



Potato Variety Evaluation in Quebec

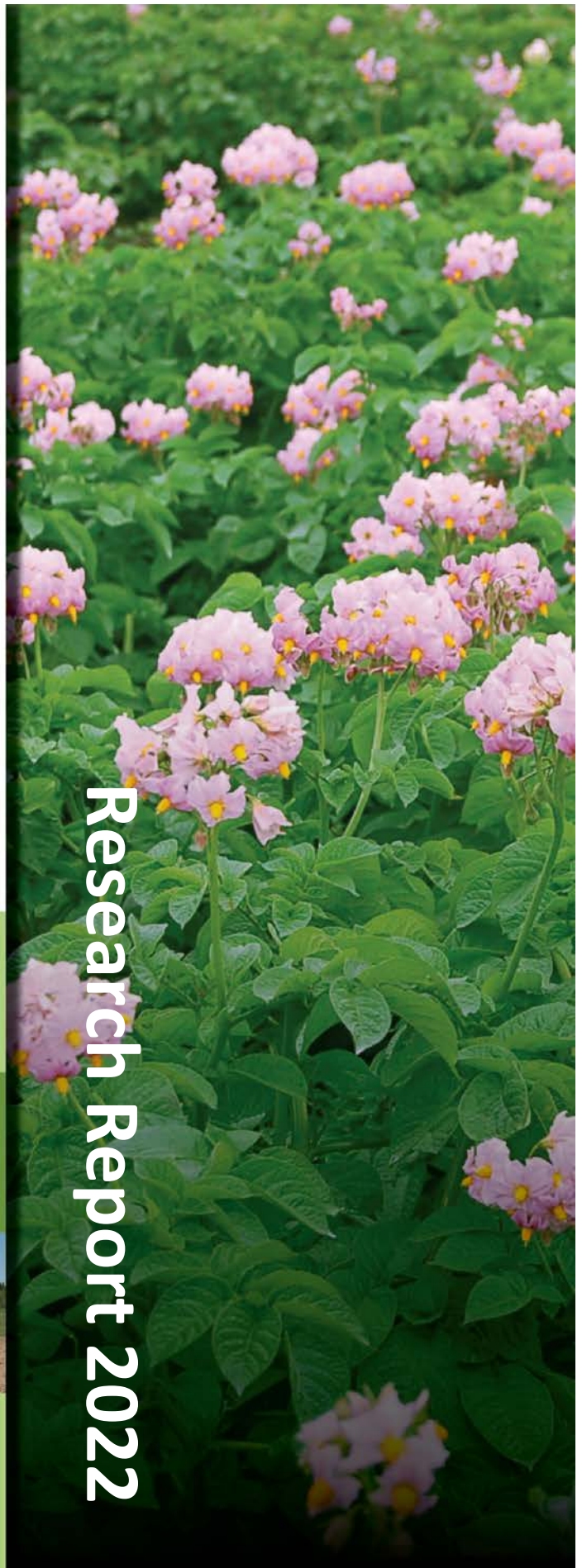
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1. OBJECTIVES

- Gather information on the agronomic performance of new potato genotypes.
- Collect information on external and internal tuber quality of new potato genotypes.
- Collect information on cooking quality of new potato genotypes.

2. METHODOLOGY

2.1. Sites and plant material description

The trials took place in Ste-Croix near Quebec City and Lanoraie, near Montreal. The plots were established in a sandy loam soil for both sites.

The trial included seven (7) potato clones and varieties from the Accelerated Release Program (AR) from Fredericton and Lethbridge research stations of Agriculture and Agri-Food Canada (AAFC), fifteen (15) from the Quebec Potato Research Consortium program, ten (10) genotypes from the Progest 2001 breeding program and four (4) clones and varieties from various additional national and international programs. The varieties and clones were divided in five (5) sub-trials. The five categories were: white round, yellow flesh, long, red skin and specialities. Known varieties (15), chosen for their special characteristics, were used as controls for each category (identified as (C) in Table I).

Clones and varieties included in this trial were chosen for various reasons. Most of QP clones were chosen for their multiple resistances (nematodes, PVY and late blight), while the majority of AG clones were selected to meet the growing consumer's demand for specialties potatoes. We also found a good selection of yellow flesh and red potatoes, also a market trend.

With the control varieties, a total of 51 genotypes were tested in this trial. A list of all the genotypes evaluated is presented at Table I.



Table I. List of genotypes evaluated in each category

White Round	Yellow flesh	Long	Red	Specialities
Alliston	Colomba	AG1424.11	AG1404.09	AG1405.15
Envol (C)	Confederation	Alta Cloud	AG1533	AG1425.11
FV16324-08	Fabula	Campagna (C)	AG1534	Marispeer (C)
Mystère (C)	Keuka Gold (C)	F14021	AG1535	QP12145.02
Nougat	QP12081.11	Goldrush (C)	AG1540	Roselys (C)
QP12056.16	Vivaldi (C)	QP12115.03	AR2018-08	
QP12058.23	Yukon Gold (C)	QP13094.03	AR2018-09	
QP13031.01		QP13116.15	Chieftain (C)	
QP13099.04		VF14016	DR Chieftain (C)	
QP13127.14			F14119	
Snowden (C)			Norland (C)	
SP 326			QP12058.36	
Superior (C)			QP12058.45	
			QP12058.48	
			QP12058.62	
			QP13071.28	
			Viking (C)	

2.2. Experimental design

The experiment was conducted in a randomized complete block design with three replications. Plots with an area of 4.12 m² consisted of one row of 4.5 m spaced at 0.915 m.

2.3. Cultural operations

Plantation in Ste-Croix was done on May 20th and in Lanoraie on May 25th. Rows were open and fertilizer was applied using agricultural equipment. Potato tubers were hand planted at every 30 cm with a ruler (Figure 1). Rows were closed mechanically with disks after a simultaneous spraying of an insecticide and a fungicide on the tubers. The harvesting of experimental plots was done using a one row harvester (Checchi & Magli SP 50V) on September 30th in Lanoraie and September 25th in Ste-Croix (Figure 2).

All agricultural operations performed on experimental plots were conducted similarly to what is done by commercial growers.





Figure 1. Plantation in Ste-Croix





Figure 2. Harvest in Ste-Croix



2.4. Measured parameters

Throughout the season, plant development was monitored. This included emergence, plant growth, flowering and senescence.

In the post-harvest evaluation, tubers were sized, using a potato-grading machine, into five size categories (Figure 3):

- Creamer: less than 1 ½ in. (38 mm)
- Small: 1 ½ in. to 2 ¼ in. (57 mm)
- Canada No. 1: 2 ¼ in. to 2 ¾ in. (70 mm)
- Chef: 2 ¾ in. to 4 ½ in. (114 mm)
- Jumbo: greater than 4 ½ in

Tubers normally rejected by the industry (green, misshapen, cracked and rotten) were removed manually. The quantity and weight of the rejected tubers were recorded.

For external quality, the index of rhizoctonia and scab was determined using the same evaluation key used by the Canadian Food Inspection Agency (CFIA) (Figure 4). This key includes five categories based on the percentage of disease coverage, 0 (0%) 1 (1%), 2 (1-5%), 3 (5-10%) and 4 (> 10%). For each plot, ten medium-sized tubers were randomly selected and used to determine the index of rhizoctonia and scab. Internal quality, including hollow heart, brown center, as well as vascular ring discoloration, was examined by cutting open a sample of 10 randomly selected tubers.

The appearance and uniformity of the tubers were scored according to predefined scales. For appearance, a rating from 1 to 9 was given, 1 corresponding to very unattractive potatoes and 9 to very attractive potatoes. As for uniformity, it was evaluated using a scale of 1 to 5, with 1 for tubers showing very little uniformity and 5 very uniform.

The specific gravity of all potato plots was measured (Figure 5). To do this, a sample of potatoes was weighed in air and noted. Then, the same sample was weighed in water and noted. The specific gravity was then calculated according to the following formula: weight in air / (weight in air – weight in water).

The genotypes in the Ste-Croix trial were evaluated for their chip and french fry aptitude (Figures 6 and 7). For potato chip testing (color), a composite sample of three replications was



tested at the Progest 2001 laboratory on January 6th. For potato chip color, a chart from the Snack Food Association (Snack Food Association Standards Reference Color Chart for Potato Chips) was used. Value 1 means that the chips are white, while 6 indicates that they are dark brown. Each score, from 1 to 6, has an equivalent value obtained with an Agtron:

- 1 : >88
- 2 : 75-88
- 3 : 56-75
- 4 : 45-56
- 5 : 30-45
- 6 : <30

French fry color was measured using the *Color Standards for Frozen French Fried Potatoes* from the USDA. This chart illustrates values ranging from 000 to 4, 000 being very white fries and 4 for dark brown fries.

Statistical analysis, *using Statistix 10.0* program, was used for the yield, as well as the internal and external quality for the two sites.



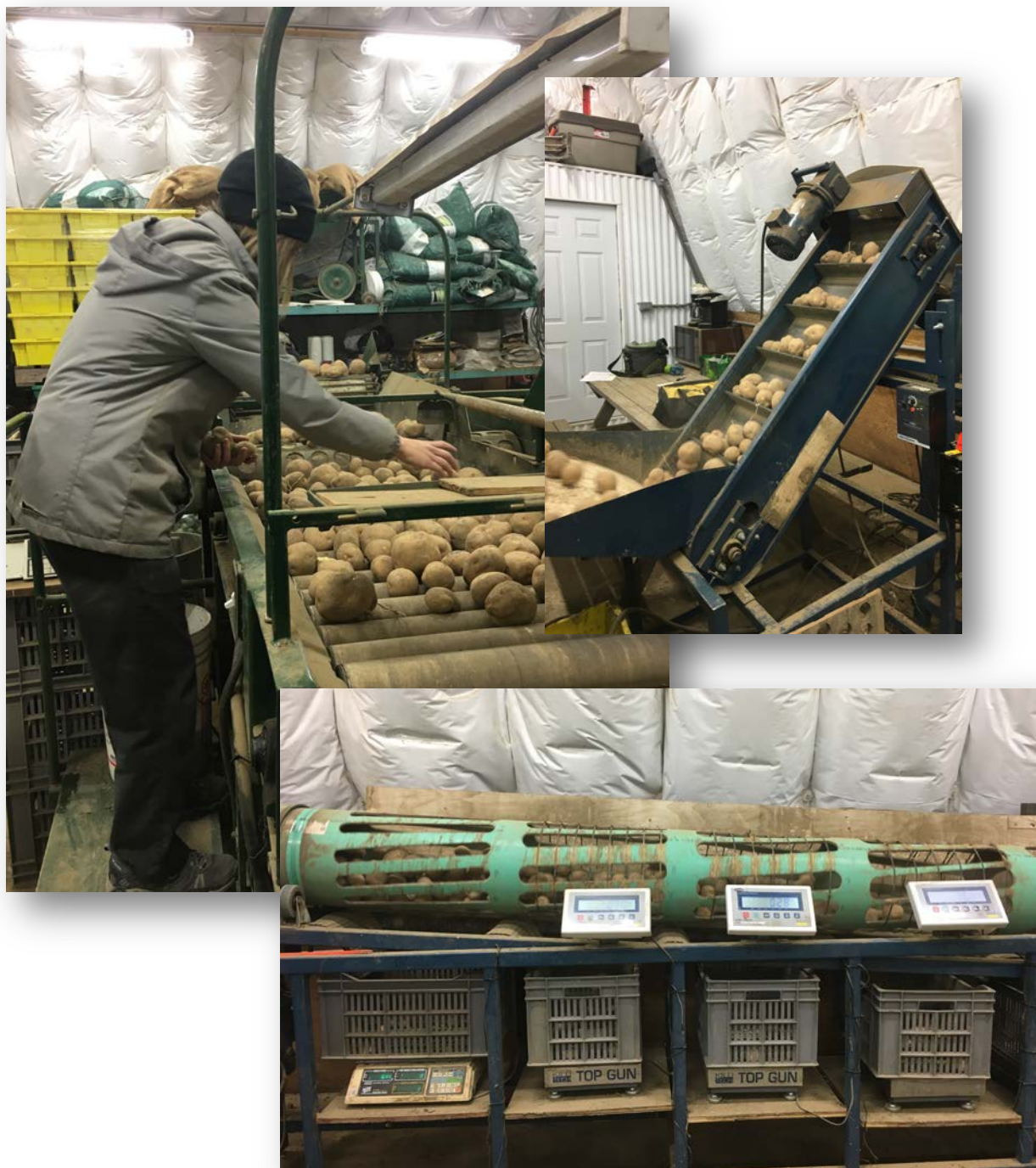


Figure 3. Potato grading





Figure 4. External and internal quality evaluation





Figure 5. Specific gravity evaluation





Figure 6. Tuber slicing





Figure 7. Chips cooking



3. RESULTS

3.1. White round potatoes

3.1.1. Ste-Croix

- Three genotypes, namely QP12056.16, QP13127.14 and Nougat, gave a total yield higher than the 4 control varieties (Table II).
- Only the clone QP13099.04 (314 cwt/a) generated a total yield significantly lower ($P < 0.05$) than the number one clone QP12056.16 (510 cwt/a).
- The clone FV16324-08 generated the highest yield for both creamer and small categories.
- As observed in 2020, the clone QP13099.04 generated an important number of downgraded tubers (10 % of its total yield), mostly because of misshapen tubers.
- Internal quality was good for most of the genotypes, except for the clone QP13031.01 showing 7 % of brown center (Table III).
- Appearance and uniformity scores were similar for all the varieties and clones in this category.
- Specific gravity was high for only 3 genotypes, with a value greater than 1.086. For the processing market (chips and fries), the combination of a high specific gravity and a low concentration of reducing sugars in potato tubers helps give chips and fries a desired texture and a pale color considered attractive. Also, a high specific gravity avoids high oil consumption during cooking.



Table II. Yield of genotypes in the “white round potatoes” category in Ste-Croix

Genotype	Total (cwt/a)	Creamer <1½ " (cwt/a)	Small 1½-2¼ " (cwt/a)	Canada No 1 2¼-2¾ " (cwt/a)	Chef 2¾-4½ " (cwt/a)	Downgraded (cwt/a)
QP12056.16	509.7 a	6.0 cd	71.9 def	286.2 a	144.7 abc	0.9 c
QP13127.14	472.0 ab	5.3 cd	52.1 ef	241.9 ab	167.1 abc	5.7 c
Nougat	471.1 ab	6.1 cd	90.5 cde	264.1 ab	109.5 abcd	0.9 c
Superior (C)	459.3 ab	5.9 cd	52.6 ef	196.1 abcd	193.1 ab	11.7 bc
Alliston	428.2 ab	10.0 bcd	106.5 bcd	220.5 abc	71.8 bcd	19.5 b
Mystère (C)	421.1 ab	8.3 cd	86.3 cde	240.0 ab	74.5 bcd	12.0 bc
QP13031.01	407.7 ab	6.0 cd	65.4 def	182.4 abcd	146.1 abc	7.8 bc
Snowden (C)	402.1 ab	13.1 bc	120.9 bc	216.7 abc	51.4 cd	0.0 c
SP326	374.2 ab	4.8 cd	36.7 f	183.1 abcd	147.3 abc	2.4 c
FV16324-08	360.2 ab	53.8 a	201.1 a	104.8 d	0.0 d	0.4 c
QP12058.23	351.5 ab	18.0 b	154.7 ab	177.6 bcd	0.0 d	1.3 c
Envol (C)	346.0 ab	1.9 d	28.4 f	98.6 d	207.8 a	9.3 bc
QP13099.04	314.1 b	2.7 d	48.4 ef	122.7 cd	107.9 abcd	32.5 a

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

Table III. Quality of the genotypes in the “white round potatoes” category in Ste-Croix

Genotype	Hollow Heart (%)	Brown Center (%)	Vascular Ring (%)	Scab (index) 0-15	Rhizoctonia (index) 0-15	Appearance (1-9)	Uniformity (1-5)	Specific gravity
QP12056.16	0.0 a	0.0 a	0.0 a	0.00 b	0.0 a	6.0 ab	3.5 ab	1.091 a
QP13127.14	0.0 a	0.0 a	0.0 a	0.03 b	0.0 a	6.7 a	3.7 ab	1.086 ab
Nougat	0.0 a	0.0 a	3.3 a	0.07 b	0.0 a	6.8 a	3.6 ab	1.072 ab
Superior (C)	0.0 a	0.0 a	0.0 a	0.00 b	0.0 a	6.1 ab	3.1 ab	1.084 ab
Alliston	0.0 a	0.0 a	0.0 a	0.00 b	0.0 a	6.8 a	3.6 ab	1.069 ab
Mystère (C)	0.0 a	0.0 a	0.0 a	0.00 b	0.0 a	6.2 ab	3.2 ab	1.083 ab
QP13031.01	0.0 a	6.7 a	0.0 a	0.03 b	0.0 a	6.0 ab	3.1 ab	1.082 ab
Snowden (C)	0.0 a	0.0 a	0.0 a	0.00 b	0.0 a	6.0 ab	3.5 ab	1.084 ab
SP326	0.0 a	0.0 a	0.0 a	0.00 b	0.0 a	6.0 ab	3.0 ab	1.086 ab
FV16324-08	0.0 a	0.0 a	0.0 a	0.00 b	0.0 a	6.5 a	3.8 a	1.080 ab
QP12058.23	0.0 a	0.0 a	0.0 a	0.00 b	0.0 a	6.3 a	3.5 ab	1.084 ab
Envol (C)	0.0 a	3.3 a	0.0 a	0.00 b	0.0 a	6.2 ab	3.1 ab	1.077 ab
QP13099.04	3.3 a	3.3 a	0.0 a	1.03 a	0.0 a	5.2 b	2.6 b	1.065 b

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test



3.1.2. Lanoraie

- Like observed in Ste-Croix, the clone QP12056.16 gave the highest total yield with 697 cwt/a (Table IV). The clone QP13127.14, number 2 in terms of total yield in Ste-Croix, also generated an exceptional yield in Lanoraie with 613 cwt/a.
- As observed in Ste-Croix, the clone QP13099.04 generated an important number of downgraded tubers (9 % of its total yield), mostly because of growth cracks and misshapen.
- Like in Ste-Croix, the clone FV16324-08 generated high yield for both creamer and small categories.
- The clone SP326 show an important internal defect with 27 % of its tubers affected by the hollow heart (Table V). This internal disorder is often associated with a period of stress, especially water and heat stress.
- A high common scab index was obtained for the clone QP13099.04 with a value of 4.8 (on 15).
- Specific gravity is below 1.086 for every genotype, except for the QP12056.16 (1.095) which also generated a high value in Ste-Croix.



Table IV. Yield of genotypes in the “white round potatoes” category in Lanoraie

Genotype	Total (cwt/a)	Creamer <1½ " (cwt/a)	Small 1½-2¼ " (cwt/a)	Canada No 1 2¼-2¾ " (cwt/a)	Chef 2¾-4½ " (cwt/a)	Downgraded (cwt/a)
QP12056.16	697.2 a	22.8 b	111.8 abc	232.9 abc	317.7 a	12.1 abc
QP12058.23	623.9 ab	50.5 a	177.3 a	255.1 ab	138.0 bc	2.9 bc
QP13127.14	612.6 abc	22.1 b	87.5 bcd	328.6 a	153.1 b	21.4 ab
SP326	499.9 abcd	14.0 b	70.5 bcd	130.0 bcd	278.1 a	7.4 abc
Superior (C)	415.0 bcde	9.4 b	62.4 cd	160.0 bcd	177.0 b	6.2 abc
Snowden (C)	408.9 cde	30.3 ab	140.9 ab	180.8 abcd	54.0 cd	2.9 bc
Mystère (C)	395.8 de	21.0 b	94.3 bcd	164.0 bcd	116.5 bc	0.0 c
FV16324-08	387.7 def	49.8 a	171.1 a	156.4 bcd	7.4 d	3.0 bc
QP13031.01	364.0 def	6.5 b	66.9 cd	191.2 abcd	86.9 bcd	12.6 abc
QP13099.04	267.9 efg	6.0 b	37.1 d	103.1 bcd	96.5 bcd	25.2 a
Alliston	221.9 efg	20.8 b	94.3 bcd	82.3 cd	18.3 d	6.2 abc
Envol (C)	180.2 fg	13.4 b	62.4 cd	86.5 cd	16.9 d	1.0 c
Nougat	141.8 g	13.6 b	60.2 cd	54.7 d	12.9 d	0.3 c

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

Table V. Quality of the genotypes in the “white round potatoes” category in Lanoraie

Genotype	Hollow Heart (%)	Brown Center (%)	Vascular Ring (%)	Scab (index) 0-15	Rhizoctonia (index) 0-15	Appearance (1-9)	Uniformity (1-5)	Specific gravity
QP12056.16	0.0 b	0.0 a	0.0 a	0.17 b	0.00 a	6.3 ab	3.7 a	1.095 a
QP12058.23	0.0 b	0.0 a	0.0 a	1.53 b	0.00 a	6.5 a	3.3 abc	1.085 abc
QP13127.14	0.0 b	0.0 a	0.0 a	0.67 b	0.00 a	6.3 ab	3.3 abc	1.072 cd
SP326	26.7 a	0.0 a	3.3 a	0.37 b	0.43 a	6.5 a	3.5 abc	1.087 ab
Superior (C)	0.0 b	0.0 a	13.3 a	0.37 b	0.00 a	6.2 ab	3.2 abc	1.072 cd
Snowden (C)	0.0 b	0.0 a	0.0 a	0.87 b	0.03 a	6.0 ab	3.3 abc	1.080 bc
Mystère (C)	0.0 b	0.0 a	3.3 a	0.47 b	0.03 a	6.3 ab	3.3 abc	1.059 d
FV16324-08	0.0 b	0.0 a	0.0 a	2.00 ab	0.00 a	6.8 a	3.5 abc	1.072 cd
QP13031.01	0.0 b	0.0 a	3.3 a	1.40 b	0.00 a	6.6 a	3.6 ab	1.072 cd
QP13099.04	0.0 b	0.0 a	0.0 a	4.77 a	0.00 a	6.2 ab	3.2 abc	1.066 d
Alliston	0.0 b	0.0 a	6.7 a	2.80 ab	0.00 a	6.2 ab	3.2 abc	1.060 d
Envol (C)	0.0 b	0.0 a	0.0 a	1.30 b	0.00 a	6.0 ab	3.0 bc	1.062 d
Nougat	0.0 b	0.0 a	10.0 a	3.17 ab	0.00 a	5.5 b	2.8 c	1.057 d

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test



3.2. Yellow flesh potatoes

3.2.1. Ste-Croix

- Good total yield was obtained for all the clones and varieties in the “yellow flesh” category with values of 453 cwt/ac and up (Table VI). Fabula and Colomba generated a higher yield than the 3 control varieties with respectively 607 cwt/a and 579 cwt/a.
- External and internal quality was exceptional for all the genotypes with no defect observed (Table VII).
- With no significant difference among the genotypes, good score was attributed for the appearance and uniformity for most of the group.
- Specific gravity was low for all the genotypes.

Table VI. Yield of genotypes in the “yellow flesh potatoes” category in Ste-Croix

Genotype	Total (cwt/a)	Creamer <1½ " (cwt/a)	Small 1½-2¼ " (cwt/a)	Canada No 1 2¼-2¾ " (cwt/a)	Chef 2¾-4½ " (cwt/a)	Downgraded (cwt/a)
Fabula	607.4 a	3.5 b	29.5 a	201.3 a	361.1 a	12.1 a
Colomba	579.3 ab	9.1 b	145.6 a	269.6 a	136.2 bc	18.9 a
Vivaldi (C)	554.3 abc	12.6 ab	106.4 a	308.4 a	113.2 bc	13.6 a
Keuka Gold (C)	504.4 abc	4.9 b	67.9 a	196.8 a	220.2 ab	14.7 a
Confederation	488.4 abc	8.1 b	118.6 a	218.6 a	126.9 bc	16.3 a
Yukon Gold (C)	473.3 bc	6.4 b	62.7 a	202.2 a	181.4 b	20.7 a
QP12081.11	453.1 c	23.0 a	156.7 a	240.6 a	0.0 c	32.9 a

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test



Table VII. Quality of the genotypes in the “yellow flesh potatoes” category in Ste-Croix

Genotype	Hollow Heart (%)	Brown Center (%)	Vascular Ring (%)	Scab (index) 0-15	Rhizoctonia (index) 0-15	Appearance (1-9)	Uniformity (1-5)	Specific gravity
Fabula	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	6.3 a	3.3 a	1.055 c
Colomba	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	7.0 a	4.0 a	1.054 c
Vivaldi (C)	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	6.5 a	3.5 a	1.062 bc
Keuka Gold (C)	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	7.0 a	4.0 a	1.077 a
Confederation	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	6.8 a	3.8 a	1.072 ab
Yukon Gold (C)	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	7.0 a	3.9 a	1.081 a
QP12081.11	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	6.5 a	3.7 a	1.071 ab

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

3.2.2. Lanoraie

- As observed in Ste-Croix, Fabula generated the highest total yield with 686 cwt/a (Table VIII). This variety also gave a significantly highest yield in the “chef” category with 449 cwt/a. Confederation also gave a total yield higher than the 3 control varieties (641 cwt/a).
- Confederation generated an important amount of downgraded tubers (13 % of its total yield), mostly because of misshapen tubers.
- The clone QP12081.11 showed 7 % the hollow heart (Table IX).
- Both Confederation and Yukon Gold have demonstrated a susceptibility to common scab with respectively an index of 5.8 and 6.7.
- Specific gravity was very low for all the varieties and clones.



Table VIII. Yield of genotypes in the “yellow flesh potatoes” category in Lanoraie

Genotype	Total (cwt/a)	Creamer <1½ " (cwt/a)	Small 1½-2¼ " (cwt/a)	Canada No 1 2¼-2¾ " (cwt/a)	Chef 2¾-4½ " (cwt/a)	Downgraded (cwt/a)
Fabula	685.6 a	5.8 d	17.8 c	154.7 bc	448.9 a	58.4 ab
Confederation	640.5 ab	58.4 a	172.6 a	227.6 ab	95.9 bcd	86.2 a
Vivaldi (C)	574.7 ab	35.7 abc	79.6 bc	260.3 a	185.1 bc	14.0 c
Colomba	557.7 ab	28.4 bcd	124.6 ab	174.7 bc	202.2 b	27.8 bc
Keuka Gold (C)	517.2 b	13.3 cd	78.1 bc	205.2 ab	205.3 b	15.2 c
QP12081.11	341.3 c	50.6 ab	114.1 ab	150.3 bc	0.0 d	26.2 bc
Yukon Gold (C)	292.2 c	15.5 cd	78.7 bc	117.5 c	71.9 cd	8.6 c

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

Table IX. Quality of the genotypes in the “yellow flesh potatoes” category in Lanoraie

Genotype	Hollow Heart (%)	Brown Center (%)	Vascular Ring (%)	Scab (index) 0-15	Rhizoctonia (index) 0-15	Appearance (1-9)	Uniformity (1-5)	Specific gravity
Fabula	0.0 b	0.0 a	0.0 a	2.30 bc	0.0 a	6.7 ab	3.3 abc	1.052 c
Confederation	0.0 b	0.0 a	20.0 a	5.83 a	0.0 a	5.2 d	3.0 c	1.054 bc
Vivaldi (C)	0.0 b	0.0 a	0.0 a	5.70 ab	0.0 a	6.2 bc	3.2 bc	1.051 c
Colomba	0.0 b	0.0 a	0.0 a	1.07 c	0.0 a	6.8 ab	3.8 a	1.051 c
Keuka Gold (C)	0.0 b	0.0 a	0.0 a	1.17 c	0.0 a	7.0 a	3.7 ab	1.067 a
QP12081.11	6.7 a	0.0 a	6.7 a	3.90 abc	0.0 a	5.7 cd	3.0 c	1.058 bc
Yukon Gold (C)	0.0 b	0.0 a	0.0 a	6.73 a	0.0 a	5.3 d	3.0 c	1.062 ab

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

3.3. Long potatoes

3.3.1. Ste-Croix

- High total yield was obtained for all the genotypes in the “long potatoes” category with values higher than 400 cwt/a (Table X). The clones F14021 (601 cwt/a) and QP12115.03 (585 cwt/a) generated a total yield higher than the control varieties Campagna and Goldrush.
- Goldrush generated many misshapen tubers with 49 cwt/a (10 % of its total yield).



- External and internal quality was good for all genotypes in Ste-Croix (Table XI). Goldrush received an index of 3 (on 15) for the rhizoctonia.
- Appearance and uniformity were similar for all genotypes.
- VF14016 generated the highest specific gravity with a value of 1.091.

Table X. Yield of genotypes in the “long potatoes” category in Ste-Croix

Genotype	Total (cwt/a)	Creamer <1½ " (cwt/a)	Small 1½-2 " (cwt/a)	Canada No 1 2-2¾ " (cwt/a)	Chef 2¾-4½ " (cwt/a)	Downgraded (cwt/a)
F14021	601.0 a	15.7 b	70.6 abc	285.0 abc	190.6 ab	39.1 ab
QP12115.03	584.6 ab	14.6 b	66.0 abc	381.8 a	102.7 bcd	19.6 abc
Campagna (C)	558.6 abc	9.4 bc	57.5 bc	300.3 abc	171.5 ab	19.9 abc
QP13116.15	477.3 bcd	19.4 ab	109.9 ab	332.3 ab	4.6 d	11.1 bc
Alta Cloud	476.5 cd	7.7 bc	61.1 bc	301.1 abc	99.3 bcd	7.3 c
Goldrush (C)	475.0 cd	10.9 bc	59.1 bc	203.6 bc	152.5 ab	48.9 a
QP13094.03	463.7 cd	1.3 c	14.6 c	176.5 c	246.5 a	24.8 abc
VF14016	432.7 d	8.7 bc	36.5 c	211.0 bc	142.1 abc	34.4 abc
AG1424.11	398.0 d	30.0 a	129.4 a	212.1 bc	17.2 cd	9.3 bc

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

Table XI. Quality of the genotypes in the “long potatoes” category in Ste-Croix

Genotype	Hollow Heart (%)	Brown Center (%)	Vascular Ring (%)	Scab (index) 0-15	Rhizoctonia (index) 0-15	Appearance (1-9)	Uniformity (1-5)	Specific gravity
F14021	0.0 a	0.0 a	0.0 a	0.00 a	0.00 b	6.3 ab	3.3 a	1.077 bcd
QP12115.03	0.0 a	0.0 a	0.0 a	0.00 a	0.00 b	6.5 ab	3.5 a	1.081 abcd
Campagna (C)	0.0 a	0.0 a	0.0 a	0.00 a	0.00 b	6.5 ab	3.5 a	1.070 d
QP13116.15	0.0 a	0.0 a	0.0 a	0.00 a	0.00 b	6.8 a	3.8 a	1.075 bcd
Alta Cloud	0.0 a	0.0 a	0.0 a	0.00 a	0.00 b	6.0 b	3.0 a	1.083 abc
Goldrush (C)	0.0 a	0.0 a	3.3 a	0.00 a	3.03 a	6.0 b	3.2 a	1.073 cd
QP13094.03	0.0 a	0.0 a	0.0 a	0.03 a	0.0 b	6.3 ab	3.3 a	1.075 bcd
VF14016	0.0 a	0.0 a	0.0 a	0.00 a	0.0 b	6.2 ab	3.2 a	1.091 a
AG1424.11	0.0 a	0.0 a	0.0 a	0.20 a	0.0 b	6.0 b	3.2 a	1.085 ab

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test



3.3.2. Lanoraie

- Like in Ste-Croix, clones QP12115.03 and F14021 provided an excellent total yield with respectively 531 cwt/a and 466 cwt/a (Table XII). The genotype VF14016 also generated a yield higher than the control varieties Campagna and Goldrush.
- The clone QP12115.03 generated an important number of downgraded tubers (14 % of its total yield), mostly because of misshapen tubers and growth cracks.
- The genotypes VF14016 and Alta Cloud, showed an important internal defect with respectively 27 % and 17 % of their tubers affected by the hollow heart (Table XIII).
- No significant difference was observed among the genotypes regarding the external quality.
- Mostly intended for the processing market, the long-shaped potatoes should present a high specific gravity. However, no genotype reaches a specific gravity high enough for a processing purpose (> 1.086).

Table XII. Yield of genotypes in the “long potatoes” category in Lanoraie

Genotype	Total (cwt/a)	Creamer <1½ " (cwt/a)	Small 1½-2 " (cwt/a)	Canada No 1 2-2¾ " (cwt/a)	Chef 2¾-4½ " (cwt/a)	Downgraded (cwt/a)
QP12115.03	531.0 a	45.3 a	96.9 a	233.1 ab	80.7 abc	75.0 a
F14021	466.0 ab	22.1 bc	67.7 ab	215.9 ab	129.2 ab	31.1 ab
VF14016	446.8 ab	12.9 bc	31.5 b	205.8 ab	182.8 a	13.9 b
Campagna (C)	441.7 ab	6.8 c	45.5 ab	209.2 ab	150.3 ab	29.9 ab
QP13116.15	395.4 bc	13.3 bc	63.1 ab	249.5 a	63.1 bc	6.5 b
Alta Cloud	321.5 c	16.2 bc	62.7 ab	188.4 ab	52.0 bc	21.4 b
AG1424.11	314.7 c	25.8 b	81.7 ab	169.2 ab	4.5 c	14.3 b
Goldrush (C)	300.0 c	27.6 b	68.3 ab	153.9 b	45.8 bc	4.4 b
QP13094.03	296.2 c	13.1 bc	58.5 ab	149.9 b	72.9 bc	1.8 b

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test



Table XIII. Quality of the genotypes in the “long potatoes” category in Lanoraie

Genotype	Hollow Heart (%)	Brown Center (%)	Vascular Ring (%)	Scab (index) 0-15	Rhizoctonia (index) 0-15	Appearance (1-9)	Uniformity (1-5)	Specific gravity
QP12115.03	0.0 b	0.0 a	0.0 b	1.13 a	0.00 a	5.7 b	2.8 a	1.072 abc
F14021	3.3 ab	0.0 a	3.3 ab	2.67 a	0.00 a	6.0 ab	3.1 a	1.063 cd
VF14016	26.7 a	0.0 a	6.7 ab	1.50 a	0.00 a	6.5 ab	3.3 a	1.079 ab
Campagna (C)	0.0 b	0.0 a	0.0 b	0.00 a	0.00 a	6.6 a	3.2 a	1.061 cd
QP13116.15	3.3 ab	3.3 a	36.7 a	0.30 a	0.00 a	6.0 ab	2.9 a	1.064 cd
Alta Cloud	16.7 ab	3.3 a	23.3 ab	0.00 a	0.00 a	6.2 ab	2.9 a	1.082 a
AG1424.11	0.0 b	0.0 a	10.0 ab	0.90 a	0.00 a	6.5 ab	3.0 a	1.066 cd
Goldrush (C)	0.0 b	0.0 a	3.3 ab	0.00 a	0.20 a	6.2 ab	3.0 a	1.059 d
QP13094.03	3.3 ab	0.0 a	0.0 b	0.17 a	0.03 a	5.7 b	2.8 a	1.069 bcd

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

3.4. Red skin potatoes

3.4.1. Ste-Croix

- AG1540 gave the highest total yield with 623 cwt/a and exceed the control variety Chieftain (Table XIV). The clones AG1533 and AR2018-09 also surpass all the control varieties.
- Viking gave the highest yield in the “chef” category with 332 cwt/a (71 % of its total yield). This variety also generated 40 cwt/a of downgraded tubers (9 % of its total yield), mostly because of growth cracks and misshapen tubers.
- Hollow heart and brown center have been detected in the clone AG1404.09 with respectively 20 % and 33 % (Table XV).
- A rhizoctonia index of 5.87 was attributed to the clone AG1535.
- Like observed with the other categories, specific gravity is low for most of the clones and varieties.



Table XIV. Yield of genotypes in the “red skin potatoes” category in Ste-Croix

Genotype	Total (cwt/a)	Creamer <1½ " (cwt/a)	Small 1½-2¼ " (cwt/a)	Canada No 1 2¼-2¾ " (cwt/a)	Chef 2¾-4½ " (cwt/a)	Downgraded (cwt/a)
AG1540	622.5 a	14.0 abc	155.8 a	319.7 a	121.3 bcd	11.7 ab
AG1533	551.8 ab	15.2 abc	95.7 abc	244.6 abc	184.4 abc	11.9 ab
AR2018-09	540.4 abc	12.9 abcd	156.1 a	283.9 ab	80.7 cd	6.9 b
Chieftain (C)	523.5 abcd	8.6 bcd	113.5 abc	282.3 ab	116.1 bcd	3.0 b
AG1404.09	508.7 abcde	6.4 bcd	43.5 cd	195.8 bc	248.5 ab	14.5 ab
QP12058.36	504.6 abcde	21.9 a	127.9 ab	249.2 abc	91.1 cd	14.5 ab
AG1535	501.7 abcde	12.2 abcd	95.4 abc	250.1 abc	138.2 bcd	5.7 b
AG1534	486.2 abcde	13.3 abcd	120.6 ab	188.7 c	141.8 bcd	21.8 ab
QP12058.62	484.0 abcde	13.7 abc	125.3 ab	243.2 abc	93.0 bcd	8.8 b
QP12058.45	482.3 abcde	5.6 bcd	93.9 abc	229.4 abc	140.1 bcd	13.3 ab
F14119	479.6 abcde	8.8 bcd	117.3 ab	271.8 abc	81.9 cd	0.0 b
Viking (C)	469.6 bcde	1.9 d	11.3 d	83.3 d	332.8 a	40.3 a
Norland (C)	452.8 bcde	9.8 bcd	77.3 bcd	184.7 c	156.1 bcd	25.0 ab
DR Chieftain (C)	409.4 bcde	5.8 bcd	79.9 bcd	222.4 bc	89.2 cd	12.2 ab
QP13071.28	406.3 cde	4.7 cd	76.2 bcd	194.5 bc	113.6 bcd	17.2 ab
AR2018-08	392.2 de	17.2 ab	139.5 ab	202.0 bc	26.1 d	7.4 b
QP12058.48	378.5 e	5.9 bcd	110.3 abc	214.6 bc	46.6 cd	1.1 b

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test



Table XV. Quality of the genotypes in the “red skin potatoes” category in Ste-Croix

Genotype	Hollow Heart (%)	Brown Center (%)	Vascular Ring (%)	Scab (index) 0-15	Rhizoctonia (index) 0-15	Appearance (1-9)	Uniformity (1-5)	Specific gravity
AG1540	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	6.3 abc	3.5 b	1.064 cd
AG1533	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	6.2 abc	3.0 cd	1.063 cd
AR2018-09	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	6.3 abc	3.3 bc	1.080 abc
Chieftain (C)	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	6.0 abc	3.0 cd	1.070 bcd
AG1404.09	20.0 a	33.3 a	0.0 a	0.00 a	0.00 c	5.9 abc	3.0 cd	1.062 d
QP12058.36	0.0 b	0.0 b	0.0 a	0.00 a	0.03 c	6.0 abc	3.0 cd	1.078 abcd
AG1535	0.0 b	0.0 b	0.0 a	0.00 a	5.87 a	5.7 c	2.8 d	1.070 bcd
AG1534	0.0 b	3.3 b	0.0 a	0.00 a	0.00 c	6.6 a	3.5 b	1.067 cd
QP12058.62	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	6.2 abc	3.2 bcd	1.077 abcd
QP12058.45	0.0 b	0.0 b	0.0 a	0.07 a	0.07 c	6.2 abc	3.2 bcd	1.086 ab
F14119	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	6.5 ab	3.5 b	1.062 cd
Viking (C)	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	6.0 abc	3.0 cd	1.071 bcd
Norland (C)	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	5.8 bc	3.0 cd	1.068 bcd
DR Chieftain (C)	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	6.5 ab	4.0 a	1.069 bcd
QP13071.28	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	5.7 c	2.8 d	1.078 abcd
AR2018-08	0.0 b	0.0 b	0.0 a	0.00 a	1.03 b	6.0 abc	3.0 cd	1.069 bcd
QP12058.48	0.0 b	0.0 b	0.0 a	0.00 a	0.00 c	6.5 ab	3.5 b	1.090 a

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

3.4.2. Lanoraie

- Seven clones generated a total yield higher than the four control varieties in the “red skin potatoes” category in Lanoraie (Table XVI). As observed in Ste-Croix, AG1540 is one the clone that gave the highest yield.
- Viking, as noted in Ste-Croix, produced the higher yield in the category “chef” with 73 % of its total yield.
- The variety control Norland generated a high amount of downgraded potatoes mostly due to growth cracks on tubers.



- No significant difference was noted for the internal quality as well as the scab index (Table XVII). AG1535 received the highest index for the rhizoctonia (4.33) as observed in Ste-Croix.
- The specific gravity is low for all and no genotype reaches 1.086.

Table XVI. Yield of genotypes in the “red skin potatoes” category in Lanoraie

Genotype	Total (cwt/a)	Creamer <1½ " (cwt/a)	Small 1½-2¼ " (cwt/a)	Canada No 1 2¼-2¾ " (cwt/a)	Chef 2¾-4½ " (cwt/a)	Downgraded (cwt/a)
QP12058.36	547.4 a	33.4 ab	150.3 ab	265.0 a	83.0 cde	15.7 ab
AG1540	507.7 ab	15.8 ab	163.5 a	258.0 ab	57.5 de	12.9 ab
QP12058.62	490.4 abc	48.4 a	169.7 a	178.9 abcd	87.5 cde	5.9 ab
QP12058.45	490.1 abc	42.4 ab	77.3 cd	144.8 abcd	221.4 ab	4.3 ab
QP12058.48	447.3 abcd	14.7 ab	102.8 bcd	184.3 abcd	139.2 bcd	6.4 ab
AG1404.09	430.3 abcd	12.0 ab	70.3 de	121.4 cd	202.2 abc	24.4 ab
QP13071.28	402.2 abcd	18.5 ab	102.4 bcd	226.1 abc	42.6 de	12.6 ab
Viking (C)	386.3 abcd	3.1 b	18.9 e	67.3 d	283.2 a	13.7 ab
Chieftain (C)	337.9 abcd	12.9 ab	84.6 cd	110.3 cd	104.8 bcde	25.2 ab
AG1535	337.5 abcd	12.6 ab	86.1 cd	165.6 abcd	61.5 de	11.7 ab
AR2018-09	330.1 abcd	30.1 ab	134.1 abc	146.4 abcd	15.3 e	4.1 ab
AG1534	317.7 abcd	14.9 ab	80.4 cd	120.7 cd	91.4 cde	10.3 ab
AR2018-08	298.2 abcd	21.0 ab	118.3 abcd	130.8 bcd	25.7 de	2.3 ab
Norland (C)	272.4 bcd	13.4 ab	74.7 de	97.8 cd	57.6 de	29.1 a
DR Chieftain (C)	247.8 cd	7.8 ab	69.3 de	115.2 cd	53.4 de	2.1 b
F14119	241.8 cd	13.0 ab	76.2 d	95.2 cd	54.2 de	3.2 ab
AG1533	228.7 d	13.1 ab	73.1 de	86.9 d	45.5 de	10.2 ab

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test



Table XVII. Quality of the genotypes in the “red skin potatoes” category in Lanoraie

Genotype	Hollow Heart (%)	Brown Center (%)	Vascular Ring (%)	Scab (index) 0-15	Rhizoctonia (index) 0-15	Appearance (1-9)	Uniformity (1-5)	Specific gravity
QP12058.36	0.0 a	0.0 a	0.0 a	0.07 a	0.00 b	6.2 a	3.3 abcd	1.079 a
AG1540	0.0 a	0.0 a	0.0 a	0.17 a	0.00 b	6.3 a	3.5 abcd	1.061 cdef
QP12058.62	0.0 a	0.0 a	0.0 a	0.50 a	0.00 b	6.5 a	3.8 a	1.067 bc
QP12058.45	0.0 a	0.0 a	13.3 a	0.43 a	0.00 b	6.1 a	3.5 abcd	1.081 a
QP12058.48	0.0 a	0.0 a	3.3 a	0.83 a	0.00 b	6.6 a	3.7 abc	1.076 ab
AG1404.09	0.0 a	0.0 a	6.7 a	0.30 a	0.00 b	6.2 a	3.2 abcd	1.060 cdef
QP13071.28	0.0 a	0.0 a	13.3 a	0.23 a	0.00 b	6.3 a	3.3 abcd	1.062 cde
Viking (C)	0.0 a	0.0 a	10.0 a	0.00 a	0.00 b	6.0 a	3.0 bcd	1.061 cde
Chieftain (C)	0.0 a	0.0 a	10.0 a	0.17 a	0.00 b	5.8 a	2.9 cd	1.051 ef
AG1535	0.0 a	0.0 a	0.0 a	0.03 a	4.33 a	5.8 a	3.3 abcd	1.057 cdef
AR2018-09	0.0 a	0.0 a	6.7 a	0.70 a	0.00 b	6.2 a	3.2 abcd	1.064 cd
AG1534	0.0 a	0.0 a	3.3 a	0.07 a	0.00 b	6.5 a	3.5 abcd	1.050 ef
AR2018-08	0.0 a	0.0 a	0.0 a	0.03 a	0.40 b	6.0 a	3.0 bcd	1.058 cdef
Norland (C)	0.0 a	0.0 a	3.3 a	0.00 a	0.00 b	5.7 a	2.8 d	1.049 f
DR Chieftain (C)	0.0 a	0.0 a	3.3 a	0.00 a	0.00 b	6.2 a	3.8 ab	1.061 cde
F14119	0.0 a	0.0 a	3.3 a	0.23 a	0.00 b	6.2 a	3.5 abcd	1.053 def
AG1533	0.0 a	0.0 a	10.0 a	0.07 a	0.00 b	6.2 a	3.2 abcd	1.055 cdef

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

3.5. Specialities potatoes

3.5.1. Ste-Croix

- Both the control variety Roselys and the clone QP12145.02 obtained the highest total yield with 426 cwt/a. Roselys also gave the better yield in the “chef” category with 241 cwt/a (Table XVIII).
- Roselys produced an impressive number of downgraded tubers (16 % of its total yield), mostly because of growth cracks.
- Except for Marispeer that generated 20 % of brown center, all genotypes showed a good internal and external quality (Table XIX).



- The clone AG1405.15 obtained the highest specific gravity with 1.093.

Table XVIII. Yield of genotypes in the “specialties potatoes” category in Ste-Croix

Genotype	Total (cwt/a)	Creamer <1½ " (cwt/a)	Small 1½-2¼ " (cwt/a)	Canada No 1 2¼-2¾ " (cwt/a)	Chef 2¾-4½ " (cwt/a)	Downgraded (cwt/a)
Roselys (C)	426.1 a	3.7 b	22.1 c	91.3 d	240.9 a	68.2 a
QP12145.02	425.8 a	9.3 b	64.3 bc	334.1 a	14.0 b	4.2 ab
Marispeer (C)	376.8 ab	33.3 ab	97.8 ab	214.0 b	11.3 b	20.5 ab
AG1425.11	346.3 bc	11.2 ab	113.6 ab	185.6 bc	31.5 b	4.5 ab
AG1405.15	294.1 c	40.6 a	139.8 a	111.9 cd	0.0 b	1.7 b

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

Table XIX. Quality of the genotypes in the “specialties potatoes” category in Ste-Croix

Genotype	Hollow Heart (%)	Brown Center (%)	Vascular Ring (%)	Scab (index) 0-15	Rhizoctonia (index) 0-15	Appearance (1-9)	Uniformity (1-5)	Specific gravity
Roselys (C)	0.0 a	0.0 b	0.0 a	0.07 a	0.00 a	6.8 a	2.7 b	1.085 a
QP12145.02	0.0 a	0.0 b	0.0 a	0.10 a	0.00 a	6.7 a	3.7 a	1.083 a
Marispeer (C)	0.0 a	20.0 a	0.0 a	0.27 a	0.00 a	6.3 a	3.5 ab	1.082 a
AG1425.11	0.0 a	0.0 b	0.0 a	0.03 a	0.00 a	6.5 a	3.5 ab	1.087 a
AG1405.15	0.0 a	0.0 b	0.0 a	0.10 a	0.00 a	6.8 a	3.8 a	1.093 a

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

3.5.2. Lanoraie

- Like achieved in Ste-Croix, QP12145.02 and Roselys gave the greatest total yield in Lanoraie (Table XX). Roselys also gave the highest yield in the “chef” category, also attained in Ste-Croix.
- Roselys produced, like in Ste-Croix, a lot of downgraded tubers (16 % of its total yield), mostly because of growth cracks. This variety also generated 10 % of hollow heart and a scab index of 3.



- Low specific gravity was noted for all genotypes.

Table XX. Yield of genotypes in the “specialties potatoes” category in Lanoraie

Genotype	Total (cwt/a)	Creamer <1½ " (cwt/a)	Small 1½-2¼ " (cwt/a)	Canada No 1 2¼-2¾ " (cwt/a)	Chef 2¾-4½ " (cwt/a)	Downgraded (cwt/a)
QP12145.02	439.6 a	11.7 a	48.5 a	213.8 a	130.5 ab	35.0 ab
Roselys (C)	402.3 ab	14.3 b	54.7 a	80.0 b	177.0 a	66.0 a
AG1405.15	301.1 ab	39.7 a	111.8 a	141.7 ab	2.2 c	5.8 b
AG1425.11	281.7 b	14.2 b	87.9 a	163.3 ab	7.9 bc	8.3 b
Marispeer (C)	271.6 b	28.6 ab	75.5 a	142.2 ab	8.7 bc	16.6 b

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

Table XXI. Quality of the genotypes in the “specialties potatoes” category in Lanoraie

Genotype	Hollow Heart (%)	Brown Center (%)	Vascular Ring (%)	Scab (index) 0-15	Rhizoctonia (index) 0-15	Appearance (1-9)	Uniformity (1-5)	Specific gravity
QP12145.02	0.0 a	0.0 a	3.3 a	3.60 a	0.03 a	5.3 b	2.9 b	1.060 b
Roselys (C)	10.0 a	0.0 a	0.0 a	3.00 a	0.00 a	6.0 ab	2.8 b	1.064 b
AG1405.15	0.0 a	0.0 a	0.0 a	0.13 b	0.00 a	6.5 a	3.5 a	1.079 a
AG1425.11	0.0 a	0.0 a	0.0 a	0.43 b	0.00 a	6.0 ab	3.0 b	1.071 ab
Marispeer (C)	0.0 a	0.0 a	6.7 a	1.20 ab	0.00 a	6.0 ab	3.0 b	1.060 b

Data are the means of three replications (one row/replication)

Data followed by a different letter in the same column are significantly different ($P < 0.05$) according to the Tukey test

3.6. Culinary tests

- For chips evaluation, Mystère and Snowden acted as the control varieties since they are used commercially for this market. Results show that Mystère, Snowden and SP326 received the highest note in terms of color with a value of 2 (Table XXII).
- For the fries, the clones F14021 and VF14016 obtained the highest value (0) for the color.



Table XXII. Evaluation of chips and fries color on January 6th 2023

Genotype	Chips*	Fries**
	1 - 6	000 - 4
Alliston	4.5	
Envol (C)	5	
FV16324-08	3.5	
Mystère (C)	2	
Nougat	4.5	
QP12056.16	3	
QP12058.23	4	
QP13031.01	5	
QP13099.04	5	
QP13127.14	4	
Snowden (C)	2	
SP326	2	
Superior (C)	5	
Colomba	6	
Confederation	4	
Fabula	5.5	
Keuka Gold (C)	4	
QP12081.11		1
Vivaldi (C)	5	
Yukon Gold (C)	5	
AG1424.11		1
Alta Cloud		1.5
Campagna (C)		1.5
F14021		0
Goldrush (C)		2
QP12115.03		1
QP13094.03		2.5
QP13116.15		3
VF14016		0
AG1405.15		2
AG1425.11	4.5	
Marispeer (C)		1
QP12145.02		1
Roselys (C)	5	
AG1404.09	6	
AG1533	5.5	
AG1534	6	



AG1535	6
AG1540	6
AR2018-08	4
AR2018-09	5
Chieftain (C)	6
DR Chieftain (C)	5.5
F14119	5.5
Norland (C)	5.5
QP12058.36	5
QP12058.45	5
QP12058.48	4.5
QP12058.62	4.5
QP13071.28	5
Viking (C)	6

* Snack Food Association chart (1=white; 6=brown)

**USDA charter (000=white; 4=brown)



4. RESULTS INTERPRETATION

- Both experimental sites generated high total yields regardless of the category.
- Internal quality was good and similar for Ste-Croix and Lanoraie for most of the genotypes evaluated.
- Common scab indexes were higher in Lanoraie than Ste-Croix.
- Specific gravity was lower for most of the clones in Lanoraie compared to Ste-Croix.
- Several genotypes presented a good potential regarding the yield and the quality, in each category and site. Pictures of the potential genotypes along with the control varieties are shown in the next pages.
 - White round potatoes
 - QP12056.16 (Figure 8)
 - QP13127.14 (Figure 9)
 - Mystère (C) (Figure 10)
 - Envol (C) (Figure 11)
 - Snowden (C) (Figure 12)
 - Superior (C) (Figure 13)
 - Yellow flesh potatoes
 - Fabula (Figure 14)
 - Colomba (Figure 15)
 - Keuka Gold (C) (Figure 16)
 - Yukon Gold (C) (Figure 17)
 - Long potatoes
 - F14021 (Figure 18)
 - Campagna (C) (Figure 19)
 - Goldrush (C) (Figure 20)
 - Red skin potatoes
 - AG1540 (Figure 21)



- QP12058.36 (Figure 22)
 - Chieftain (C) (Figure 23)
 - Dark Red Chieftain (C) (figure 24)
 - Norland (C) (Figure 25)
 - Viking (C) (Figure 26)
- Specialties potatoes
- QP12145.02 (Figure 27)
 - Marispeer (C) (Figure 28)
 - Roselys (C) (Figure 29)





Figure 8. QP12056.16





Figure 9. QP13127.14





Figure 10. Mystère (C)





Figure 11. Envol (C)





Figure 12. Snowden (C)





Figure 13. Superior (C)





Figure 14. Fabula





Figure 15. Colomba





Figure 16. Keuka Gold (C)





Figure 17. Yukon Gold (C)





Figure 18. F14021





Figure 19. Campagna (C)





Figure 20. Goldrush (C)





Figure 21. AG1540





Figure 22. QP12058.36





Figure 23. Chieftain (C)





Figure 24. Dark Red Chieftain (C)





Figure 25. Norland (C)





Figure 26. Viking (C)





Figure 27. QP12145.02





Figure 28. Marispeer (C)





Figure 29. Roselys (C)

