
University of Maine Cooperative Extension
P.O. Box 179, Monmouth, ME 04259, USA

Strawberry production in Maine is limited by a relatively short growing season, severe winter conditions, and red stele root rot (*Phytophthora fragariae*). The market for strawberries is almost exclusively local and, because nearly all of the fruit is being sold fresh as either "pick-your-own" or at nearby farm markets, excellent fresh quality is essential. Demand for fresh fruit is strongest near concentrated population centers. However, suitable land for strawberry production is often very limited in such areas, requiring plantings to be high yielding in order to both meet demand and be profitable. There are presently no strawberry breeding programs in the northern New England region. Thus introductions from breeding programs in other regions must be tested in order to evaluate their adaptability and performance under Maine growing conditions and cultural practices.

The trial was established at Highmoor Farm, part of the Maine Agricultural and Forestry Experiment Station, in Monmouth, Maine. Twenty-one strawberry cultivars were planted from dormant crowns on June 8, 2011 (Table 1). The site had a silt loam soil, previously planted to sweet corn. It was amended with 10-10-10 fertilizer at a rate of 500 lbs./acre prior to planting. The plots were established as narrow matted rows atop 8 inch high, 18 inch wide raised beds with a single drip irrigation line buried approximately 2 ½ inches deep in the beds. Crowns were planted 12 inches apart in rows four feet apart. Each plot was 18 feet long. Each cultivar was replicated four times in a randomized complete block design. Flowers were removed during the planting year, and runner plants were allowed to root to fill out the rows to a width of 0.5 m. Straw mulch was applied over the planting for winter protection on in the late fall of 2011. The mulch was raked off of the plants in late April of 2012. Calcium nitrate was applied over the plants at a rate of 85 lbs. /acre on approximately three weeks after mulch removal. The planting was sprayed three times with a combination of recommended fungicides and insecticides during the bloom period to control fruit rots, tarnished plant bug and strawberry bud weevil. Harvest began on in late June of 2012 and continued twice weekly through late July. Fruit was harvested from each plot, graded, counted and weighed.

Extended dry periods throughout the growing season of 2011 appeared to inhibit runner production and rooting, leading to a more space plant population than desired, but most varieties established fairly well with the exceptions of 'Cabot' and 'Valley Sunset' which showed poor survival and growth after planting. 'Valley Sunset' was eliminated from the trial, and 'Cabot' results are likely not reflective of the true potential of this variety. The cultivars 'Record', 'Cavendish', 'US1463', 'Mesabi', and 'K0412' produced the highest yields of marketable fruit in this trial (Table 1). 'Sable', 'Jewel', 'Daroyal', 'Flavorfest' and 'Brunswick' also produced acceptable yields. 'Cabot', 'Clancy', 'Orleans', 'St. Laurent', 'Donna' and 'L'Amour' produced relatively low yields. 'Galletta', 'Record' and 'Cabot' produced the largest fruit in the trial, followed by 'Cabot', 'Darselect' and 'Wendy'. Others with good fruit size included 'Clancy', 'Flavorfest', 'K0412' and 'Cavendish'. 'US1463' and 'Sable' had the smallest overall fruit size in the trial. Fruiting patterns showed a range of peak harvest dates, harvest durations, and reductions in fruit size among cultivars. Based on the first fruiting year of this trial, 'Cavendish', 'Mesabi', 'Sable', and 'Jewel' appear to be cultivars with high potential for northern New England, producing very good yields and having good fruit quality characteristics. 'Record' had very high yields and large fruit, but the light color, softness and flavor may lower its market

potential. Other varieties with good overall performance this season included 'Brunswick' and 'Wendy'. Of the newest selections trialed, 'US1463', 'K0412', 'Flavorfest', 'Galletta' and 'Daroyal' appear to be worthy of further trial in this region. The harvest patterns of the top yielding cultivars continue to indicate a need for both very early and late maturing cultivars that produce large fruit and higher yields in order to extend the harvest season. Future breeding efforts for this region should also consider incorporation of resistance to the prevalent races of *Phytophthora fragariae*.

Our thanks to Nourse Farms, Krohne Plant Farms, G.W. Allen Nursery, the New England Vegetable & Berry Growers Association and the Maine Vegetable & Small Fruit Growers Association for their support of this project.

Table 1. University of Maine Strawberry Variety Trial: Narrow matted row, raised bed system, Highmoor Farm, Monmouth, Maine, 2012.

Variety	2012 kg/plot	Number of Fruit	Berry Wt. (g)	%Cull Wt.	Yield Rank	Comments
Brunswick	4.84	479	10.1	19	10	Early-midseason; firm, dark red fruit, fair flavor
Cabot	1.71	132	12.9	45	20	Late; large fruit, irregular, bright red, soft, high gray mold
Cavendish	8.02	710	11.3	20	2	Early-midseason; med-large, firm fruit, dark, white spot, nice flavor
Clancy	2.50	212	11.8	24	19	Late; large firm fruit, low yield
Daroyal	4.93	456	10.8	20	8	Early-midseason, good look, soft, mild flavor, uniform
Darselect	4.07	319	12.7	23	14	Midseason; large, attractive, firm, melon flavor, leaf scorch
Donna	3.55	364	9.7	23	16	Early-midseason; red-orange, firm, very sweet, uniform shape
Flavorfest	4.89	418	11.7	25	9	Early; large, attractive, nice flavor, leaf spot
Galletta	4.71	324	**14.5**	28	11	Early; large, firm fruit; attractive, tart
Jewel	5.69	582	9.8	27	7	Midseason, bright red, firm, good yield
L'Amour	3.89	336	10.6	26	15	Early; firm, dark, nice flavor, low vigor and yield
Mesabi	6.97	713	9.8	28	4	Early-midseason; dark, firm, acid, many small fruit; picks hard.
Mira	4.44	445	9.8	21	13	Mid-late; light red, firm, acid
Orleans	2.76	266	10.4	18	18	Late; orange-red, firm, faint flavor, variable size, shape
Record	**10.70**	739	**14.5**	20	1	Late; large, orange-red, uniform conic; sweet, musky, soft
Sable	5.97	652	9.1	21	6	Early; dark, soft, sweet, many small fruit late
St. Laurent	3.41	320	10.6	28	17	
Wendy	4.66	366	12.7	22	12	Early, large, bright red, attractive, good flavor; leaf spot
US1463	7.73	873	8.85	18	3	
K0412	6.69	578	11.6	**15**	5	Early-midseason; large, good color, intense flavor, crunchy, long season
HSD 0.05[1]	5.80	506				


66A
Sable


72 A
Jewel


83A
Cavendish


80A
Mesabi


78A
Brunswick


71A
71 A
Wendy