
Project Title: Identification of Lettuce Cultivars for Traditional and New Markets

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Final Report

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Identification of Lettuce Cultivars for Traditional and New Markets

Annual Report 2015

Kim Best, Project Leader

Abstract

Cultivars of several types of lettuce were evaluated in five successive plantings within commercial lettuce fields in Canning, NS. The most notable cultivars were 'Valley Heart' and 'Salvius' Romaine, 'Estival', 'Champlain' and 'Caretaker' head and 'Two Star' and 'Teide' leaf lettuces. 'Amaze' and 'Muir' were mini specialty heads that were very attractive. This trial will be continued for two more years to evaluate the cultivars over several growing seasons.

Project Objective: The objectives of this trial were to evaluate cultivars of lettuce that have the potential for economical production and marketability in NS; to test niche or under produced crops such as hearts and leaves; and to provide a replacement cultivar for standard cultivars currently in use but being de-listed (head lettuce) and cultivars with heat and tipburn tolerance.

Materials and methods: Five plantings of Romaine, specialty, leaf and head lettuces were set over the 2015 growing season, with Romaine cultivars planted at 12" in-row spacing to develop full-size heads and at 6" in-row spacing to emulate Romaine heart production. Head lettuce cultivars were planted at 14" in-row spacing, the specialty cultivars at 6" and the leaf lettuce cultivars at 12". The cooperator cultivated the land and applied agronomic inputs as required. Weeding was shared by the research crew and farm crew. Harvest was conducted at mature size for the specific markets, with yield and quality data collected. Marketable heads were returned to the cooperator for commercial lettuce packing.

Results and discussion: Romaine cultivars with high quality and the heavy heads were 'Valley Heart' and 'Salvius'. 'Estival', 'Champlain' and 'Caretaker' were notable head lettuce cultivars with attributes required by the market, although they were not necessarily the heaviest heads. 'Two Star' and 'Teide' were very good green and red leaf lettuce cultivars. A number of the specialty cultivars showed promise in their prospective markets. These included 'Amaze'; a mini Romaine with a butterhead-type leaf and 'Muir', a leaf cultivar (summer crisp) that produces an excellent miniature head. 'Fusion' was a cultivar described as suitable for individual leaf sales. This cultivar had a frilly leaf margin an excellent appearance but leaves were not as broad as desired for using as a 'wrap'. Another cultivar will be sourced for this purpose.

Conclusion and Summary: A large number of cultivars of several types of lettuce were evaluated over the growing season in Canning, NS. A number of cultivars were of interest for sizing, quality, appearance or other specific market attributes. These included: 'Valley Heart' and

‘Salvius’ Romaine, ‘Estival’, ‘Champlain’ and ‘Caretaker’ head lettuces, and ‘Two Star’ and ‘Teide’ leaf lettuce cultivars. This trial will continue for two more years to evaluate the cultivars over several growing seasons.

Executive Summary: Horticulture Nova Scotia conducted a trial in 2015 to evaluate cultivars of several types of lettuce from five plantings within commercial lettuce fields in NS. The most notable cultivars were ‘Valley Heart’ and ‘Salvius’ Romaine, ‘Estival’, ‘Champlain’ and ‘Caretaker’ head and ‘Two Star’ and ‘Teide’ leaf lettuces. ‘Amaze’ and ‘Muir’ were mini specialty heads that weve very attractive. This trial will be continued in 2016 and 2017 to further evaluate the cultivars over several years.

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Table 1 . Seed Sources, 2015

Crop	Cultivar	Source
Romaine	Valley Heart	Norseco
	Salvius	Johnny's
	Sparx	Veseys
	Stryker	Veseys
	Helvius	Johnny's
	Rome 59	Veseys
	Bidwell	Veseys
	Coastal Star	Johnny's
	Mutiny	Veseys
	Arroyo	Norseco
	Ridgeline	Johnny's
	Leaf	Two Star
Bergam's Green		Norseco
Muir		Johnny's
Tropicana		Johnny's
Red Express		Stokes
Tiede		Johnny's
Head	Pacesetter	Veseys
	NIZ 44402	Stokes
	Champlain	La Co-op Uniforce
	Buillon	Veseys
	Trophy	Veseys
	Ozark	Veseys
	Estival	La Co-op Uniforce
	Hochelaga	La Co-op Uniforce
	Caretaker	La Co-op Uniforce
Summertime	Stokes	
Specialty	Breen	Johnny's
	Truchas	Johnny's
	Amaze	Veseys
	Fusion	Orsetti

Seed source indicates where seed was obtained for the trial; not necessarily the exclusive source.

Table 2. Romaine Lettuce Cultivar 12" 2015, yield

Cultivar	Head weight (g)	Polar diameter (cm)	Equator diameter (cm)
Valley Heart	617	29	9
Salvius	543	26	11
Sparx	534	26	10
Stryker	516	26	11
Helvius	504	24	11
Fusion	488	24	9
Rome 59	455	24	10
Bidwell	433	24	9
Coastal Star	388	26	10
Mutiny	274	22	8
Arroyo	105	30	10
Grand Mean	441.6	25.9	9.6

Table 3. Lettuce Cultivar 12" Leaf 2015, yield

Cultivar	Head weight (g)	Polar diameter (cm)	Equator diameter (cm)
Two Star	422	21	11
Bergman's	379	19	9
Muir	335	12	12
Tropicana	330	18	10
Red Express	239	17	8
Tiede	200	15	8
Grand Mean	317.0	16.9	9.6

Table 4. Lettuce Cultivar 14" Head 2015, yield

Cultivar	Head weight (g)	Polar diameter (cm)	Equator diameter (cm)
Pacesetter	679	14	15
NIZ 44402	669	14	15
Champlain	638	12	13
Buillon	626	15	14
Trophy	601	14	14
Ozark	588	13	14
Estival	584	13	14
Hochelaga	581	13	13
Caretaker	573	13	14
Summertime	555	13	14
Grand Mean	609.3	13.4	14.0

Table 5. Lettuce Cultivar 6" Romaine 2015, yield

Cultivar	Head weight (g)	Polar diameter (cm)	Equator diameter (cm)
Stryker	348	25	8
Coastal Star	329	25	8
Ridgeline	318	29	8
Valley Heart	313	27	7
Sparx	311	25	8
Salvius	295	27	8
Helvius	290	22	8
Bidwell	274	23	7
Arroyo	273	24	6
Rome 59	254	23	8
Mutiny	236	22	6
Grand Mean	294.6	24.7	7.5

Table 6. Lettuce Cultivar 6" Specialty 2015, yield

Cultivar	Head weight (g)	Polar diameter (cm)	Equator diameter (cm)
Breen	162	15	7
Truchas	124	15	6
Amaze	124	13	6
Grand Mean	136.6	14.3	6.3

Table 7. Lettuce Cultivar 12" Romaine 2015, quality

Attribute Ratings ^z							
Cultivar	Appearance	Ext. Color	Rib Size	Size Uniform	Overall Quality	Tipburn Severity Rating	% Heads with Tipburn
Valley Heart	3	4	4	4	3	2	20
Salvius	4	4	4	4	4	5	0
Sparx	4	4	3	4	4	5	0
Stryker	4	4	3	3	4	5	0
Helvius	4	4	3	4	4	5	0
Fusion	4	4	3	3	3	5	3
Rome 59	3	3	3	3	4	5	0
Bidwell	4	3	3	4	4	5	0
Coastal Star	3	3	3	4	3	5	0
Mutiny	3	3	3	3	3	5	0
Arroyo	4	4	3	3	4	4	0
Grand Mean	3.6	3.7	3.3	3.5	3.6	4.6	11.1

^z Ratings of 1 - 5 with 5 = most desirable and 3 = average; Tipburn severity of 5 = no tipburn, 4 = a trace, 3 = unmarketable

Table 8. Lettuce Cultivar 12" Leaf 2015, qualityAttribute Ratings^z

Cultivar	Appearance	Ext. Color	Rib Size	Size Uniform	Overall Quality	Tipburn Severity Rating	% Heads with Tipburn
Two Star	4	3	3	3	4	5	0
Bergman's Green	4	3	3	3	4	5	0
Muir	4	3	4	3	4	5	0
Tropicana	3	3	3	3	3	5	0
Red Express	3	4	3	3	3	5	0
Tiede	4	4	4	3	4	5	0
Grand Mean	3.5	3.3	3.3	3.2	3.4	5.0	0

^z Ratings of 1 - 5 with 5 = most desirable and 3 = average; Tipburn severity of 5 = no tipburn, 4 = a trace, 3 = unmarketable

Table 9. Lettuce Cultivar 14" Head 2015, qualityAttribute Ratings^z

Cultivar	Appearance	Ext. Color	Rib Size	Size Uniform	Overall Quality	Tipburn Severity Rating	% Heads with Tipburn
Pacesetter	3	4	3	4	4	5	3
NIZ 44402	4	4	4	4	4	5	7
Champlain	4	4	3	4	4	5	1
Buillon	4	4	4	4	4	5	6
Trophy	4	4	3	3	4	5	6
Ozark	4	3	3	3	3	5	8
Estival	4	4	3	4	4	5	8
Hochelaga	3	4	3	4	4	5	3
Caretaker	4	4	4	3	4	5	0
Summertime	4	4	4	4	4	5	8
Grand Mean	3.6	3.5	3.3	3.5	3.6	5.0	4.9

^z Ratings of 1 - 5 with 5 = most desirable and 3 = average; Tipburn severity of 5 = no tipburn, 4 = a trace, 3 = unmarketable

Table 10. Lettuce Cultivar 6" Romaine 2015, quality

Attribute Ratings ^z							
Cultivar	Appearance	Ext. Color	Rib Size	Size Uniform	Overall Quality	Tipburn Severity Rating	% Heads with Tipburn
Stryker	3	4	3	4	3	5	0
Coastal Star	3	4	3	3	3	5	17
Ridgeline	3	3	4	3	3	5	0
Valley Heart	3	4	4	3	3	5	0
Sparx	3	4	3	3	3	5	0
Salvius	4	4	3	3	4	5	0
Helvius	3	3	3	3	3	5	0
Bidwell	3	3	3	3	3	5	7
Arroyo	3	4	3	3	3	5	0
Rome 59	3	3	3	3	3	5	15
Mutiny	4	4	3	4	4	4	25
Grand Mean	3.2	3.5	3.2	3.2	3.1	4.8	5.7

^z Ratings of 1 - 5 with 5 = most desirable and 3 = average; Tipburn severity of 5 = no tipburn, 4 = a trace, 3 = unmarketable

Table 11. Lettuce Cultivar 6" Specialty 2015, quality

Attribute Ratings ^z							
Cultivar	Appearance	Ext. Color	Rib Size	Size Uniform	Overall Quality	Tipburn Severity Rating	% Heads with Tipburn
Breen	4	4	4	4	4	5	0
Truchas	4	4	4	4	4	5	0
Amaze	4	4	4	3	4	5	0
Grand Mean	3.8	4.0	4.0	3.7	4.0	5.0	0.0

^z Ratings of 1 - 5 with 5 = most desirable and 3 = average; Tipburn severity of 5 = no tipburn, 4 = a trace, 3 = unmarketable