

Romaine Lettuce Variety

Trials, 2009

UH Poamoho Experiment Station
Winter 2008 trials grown Dec. 2008 to March 2009

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Fresh Heart



41-40RZ

Romaine Lettuce Variety Trial

UH Poamoho Research Station

Spring 2009

Plot size= 30 ft double rows, staggered planting 2 ft between plants within the row

Schedule:

Direct Seeded Dec. 22, 2008

Thin and Transplant to blank spots Jan. 14, Jan. 26th

Transplant from trays Feb. 2, 2009

First Harvest March 2, 2009

Days to first harvest after direct seeding: 70 days

----- HWY----- HWY -----

HEAD
HOUSE

XXX	XXX	XXXX	XXXX		932 Magenta Johnnys	933 Galactic Johnnys	934 Winter Density Johnnys
925 Heavy Heart Seminis	926 Valley Heart Seminis	927 Bambi Johnnys	928 Jericho Johnnys		929 Eruption Johnnys	930 Claremont Johnnys	931 Concept Johnnys
922 Noga Hazera	923 Linoy Hazera	924 Tanir Hazera	924A Brave Heart Seminis		XXX	XXX	XXX
915 Paramount Siegers/Enza	916 Valley Fresh Siegers/ Syngene	917 Tall Guzmaine Elite Siegers/Pybas	918 Barracuda Siegers/ Syngenta		919 Nun-6044 Nunhems	920 Nun-6047 Nuhmems	921 Lital Hazera
907 1594 PYB Siegers	909 Coastal Star Siegers	910 Hearts Delight Siegers/ Enza	911 Musena Siegers		912 Fresh Heart Siegers/ Orsetti	913 1184 PYB Siegers/ Pybas	914 Rubicon Siegers/ Paragon
900 Pic 454 Western Pacific	901 Gorilla Western Pacific	902 King Henry Western Pacific	903 Ceasar Western Pacific		904 41-40RZ Rijk Zwaan	905 41-64RZ Rijk Zwaan	906 Big Green Cos Siegers
R-1	R-2	R-3	R-4		R-5	R-6	R-7

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Table 1. Head weight and yield of several Romaine and leafy lettuce varieties grown at the UH Poamoho Station, Winter 2008.

Cultivar	Head Weight (lbs)	Length Head (inches)	Stand (%)	Yield actual (lbs/100 ft row)	Yield potential (lbs/Acre)	Yield actual (lbs/Acre)
Fresh heart	2.58	19.29	100.00	77.5	28023.4	28,023.4
Nun6044	2.23	15.59	90.00	60.2	24204.2	21,783.8
1184PYB	2.16	14.33	100.00	64.9	23488.1	23,488.1
Tall Guzmanine	2.09	14.41	80.00	50.2	22676.5	18,141.2
Lital	2.06	13.54	100.00	61.8	22342.3	22,342.3
Brave Heart	1.98	15.75	60.00	35.6	21483.0	12,889.8
Nun6047	1.94	13.07	100.00	58.2	21053.3	21,053.3
Big Green	1.93	14.41	100.00	57.9	20957.9	20,957.9
Valley Fresh	1.92	15.67	80.00	46.1	20862.4	16,689.9
4164RZ	1.90	13.39	90.00	51.2	20575.9	18,518.3
Musena	1.90	14.17	60.00	34.2	20623.7	12,374.2
Barracuda	1.89	14.96	100.00	56.6	20480.5	20,480.5
Tanir	1.83	15.35	80.00	43.9	19851.9	15,881.5
Concept	1.81	16.69	100.00	54.4	19668.9	19,668.9
HeavyHeart	1.62	16.38	100.00	48.7	17616.1	17,616.1
King Henry	1.57	14.17	100.00	47.1	17043.2	17,043.2
1594PYB	1.56	14.72	90.00	42.2	16947.7	15,252.9
Gorilla	1.48	15.04	100.00	44.5	16088.4	16,088.4
Paramount	1.47	14.88	100.00	44.2	15992.9	15,992.9
Rubicon	1.42	14.09	80.00	34.1	15420.0	12,336.0
Claremont	1.39	10.79	70.00	29.1	15038.1	10,526.7
Winter Density	1.15	11.89	100.00	34.5	12460.1	12,460.1
Bambi	0.64	7.32	40.00	7.7	6970.0	2,788.0

Note: This first harvest was conducted on March 2, 2009, 70 days after direct-seeding.

Note: Yield assessment based on the average weight of 5 heads per plot. Plant spacing was 2 ft between plants within rows, and two rows per bed, spaced 1 feet between rows, and planted in a staggered arrangement.

Note: Per acre yields were calculated based on an estimated 10,850 plants per acre, based on double row beds, and 4 ft between beds.

Note: "Actual yields" take into consideration the percent plant stands. For instance if, based on head weight, and total potential no. of plants per acre, if the potential yield was 10,000 lbs, but only 70% plant stand, Actual Yields are listed as 7,000 lbs/Acre (showing that 30% of the plants failed to produce).

Table 2. Field growth index observations of several Romaine lettuce varieties grown at the UH Poamoho Station on Winter 2008, taken 23 days after direct seeding Jan. 14, 2009.

Cultivar	Plant Stand (%)	Vigor (1-10) (10 is best)	Size (1-10) (10 is tallest)
Pic-454	30	2	3
Gorilla	90	6	4
King Henry	100	8	6
Cesar	95	4	4
41-40RZ	95	7	7
41-64RZ	100	6	6
Big Green Cos	100	5	4
1594 PYB	95	5	4
Coastal Star	10	2	2
Hearts Delight	5	2	2
Musena	100	4	3
Fresh Heart	100	5	5
*1184 PYB	100	5	5
Rubicon	90	3	2
Paramount	95	5	4
Valley Fresh	70	4	3
Tall Guzmaine	40	2	2
Barracuda	95	3	3
Nun-6044	80	3	3
Nun-6047	94	4	5
Lital	95	3	2
Noga	90	3	2
Linoy	70	2	2
Tanir	80	5	4
Brave Heart	65	2	2
*Heavy Heart	95	4	3
Valley Heart	10	2	1
Bambi	10	2	1
Jericho	95	3	3
Eruption	5	2	1
Claremont	95	3	3
Concept	95	4	3
Magenta	30	2	1
Galactic	10	1	1
*Winter Density	95	3	3

Note: Varieties in bold were rated best, based on visual observations, those in bold with an asterisk (*) were the top rated, this early in the growth cycle.

Note: Plant stand is the percent number of plants that survived after direct seeding.

Table 3. Field Observations, and growth index, on canopy and leaf characteristics, taken 56 days after seeding on Feb. 17, 2009.

Cultivar	height (inches)	stand (10=best)	vigor (10=best)	Uniformity (10=best)	Appearance visual (10=best)	Overall (10=best)	comments
Gorilla	14	10	8	6	8	7	savoy
King Henry	13.5	10	9	8	9	9	savoy
Cesar	11.5	10	8	7	8	8	savoy
41-40RZ	15.5	10	8	9	8	9	heading
41-64RZ	14	9	8	9	8	9	nice slender head and leaves
Big Green Cos	13	10	7	9	8	8	savoy, nice head
1594 PYB	12	9	7	6	8	7	savoy, small
Coastal Star	6	4	5	6	6	6	transplanted late, still small
Musena	12	6	6	6	7	6	savoy, nice head
Fresh Heart	18.5	10	9	6	9	9	savoy, nice head
*1184 PYB	13	10	8	8	10	10	best rating, nice small heads
Rubicon	11	8	7	6	8	8	x-savoy, small heads
Paramount	16.5	10	8	6	9	8	nice heads, semi-savoy
Valley Fresh	14	8	7	6	8	7	nice heads
Tall Guzmanine	14.5	8	7	6	7	7	semi-savoy, heading already
Barracuda	12.5	10	8	8	9	8	nice heads
Nun-6044	15.5	9	7	8	8	7	some transplanted, nice heads, large
Nun-6047	12	10	7	7	9	8	early, nice small heads
Lital	13.5	10	7	7	8	8	light green, open head, leafy
Noga	13	9	7	7	9	8	nice small savoy, open head, nice leaves
Linoy	17	7	7	6	8	7	nice tall heads, upright, large smooth leaves
Tanir	15.5	8	7	8	8	8	tall heads, upright, large savoy leaves
Brave Heart	15.5	6	7	6	9	8	nice upright tall heads, semi-savoy/smooth lvs
*Heavy Heart	15	10	8	8	10	10	best rating, nice small heads, semi savoy/smooth lvs
Valley Heart	11	2	4	3	4	4	blank plot
Bambi	7	4	4	5	7	7	weak, poor germination, nice small lvs, dark green
Jericho	13	10	8	9	10	9	nice light green leaves, open head
Claremont	10	7	7	8	8	9	nice baby head, nice upright
Concept	9	10	9	9	10	10	nice open, leafy, large savoy leaves
Magenta	8.5	6	6	6	10	7	v nice red/green, leafy, poor stand
Galactic	7.5	8	6	7	10	10	v nice dark red, leafy, weak plants
*Winter Density	12	10	8	9	10	10	best rating, v nice small heads, small upright

Note: Varieties in bold were rated best, based on visual observations, those in bold with an asterix (*) were the top rated, this early in the grow cycle.

Table 4. Field Observations, index values (1-10), on canopy and leaf characteristics, 63 days after seeding, taken Feb. 24, 2009.

Cultivar	Color leaf (10=dark, 1= light green)	Appearance leaf (10=savoy 1= smooth)	Texture leaf (10=smooth 1= rough)	Canopy (U=upright o=open)	Height (inches)	Appearance Overall (10= best)	Comments
Gorilla	6	7	8	Ut	17	7	
King Henry	7	8	8	Ut	17	7	
Cesar	6	7	6	U	14	7	more open canopy
41-40RZ	6	7	7	Ut	17.5	9	early, looks good, nice
41-64RZ	5	6	7	Us	15	8	early, small head, nice
Big Green Cos	6	7	6	U	14.5	9	early, small, nice
1594 PYB	5	6	7w	Uo	16	7	waxy leaf, open canopy
Coastal Star	4	6	6	o	9	6	early, late planting
Musena	6	8	6w	U	13.5	7	early, waxy leaf
Fresh Heart	6	7	8w	Ut	20	9	looks good, early, waxy, processing (fres
1184 PYB	5	6	7w	U	12	9	early, nice, smaller head, waxy leaf
Rubicon	6	9	6	Uo	15.5	8	more open canopy, OK
Paramount	6	6	8	U	16.5	8	early, fresh mkt, smaller head, nice
Valley Fresh	5	6	8w	U	15.5	8	waxy, upright slender, nice
Tall Guzmaine	6	7	7w	Ut	16	7	waxy, still heading
Barracuda	6	6	8w	U	15.5	6	waxy, mid-early, already heading
Nun-6044	6	4	9w	U	16	8	waxy, soft texture, processing
Nun-6047	7	6	7w	Us	15	9	waxy, nice smaller heads, fresh mkt
Lital	3	7	6w	O	14.5	9	waxy, nice open head, light green, fresh r
Noga	4	10	8w	O	17.5	8	waxy, nice open head, salad mix, fresh m
Linoy	6	5	6	Ut	16.5	8	early, some planted late
Tanir	6	7	7	U	16	7	early, nice medium-sized heads
Brave Heart	7	4	6	U	13.5	8	early, nice heads
Heavy Heart	6	6	7	Ut	16	8	mid-early, processing, nice tall heads
Valley Heart	6	6	5	O	11.5	4	rough leaf, most plants missing, poor
Bambi	8	8	5	O	8	6	leafy, rough leaf, Fresh mkt, OK
Jericho	3	7	8	O	16	8	fresh mkt, light green, leafy salad mix mk
Claremont	6	4	5	Us	11.5	8	nice short heads, fresh mkt, still heading
Concept	6	8	7	O	15.5	10	leafy, fresh mkt, nice leafy head
Magenta	4	5	6	O	10.5	10	leafy, very soft leaf, salad mix, red/green
Galactic	red	8	9	O	9	10	leafy, soft leaf, leafy salad mix
Winter Density	8	8	7	U	12.5	9	early, nice small heads, fresh mkt

Note: Varieties in bold were rated best, based on visual observations.



Nun-6044



Lital



Brave Heart



Concept



Magenta



HMX-5851

Yields of several lettuce varieties grown at the UH Poamoho Experiment Station, Jan-March 1999

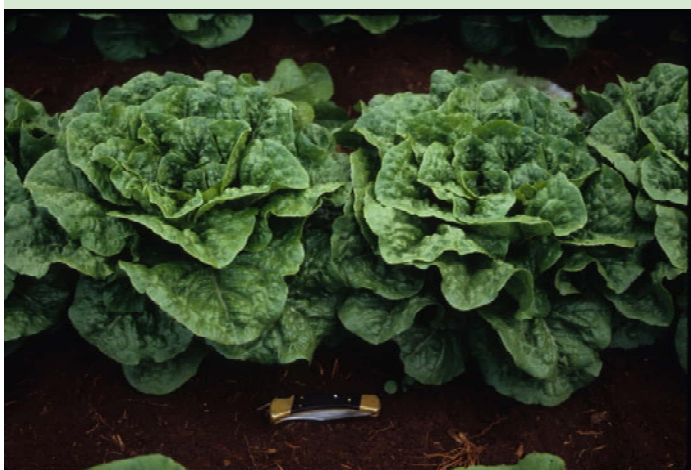
Cultivar	Type	Average wt. (lb/plant)	Average weight (oz/plant)	Yield (lb/100 ft)	Yield (lb/Acre)
Paris Island*	Romaine	1.77	28.3	176.6	19,160
Short Guzmaine*	Romaine	1.75	28.1	175.5	19,040
Floricos*	Romaine	1.61	25.8	160.9	17,461
Floridade	Romaine	1.55	24.8	154.9	16,815
Valmaine*	Romaine	1.36	21.7	135.6	14,710
70096	Romaine	1.24	19.8	123.7	13,418
70180	Romaine	1.18	19.0	118.4	12,845
Everglades	Butterhead	0.79	12.6	78.9	8,563
B-1239-3	Butterhead	0.50	7.9	49.6	5,382
Dark Green Btn*	Boston	0.93	14.9	93.2	10,118
B1192	Boston	0.73	11.7	72.7	7,893
Floribib	Boston	0.60	9.6	60.2	6,530
Manoa*	semi-head	0.52	8.2	51.6	5,597

* Standard varieties (old or new). Paris Island (California, Hawaii, other places); Dark Green Boston (California, NY, other places); Short Guzmaine (hydroponics, Big Island): Manoa (Hawaii); Floricos (Florida); Valmaine (old std., Hawaii, Florida, California, NY, etc.)

Note: Lettuce was sown on January 13, 1999 on 50 ft plots. Plants were thinned about 2 weeks after planting to obtain a distance of 1 ft between plants. The field was sprinkler irrigated as needed, normally 2x per week. On March 10, a five foot section was harvested from each plot and the weight of 5 plants was recorded individually.

Yield data: Overall all varieties showed a uniform growth and marketability of harvested plots was nearly 100%. Yields per acre were calculated based on a conservative estimated population of 10,850 plants per acre (assuming a spacing of 4 ft between rows and 1 ft between plants in the row).

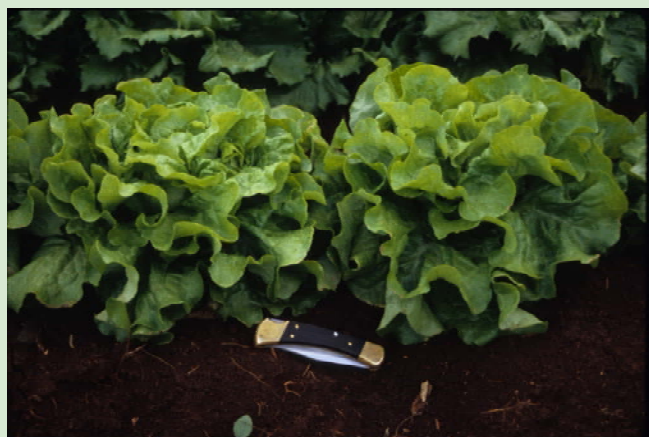
1999 Lettuce Variety Trials



Short Guzmane



Valmaine



Everglades (butterhead)



Cocarde (Johnny's)

Variety Description Romaine Lettuce Trials 2009

1184 PYB (Siegers/Pybas)- head green;

1594 PYB (Siegers)- green romaine

41-40RZ (Rijk Zwaan)- a medium green color with an open habit that is more resistant to internal burn than nirvanus rz

41-64RZ (Rijk Zwaan)- has proven excellent for an emphasis on hearts. medium green color, very erect with a strong resistance to internal burn

Bambi (Johnny's), baby green romaine

Barracuda (Siegers/Syngenta), green.

Big Green Cos (Siegers)

Brave Heart (Seminis) Brave Heart is a tall, sure-heading romaine with medium green, smooth leaves. It is resistant to corky root rot and has intermediate resistance to downey mildew (CA V) and is well-suited for hearts, fresh market and processor use. CRR, DM [I, IIA, IIB, III, IV, VI] (R); DM [V] (IR)

Ceasar (Western Pacific Seed)- corky root resistant, large frame variety, dense heart produces excellent height and weight

Claremont (Johnny's) Elegant mini romaine. The upright heads of this specialty lettuce average 9" tall. Deep green leaves with delicious, crispy ribs are open at the top, tapering elegantly to form a dense heart. Its size, habit, and color are ideal for specialty markets as a stand-alone or an attractive twin-pack lettuce. Also nice in boxes of mixed types and colors. Can be spaced 6" apart. Resistant to DM races 1-5, 7, 10, 11, and 17. Mini: 400 seeds. Packet: 800 seeds. Days to Maturity or Bloom: 46

Coastal Star (Siegers) 65 D, leaf: Dark Green, Smooth; Taller plants with the ideal dark green color to meet current market demands. Suitable for "Hearts" or 24-count box pack

Concept (Johnny's) New last year! Conventional seed with organically-approved pelleting. Romaine-like, greenleaf/summer crisp. The leaves have characteristics of both a romaine and a greenleaf, and are arranged in a whorl, giving the plant a unique vase-like shape. Leaves are thick, juicy, and flavorful. Avg. 15,000 seeds/lb. Packet: 250 seeds. Days to Maturity or Bloom: 51

Eruption (Johnny's) Dark red, bibb-romaine cross. Eruption forms unique, 8" tall heads with dark red, glossy leaves and a bright green, blanched interior. The habit is similar to Winter Density, and the two varieties make a great red and green pair for marketing together. Also good for salad mix, the young leaves are deep red and slightly ruffled. Resistant to DM races 1-16, 19, and 21, as well as LMV. Days to Maturity or Bloom: 28 days baby, 50 days full size.

Fresh Heart (Siegers/Orsetti) head, green

Galactic (Johnny's) Darkest red for salad mix. Intense red, even under low-light conditions. Resistant to DM races 1-16. NOTE: Full-sized heads are relatively small and lightweight. Packet: 250 seeds. Days to Maturity or Bloom: 30 days baby, 58 days full size.

Gorilla- (Western Pacific Seed)- a large romaine with good bolt tolerance. upright with savoyed appearance and a dense head

Hearts Delight (Siegers) 56-57 D; leaf: Dark, Grey-Green, Slightly Savoyed; Tall, erect romaine suitable for hearts, processing or standard 24 pack

Heavy Heart (Seminis) summer romaine is tall yet compact in diameter; slightly dark green in color;

slightly closed (producing a heart); has a slightly blistered and large leaf, very little tip burn and bolting tolerant; can be used by processor, fresh market and hearts segments; targeted for the south county in Salinas area; sow dates in Salinas and Santa Maria, California are March 1 to September 1. Similar: Hearts Delight, Bullet.

Jericho (Johnny's). 28 days baby, 57 days full size; excellent taste, Tall, heavy heads are bright light green with excellent eating quality. Our best-tasting romaine. Heads somewhat more closed than Kalura, which it replaced. Organically grown. Heat and tipburn tolerance

King Henry (Western Pacific Seed)- corky root resistant with good bolt tolerance and excellent tolerance to tip burn. a medium sized dark romaine.

Linoy (Hazera) Dark Romaine lettuce suitable for hot climates but grown well also during winter; head upright, firm, dense; rib, smooth; dark green; planting season, summer; 60-75 d; tip burn tolerance, moderate; bolting slow;

Lital (Hazera) head upright, firm,dense; rib, fair; green, 90-110 d; minor blisters;

Magenta (Johnny's) Improved Sierra. Shiny, slightly puckered, red-tinged leaves form a whorled, conical head with a crispy, green heart. Ideal for spring and summer plantings with good taste and tolerance to bolting, tipburn, and bottom rot. Resistant to DM races 1-16, 19, and 21 as well as LMV. Packet: 250 seeds.

Musena (Siegers) green

Noga (Hazera) A leading romaine variety for hot climates. Moderate blisters; head, open upright; rib, fair; color glossy green; planting season summer; 60-75 d; tip burn tolerance, moderate; bolting, slow;

Nun-6044 (Nunhems)

Nun-6047 (Nunhems)

Paramount (Siegers/Enza)- 60 d; leaf: Medium Green; Corky Root resistant romaine that is taller and heavier than Darkland Cos. Suitable for fresh pack or processing. MTO

Pic-454 (Western Pacific Seed)- a large parris island with excellent uniformity.

Rubicon (Siegers/Paragon)- 67 d; leaf: Dark Green, Thick, Heavily Savoyed; Large framed. Excellent interior fill. Heavy weight. CAUTION: Not for high-heat harvest periods.

Tall Guzmaine Elite (Siegers/Pybas) 65 d; leaf: Deep, Dark Green, Blistered, Open; Medium Tall; Blistered leaf. Widely adapted. Best for summer harvest. Heat(T), LMV(IR), Ss(IR)

Tanir (Hazera)

Valley Fresh (Siegers/Syngene)

Valley Heart (Seminis) Romaine type; medium green color, slightly blistered and large leaf, semi closed, narrow bottom, tall growth habit; non-glossy leaves, smooth leaf margin; very good cold tolerance combined with good bolting and tip burn tolerance; can be used by processor for fresh and hearts segments. Similar: King Henry, Green

Winter Density (Johnny's). Unique, specialty bibb-romaine type.

Compact, extra-dark green heads, about 8" tall. Very tightly folded. Even the outer leaves take part in the head formation. Can be best described as a tall Buttercrunch. Good salad quality. Can be grown spring, summer, or fall, and is tolerant of frost. A unique, long-popular English lettuce, known in France as "Craquerelle du Midi" or "Craquante D'Avignon." Mini: 400 seeds. Packet: 800 seeds.
Days to Maturity or Bloom: 28 days baby, 54 days full size.

Seed Sources

Hazera (Israel),
tel. 954 429 9445
www.hazerainc.com

Johnny's Seed.
t. 1-877-564-6697;
www.johnnyseeds.com

Nunhems (Netherlands)
t. 208-674-4100, customer.service@nunhemsusa.com
www.nunhemsusa.com

Rijk Zwaan (Netherlands)
Salinas, California. RE: Chris Miller. Tel. 831 455 3000
www.rijkszwaanusa.com

Seminis,
RE: Jeff Sais tel. 805-934-8436.
email: jeff.sais@seminis.com
<http://www.seminis.com>

Siegers Seed Co., tel. 800-962-4999
www.siegers.com

Western Pacific Seed.
RE: Jason Cooksey. Tel. 951-735-7289
email: jcooksey@westernpacificseed.com
<http://www.westernpacificseed.com/>

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