

PHENOTYPING Potato Accessions evaluated for Cold or Frost Tolerance a

CODE	REGION	Altitud	Latitud	Longitud	Name o f Variety
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EC1	Centro	2800-3400			Lila Shungo
EC2	Norte-Centro-Sur	2800-3400			11-9-172
EC3	Norte-Centro-Sur	2800-3400			11-9-44
EC4	Norte-Centro-Sur	2800-3400			11-9-38
EC5	Norte-Centro-Sur	2800-3400			11-9-133
EC6	Norte-Centro-Sur	2800-3400			11-9-34
EC7	Norte-Centro-Sur	2800-3400			12-4-45
EC8	Centro	3000-3200			Chaucha roja
EC9	Centro	2600-3200			INIAP-Cecilia
EC10	Centro	2800-3400			INIAP-Victoria
EC11	Centro	3200-3500			Cacho negro
EC12	Centro	2900-3300			INIAP-Yana Shungo
EC13	Centro	2800-3400			INIAP-Libertad
EC14	Norte-Centro-Sur	2800-3400			INIAP-Catalina
EC 15	Norte-Centro-Sur	2800-3400			11-9-67
EC16	Norte-Centro-Sur	2800-3400			12-4-175
EC17	Norte-Centro-Sur	2800-3400			399002.52
EC18	Norte-Centro-Sur	2800-3400			07-46-8
EC19	Norte-Centro-Sur	2800-3400			12-4-142
EC20	Norte-Centro-Sur	2800-3400			12-6-29
EC21	Norte-Centro-Sur	2800-3400			12-4-145
EC22	Norte-Centro-Sur	2800-3400			11-9-106
EC23	Centro	3000-3500			Calvache
EC24	Centro	2900-3300			INIAP-Puca Shungo
EC25	Norte - Centro	2800-3400			INIAP-Natividad
EC26	Norte-Centro-Sur	2800-3400			11-4-173
EC27	Norte-Centro-Sur	2800-3400			11-9-108
EC28	Norte-Centro-Sur	2800-3400			98-38-12
EC29	Norte-Centro-Sur	2800-3400			12-4-35
EC30	Norte-Centro-Sur	2800-3400			11-9-28
EC31	Norte - Centro	2800-3600			Superchola

EC32	Norte-Centro-Sur	2800-3400			12-6-158
EC33	Norte-Centro-Sur	2800-3400			399071.17
EC34	Norte-Centro-Sur	2800-3400			399079.27
EC35	Norte-Centro-Sur	2800-3400			12-4-72
EC36	Centro - Sur	2800-3400			INIAP-Gabriela
EC37	Norte-Centro-Sur	2800-3400			11-9-77
EC38	Centro	2600-3900			Uvilla
EC39	Centro	3000'3500			Leona negra
EC40	Sur	2800-3500			Jubaleña
EC41	Norte-Centro-Sur	2800-3400			11-9-27
EC42	Centro	2700-3400			INIAP-Josefina
EC43	Norte-Centro-Sur	2800-3400			07-32-15
EC44	Centro	3300-3500			Puña
EC45	Centro	2800-3400			INIAP-Fripapa
EC46	Norte, Centro y Sur	2800-3400			INIAP-Estela
EC47	Centro	3300-3600			Tushpa
EC48	Centro	2800-3500			INIAP-Raymipapa
EC49	Norte-Centro	2400-3100			Premium
EC50	Norte-Centro	2400-3100			Allypacha
EC51	Norte-Centro-Sur	2800-3400			380496.2
EC52	Norte-Centro-Sur	2800-3400			399062.115
EC53	Norte-Centro-Sur	2800-3400			399090.15
EC54	Norte-Centro-Sur	2800-3400			12-4-143
EC55	Norte-Centro-Sur	2800-3400			399075.13
EC56	Norte-Centro-Sur	2800-3400			399075-26
EC57	Norte-Centro-Sur	2800-3400			98-2-6
EC58	Norte-Centro-Sur	2800-3400			97-25-3
EC59	Norte-Centro-Sur	2800-3400			12-6-29
EC60	Norte-Centro-Sur	2800-3400			11-8-6
EC61	Norte-Centro-Sur	2800-3400			11-9-186
EC62	Norte-Centro-Sur	2800-3400			07-40-1
EC63	Norte-Centro-Sur	2800-3400			11.9.66
EC64	Norte-Centro-Sur	2800-3400			11-9-64
EC65	Norte-Centro-Sur	2800-3400			12-6-22
EC66	Norte-Centro-Sur	2800-3400			12-2-6
EC67	Norte-Centro-Sur	2800-3400			12-4-50
EC68	Norte-Centro-Sur	2800-3400			12-14-3
EC69	Norte-Centro-Sur	2800-3400			12-5-39
EC70	Norte-Centro-Sur	2800-3400			12-4-170
EC71	Norte-Centro-Sur	2800-3400			12-4-37
EC72	Norte-Centro-Sur	2800-3400			12-8-18
EC73	Norte-Centro-Sur	2800-3400			12-4-89
EC74	Norte-Centro-Sur	2800-3400			12-4-173
EC75	Norte-Centro-Sur	2800-3400			12-3-25
EC76	Norte-Centro-Sur	2800-3400			11-9-45
EC77	Norte-Centro-Sur	2800-3400			11-10-3
EC78	Norte-Centro-Sur	2800-3400			11-9-112

EC79	Norte-Centro-Sur	2800-3400			11-9-16
EC80	Norte-Centro-Sur	2800-3400			11-9-12
EC81	Norte-Centro-Sur	2800-3400			11-9-175
EC82	Norte-Centro-Sur	2800-3400			11-9-8
EC83	Norte-Centro-Sur	2800-3400			11-9-150
EC84	Norte-Centro-Sur	2800-3400			11-9-94
EC85	Norte-Centro-Sur	2800-3400			11-9-90
EC86	Norte-Centro-Sur	2800-3400			11-9-185
EC87	Norte-Centro-Sur	2800-3400			07-24-8
EC88	Norte-Centro-Sur	2800-3400			14-9-56
EC89	Norte-Centro-Sur	2800-3400			14-4-173
EC90	Norte-Centro-Sur	2800-3400			12-4-75
EC91	Norte-Centro-Sur	2800-3400			11-9-9
EC92	Norte-Centro-Sur	2800-3400			11-9-128
EC93	Norte-Centro-Sur	2800-3400			11-9-92
EC94	Norte-Centro-Sur	2800-3400			11-9-131
EC95	Norte-Centro-Sur	2800-3400			11-16-4
EC96	Norte-Centro-Sur	2800-3400			11-9-95
EC97	Norte-Centro-Sur	2800-3400			11-9-85
EC98	Norte-Centro-Sur	2800-3400			11-9-107
EC99	Norte-Centro-Sur	2800-3400			11-9-186
EC100	Norte-Centro-Sur	2800-3400			12-4-145
EC101	Norte-Centro-Sur	2800-3400			12-4-53
EC102	Norte-Centro-Sur	2800-3400			11-9-1
EC103	Norte-Centro-Sur	2800-3400			11-9-17
EC104	Norte-Centro-Sur	2800-3400			11-9-142
EC105	Norte-Centro-Sur	2800-3400			11-10-1
EC106	Norte-Centro-Sur	2800-3400			11-9-101
EC107	Centro	3200-3600			Coneja negra
EC108	Centro	3300-3500			Cacho Blanca
EC109	Centro	3200-3500			Chihuahila Roja
EC110	Norte-Centro	2600-3200			Capiro
EC 111					Carolina

LEYENDA

¹Escala de Marudez del Tuberculo:

1= Muy Precoz (menor a 120 días)

2 = Precoz (120-139 días)

3 = Intermedio (140-159 días)

4= Tardío (160-180 días)

5=Muy tardío (mayor a 180 días)

²Escala de nivel de daño por Heladas:

Grado	Daño por helada
0	Sin daños visibles
1	Ligero bronceado en el foliolo superior
2	Unos pocos foliolos superiores muertos
3	Muchos foliolos superiores muertos
4	Muchas hojas muertas
5	Todas las hojas y peciolo muertos

6

Todas las hojas y tallos
muertos (planta entera)

PUNO: Reacción -0.4°C

* Z. Huaman, J.T. Williams, W. Salhuana and. L. Vincent. 1977. Descriptors for the cultivated potato. Interna

nd Resistance to Late Blight at INIAP and USFQ, ECUADOR. Project PAPAC

Native /Clone	Specie	Ploidy	Number tubers per plant*	Yield t/ha	Cold or Frost Field Evaluation	Cont
						-4°C
Native	chaucha	3X	15.00	18.36		
Clone	hybrid	4X	14.73	26.73		
Clone	hybrid	4X	17.93	23.22		
Clone	hybrid	4X				
Clone	hybrid	4X	15.73	19.17		
Clone	hybrid	4X	18.00	18.90		
Clone	hybrid	4X	17.07	17.28		
Native	Phureja	2X	13.00	12.69		
Variety	hybrid	4X	18.33	9.72		
Variety	hybrid	4X	13.00	40.50		
Native	Andigena	4X	12.00	9.45		
Variety	chaucha	3X	15.00	32.40		
Variety	hybrid	4X	14.20	24.84		
Variety	hybrid	4X	21.00	29.70		
Clone	hybrid	4X				
Clone	hybrid	4X	13.27	11.61		
Clone	hybrid	4X	13.33	21.87		
Clone	hybrid	4X	23.33	18.36		
Clone	hybrid	4X	13.00	12.69		
Clone	hybrid	4X	11.80	12.96		
Clone	hybrid	4X	12.47	7.29		
Clone	hybrid	4X	19.07	28.89		
Native	andigena	4X	21.00	8.64		
Variety	chaucha	3X	15.00	28.35		
Variety	hybrid	4X	9.60	8.10		
Clone	hybrid	4X	12.00	17.28		
Clone	hybrid	4X	23.60	20.52		
Clone	hybrid	4X	16.00	35.64		
Clone	hybrid	4X	16.00	31.86		
Clone	hybrid	4X	19.00	23.76		
Variety	Andigena	4X	8.93	4.05		

Clone	hybrid	4X	14.00	29.43		
Clone	hybrid	4X	13.33	10.53		
Clone	hybrid	4X	8.33	10.53		
Clone	hybrid	4X	15.20	11.61		
Variety	hybrid	4X	20.00	33.75		
Clone	hybrid	4X	19.33	17.01		
Native	Andigena	4X	7.47	2.70		
Native	Andigena	4X	10.00	27.00		
Native	Andigena	4X	20.00	43.74		
Clone	hybrid	4X	16.00	24.84		
Variety	hybrid	4X	19.33	22.95		
Clone	hybrid	4X	18.13	13.23		
Native	Andigena	4X	15.00	32.94		
Variety	hybrid	4X	15.00	29.70		
Variety	hybrid	4X	14.00	27.81		
Native	Andigena	4X	14.00	12.96		
Variety	hybrid	4X	18.00	37.53		
Variety	hybrid	4X	10.00	31.86		
Variety	hybrid	4X	13.00	19.17		
Clone	hybrid	4X	10.00	17.28		
Clone	hybrid	4X	12.33	10.53		
Clone	hybrid	4X	13.00	21.60		
Clone	hybrid	4X	18.00	25.38		
Clone	hybrid	4X	14.00	21.60		
Clone	hybrid	4X	15.00	33.75		
Clone	hybrid	4X	16.33	14.31		
Clone	hybrid	4X	9.00	10.80		
Clone	hybrid	4X	11.80	12.96		
Clone	hybrid	4X	18.20	29.70		
Clone	hybrid	4X	13.67	14.85		
Clone	hybrid	4X	10.00	9.45		
Clone	hybrid	4X	15.93	17.55		
Clone	hybrid	4X	15.20	16.47		
Clone	hybrid	4X	19.00	34.29		
Clone	hybrid	4X	20.20	21.06		
Clone	hybrid	4X	17.00	20.52		
Clone	hybrid	4X	16.80	23.76		
Clone	hybrid	4X	21.60	25.38		
Clone	hybrid	4X	17.40	15.12		
Clone	hybrid	4X	13.00	24.30		
Clone	hybrid	4X	11.50	8.10		
Clone	hybrid	4X	7.50	29.70		
Clone	hybrid	4X	10.80	8.64		
Clone	hybrid	4X	11.60	20.52		
Clone	hybrid	4X	16.40	26.46		
Clone	hybrid	4X	11.80	18.90		
Clone	hybrid	4X	16.20	22.68		

Clone	hybrid	4X	18.00	21.60		
Clone	hybrid	4X	20.60	20.52		
Clone	hybrid	4X	17.00	30.51		
Clone	hybrid	4X	18.60	23.76		
Clone	hybrid	4X	14.00	39.96		
Clone	hybrid	4X	12.00	14.04		
Clone	hybrid	4X	19.00	28.08		
Clone	hybrid	4X				
Clone	hybrid	4X	13.00	29.16		
Clone	hybrid	4X				
Clone	hybrid	4X	15.00	19.98		
Clone	hybrid	4X	14.00	21.60		
Clone	hybrid	4X	15.67	41.85		
Clone	hybrid	4X	7.00	10.80		
Clone	hybrid	4X	15.40	17.28		
Clone	hybrid	4X	19.60	22.68		
Clone	hybrid	4X	7.40	24.30		
Clone	hybrid	4X	9.00	10.80		
Clone	hybrid	4X	15.00	22.68		
Clone	hybrid	4X	17.40	30.24		
Clone	hybrid	4X	21.00	40.77		
Clone	hybrid	4X	12.47	7.29		
Clone	hybrid	4X	13.80	24.84		
Clone	hybrid	4X	19.00	34.47		
Clone	hybrid	4X	15.00	39.69		
Clone	hybrid	4X	22.00	29.70		
Clone	hybrid	4X	16.00	27.00		
Clone	hybrid	4X	23.00	37.80		
Native	Andigena	4X	17.00	47.25		
Native	Andigena	4X	19.00	8.10		
Native	Stenotomum	2X	12.00	7.83		
Variety	hybrid	4X	11.67	11.61		
Variety						

³Escala de vigor

- 1 Muy Débil
- 2 Débil
- 3 Intermedio
- 4 Vigoroso
- 5 Vigoroso

⁴Escala susceptibilidad a tizon tardío VES

- 0 Muy Resistente
- 11 Muy Susceptible



tional Board for Plant Genetic Resources. Rome, Italy. AGPE:IBPGR/77/32.

LIMA (2016-2019)

rolled Cold damage evaluation	Recovery potential		Water
	16 days without water	24 h rehydration	13 Days
-8°C			
	0	2	67.20
	2	4	64.72
	2	6	63.84
	3	7	61.37
	3	7	60.66
	3	8	59.64
	1	3	64.40
	5	7	65.19
	1	6	52.81
	5	7	64.55
	3	7	55.35
	2	7	62.22
	8	9	53.20
	3	7	57.59
	1	3	64.06
	4	6	48.90
	3	8	53.79
	4	8	57.54
	2	4	64.05
	6	7	57.04
	6	8	59.77
	5	6	65.01
	6	7	56.14

	8	9	61.30
	2	7	58.75
	6	8	58.94
	2	7	58.59
	1	4	65.06
	4	8	56.12
	2	7	57.55
	1	3	54.74
	6	8	62.58
	8	9	80.43
	3	8	61.11
	4	8	56.75
	6	8	71.88
	4	9	52.99
	4	9	61.61
	2	7	60.31
	3	6	61.88
	3	7	56.13
	8	9	53.20
	3	5	64.65
	3	6	67.49
	2	7	54.60
	0	2	58.33
	6	8	66.99
	2	4	64.05
	2	5	64.85
	1	3	63.27
	5	6	60.34
	3	5	64.42

	5	7	65.34
	4	6	63.96
	5	7	67.43
	6	8	55.84
	3	5	60.34
	2	5	63.44
	2	5	65.23
	2	5	64.03
	3	5	65.70
	1	4	61.75
	5	7	64.58
	3	6	67.49
	5	7	64.17
	1	3	64.44
	6	8	53.13
	3	5	64.81
	1	4	52.78
	1	3	63.58

Drought tolerance

relative content (%)		Scholander		Tuber number	
16 Days	Watering	Bar/gr no watering	Bar/gr watering	Stress	No stress
62.99	86.15	-9.48	-2.45	6.00	10.67
58.99	83.12	-8.60	-4.25	8.00	8.67
54.71	85.76	-11.12	-2.65	11.33	7.67
42.72	85.50	-12.70	-4.32	4.10	7.52
50.05	84.05	-10.55	-3.40	11.38	16.67
48.01	83.97	-11.92	-3.00	4.19	8.55
59.14	82.77	-11.80	-3.91	3.33	15.00
46.97	83.14	-10.34	-4.80	8.64	8.70
38.45	84.33	-9.84	-6.00	6.44	9.07
58.88	82.18	-7.40	-3.61	9.33	7.33
47.66	84.10	-12.60	-4.50	2.53	5.31
50.03	84.91	-7.87	-5.46	4.36	5.89
44.79	86.06	-9.43	-6.80	3.45	8.21
44.37	84.31	-12.05	-4.00	3.81	8.50
56.92	87.91	-10.78	-2.58	6.33	7.67
40.56	87.79	-10.30	-5.20	6.37	10.04
45.85	84.51	-9.35	-4.60	4.70	5.76
43.33	85.81	-9.71	-6.48	6.86	10.98
58.23	82.04	-9.90	-2.09	10.00	11.67
44.76	83.85	-11.07	-4.20	2.67	5.39
57.89	83.71	-10.20	-3.15	1.67	6.67
58.37	82.54	-7.80	-2.86	3.67	7.00
45.14	84.18	-10.54	-4.25	9.12	12.00

49.00	83.13	-11.20	-7.30	6.10	6.10
49.00	83.87	-14.30	-5.48	5.09	7.61
51.15	85.75	-9.57	-7.00	5.17	7.50
45.28	83.62	-7.00	-6.30	5.19	9.54
60.23	83.71	12.00	-4.00	7.00	10.00
43.64	85.34	-9.00	-3.00	6.68	15.00
44.92	79.32	-4.20	-4.43	11.02	14.67
51.14	78.84	-16.00	-3.60	5.00	8.33
58.44	77.06	-8.70	-3.60	6.67	8.00
70.66	92.11	-9.60	-1.87	9.61	15.33
47.46	84.66	-11.34	-3.86	9.75	17.52
48.67	82.87	-9.15	-2.71	6.46	8.11
64.80	89.47	-8.00	-1.80	5.00	2.33
41.41	85.28	-8.87	-4.20	7.67	14.17
40.67	84.64	-11.88	-5.28	8.73	10.82
49.64	83.26	-7.38	-3.54	5.84	10.62
40.07	89.00	-11.30	-2.80	3.72	6.01
49.45	84.70	-8.52	-4.12	7.27	9.01
44.79	86.06	-9.43	-6.80	3.45	8.21
59.21	83.71	-9.00	-2.11	6.67	8.33
59.86	79.60	-8.14	-3.00	5.00	9.67
42.01	85.04	-10.35	-7.40	5.91	7.95
53.54	76.41	-6.80	-4.45	6.67	5.00
61.30	85.33	-12.12	-2.40	4.00	6.00
58.33	81.94	-11.45	-2.92	3.33	7.33
58.95	83.12	-10.15	-3.60	6.67	12.33
58.62	81.91	-10.10	-2.30	2.00	4.33
55.17	78.35	-12.00	-3.20	3.00	5.33
59.30	83.08	-12.60	-2.19	6.33	11.33

63.01	88.21	-8.40	-1.60	9.67	7.33
58.34	82.90	-12.40	-2.00	7.33	6.00
56.07	77.01	-8.18	-3.15	6.33	6.33
53.67	70.57	-9.95	-4.50	6.67	8.00
58.68	81.30	-11.30	-2.80	5.00	3.00
58.91	81.56	-8.60	-2.30	5.33	7.33
59.22	83.24	-10.50	-2.73	3.67	4.67
59.51	82.78	-10.69	-1.66	3.00	8.00
61.75	81.39	-8.00	-2.40	9.33	9.67
58.54	82.51	-11.76	-3.78	3.33	7.67
58.44	83.13	-7.52	-2.66	4.67	5.67
59.86	79.60	-8.14	-3.00	5.00	9.67
57.36	78.52	-8.30	-3.50	4.00	7.00
59.88	82.66	-10.11	-3.19	6.00	9.00
38.96	84.65	-12.03	-6.30	4.50	7.16
59.01	82.70	-12.33	-3.55	7.00	7.33
41.90	85.75	-15.50	-1.42	3.64	11.50
58.96	87.03	-9.50	-2.36	4.33	8.67

S= Susceptibl X= Fin de ciclo fegetativo
T= Tolerant

Yield (g/plant)		Yield average geometric	Controlled evaluation of drought damage		L _a	
Stress	No stress		Tolerant	Not tolerant	TCL	ABCPE
						895.33
37.93	151.30	75.31		X	137.63	898.33
36.83	100.53	60.82		X	83.12	1050.00
55.13	87.37	69.18		X	208.07	904.17
55.00	56.67	52.46		X	43.24	73.00
					132.37	1750.00
						936.33
150.00	231.67	184.32	X			3932.00
91.67	200.00	132.97	X		3.06	787.00
26.03	110.10	51.69		X		
85.00	105.00	93.51		X	222.47	506.83
138.33	241.67	182.31	X		3.59	41.33
38.27	78.03	53.65	X			217.05
					118.02	1621.67
65.00	200.00	113.93	X		235.47	581.00
121.67	140.00	130.31		X	23.94	1003.33
20.00	53.33	31.73	X		293.99	2391.67
93.33	123.33	107.17		X	81.25	2794.17
46.13	95.37	66.13		X	214.63	875.00
150.00	178.33	160.95		X	343.27	405.00
33.33	103.33	56.96		X	82.89	304.92
75.00	140.00	77.5		X	240.74	1190.00
46.03	64.67	53.47		X	115.78	770.00
36.67	58.33	45.74		X	156.06	429.33
5.50	67.67	19	X		116.69	368.00
34.63	148.27	71.48		X	190.68	927.50
100.00	155.00	124.11		X	284.85	2712.50

					258.79	
156.67	221.67	186.23	X		146.71	1530.67
160.00	186.67	172.16	X			830.67
38.33	51.67	42.29		X	66.83	2397.50
65.00	126.67	82.01		X		2170.00
61.00	75.30	67.74		X	151.50	770.00
16.67	81.67	36.48		X	4.56	3342.50
85.00	105.00	94.06		X	215.49	1382.83
16.73	42.63	26.69		X		1079.50
32.67	70.40	45.87		X	184.62	1575.00
31.67	105.00	128.94	X		182.99	1213.33
81.67	196.67	126.67	X		166.44	851.67
						1011.83
76.67	293.33	140.76		X		987.00
41.93	118.27	68.87		X	267.06	578.00
					179.09	3135.67
					0.00	416.35
198.33	298.33	242.94	X		39.67	849.63
110.00	258.33	164.76	X		16.53	105.88
						1015.00
					114.71	510.00
55.00	221.67	110.3		X		
75.00	130.00	96.25		X	6.09	2132.67
80.00	106.67	92.37		X	0.76	3357.00
20.00	53.33	31.73		X	293.99	2391.67
28.07	92.63	49.9		X	28.90	735.00
29.37	42.07	34.58		X	144.81	851.67
113.33	125.00	118.55	X		70.45	1287.00
64.73	87.33	74.98		X	165.14	956.67
50.53	103.90	72.1		X	149.30	1639.17
					52.77	758.00
				X		
39.80	225.27	90.76				738.00
						68.00
				X		
36.60	89.87	53.9			36.12	506.00
				X	24.18	1890.00
23.13	56.20	34.26		X		371.00
100.10	178.50	130.15		X	262.97	123.00
23.80	192.20	66.01		X	216.96	48.33

31.90	114.20	60.3		X	151.92	70.00
32.23	81.33	49.85		X		70.00
50.43	93.83	68.75			127.28	
				X	92.83	76.00
24.21	54.50	35.81		X	17.45	220.50
18.50	20.80	19.61		X		82.00
58.33	106.07	75.1		X	116.54	108.00
34.07	125.60	64.18				
					44.77	
						1828.75
27.03	100.60	50.44		X	213.44	198.33
28.40	126.50	57.11		X	265.49	189.00
28.90	72.97	45.64		X	183.52	49.00
62.00	244.40	122.54		X		303.00
29.37	42.07	34.58		X		360.50
					81.25	2794.17
					107.54	345.00
26.53	110.10	45.64		X	144.99	90.00
26.70	133.67	59.67		X	197.55	
25.00	33.33	27.88		X	401.00	488.17
29.87	78.23	45.64		X	155.08	
25.00	176.67	64.93		X	276.32	2304.00
45.40	148.77	81.93		X	432.72	3273.67

late blight	Predominant Tuber Skin Color **	Predominant tuber skin color deep	Secondary tuber skin Color
Escala Suscept 0-2=R; 6-9= S			
2	Negruzco	Intermedio	Amarillo
2	Roja	Intermedio	
2			
2			
0	morada	intermedio	crema
4			
2	Rojo	Pálido	
9	Amarillo	Claro	
2	Rojo morado	Claro	
	Negruzco	Intermedio	
1	Negruzco	Intermedia	Morado
0	Amarillo		
0	Rosado		Crema
4	Negruzco	intenso	
1	Rojo	pálido	
2			
5	Violeta	Intenso	
6			
2			
1	Rojo	Intermedia	
1	Rojo morado	Intermedia	
3	Amarillo	Pálido	Rosado
2			
1	Rosado	intermedio	Crema
1	Violeta	intermedio	crema
2			
6	Rosado		Blanco crema

	Rosado	Intermedio	Crema
4	Rojo	Intenso	
2	Púrpura	pálido	
5	Crema	Intermedio	
5	Rosado	Intenso	Blanco crema
2			
8	Marrón		Rojo morado
3	Rojo morado	Oscuro	Amarillo
2	Morado	Intermedio	Marron
4			
3	Rojo	Pálido	
2			
2	Rojo morado	Intermedio	Manchas
2	Rosado	Intenso	Rosado
1	Morada		
7	Negrusco	Intermedio	Amarillo
1	Crema		Rosado
2	Roja		
0	Rosado		
	Crema	intermedio	púrpura
2	Rojo	intermedio	
	Púrpura		
1	Violeta	Intenso	crema
	Rojo	Intermedio	
5	Crema	Intermedio	Rosado
8	Rojo	Intenso	Crema
5			
2			
2			
3			
2			
4			
2			
2	crema	intermedio	rojo
0	Rojo	intermedio	
	Rojo	intermedio	
1	Rosado	intermedio	
4			
1			
0			
0	rojo	intermedio	

0	rojo		
0	crema	intermedio	
	rojo	intermedio	
0	crema	intermedia	
1	crema	intemedia	
0	rojo		
0			
4			
0			
0	rojo	intermedio	
0	rojo	intermedio	
0	crema	intermedio	
1	blanca	intermedio	
1			
6	Crema	intenso	violeta
1			
0	rojo	intermedio	
1	Morado	Intenso	
	Amarillo claro		Rosado
5	Rojo	Intermedio	
7	Rojo		Morado

Scale: Forbes et al. 2014

Distribution of secondary tuber skin color	Predominant tuber flesh color	Secondary tuber flesh color	Distribution of secondary tuber flesh color
Puntos salpicados	Blanco	Violeta	Anillo vascular y médula
	crema		
Manchas dispersas	crema		
	Amarillo claro		
	Amarillo claro		
	Amarilla		
	Crema	Morado	Manchas
Manchas dispersas	Blanco crema	Morada	Anillo vascular y médula
	Crema		
	Amarilla pálida		
	crema	violeta	médula
	crema		
	Amarillo		
	Crema		
	Crema	Rojo	Anillo vascular y médula
Manchas dispersas	Amarillo		
Manchas dispersas	Amarillo		
manchas dispersas	crema	violeta	manchas
	Amarillo intenso		

Manchas dispersas	Amarillo		
	amarillo		
	amarillo		
	crema		
	Amarilla		
Manchas salpicadas	Amarilla	Moradas	Manchas
En las cejas	Crema	Violetas	Manchas
Alrededor de los ojos	Crema		
	Amarilla		
En las cejas	Crema	Violetas	Manchas
	Amarilla		
	Amarillo claro		
Puntos salpicados	Blanco	Violeta	Anillo vascular y médula
Manchas dispersas	Amarillo claro		
	Amarilla		
	Crema		
manchas dispersas	crema		
	amarillo		
Blanco			
manchas dispersas	crema	violeta	médula
	amarillo		
Manchas dispersas	crema		
Alrededor de los ojos	crema		
manchas dispersas	crema	rojo	médula
	crema		
	crema		
	crema		
	crema		

	crema		
	blanco		
	crema		
	crema		
	crema		
	blanco-crema		
	crema		
	blanco-crema		
	blanco-crema		
	crema		
manchas dispersas	crema	violeta	médula
	crema		
	Crema		
Manchas dispersas	Amarillo	Rosado	Manchas dispersas
	Amarillo claro		
Manchas dispersas	Crema		

General tuber shape	Unusual tuber shape	Depth of tuber eyes	Without Stress SIN ESTRÉS SIEMBRA	
			PRODUCTIO N (Kg of tubers per plant)	Tuber % dry weight
Redonda		Superficiales	-	-
oblonga		Medios	4.66	21.72
			2.87	22.55
			-	-
			5.07	20.47
oblonga		superficiales	-	-
			3.20	23.70
Elíptica		Superficiales	-	-
Elíptica		Superficiales	4.58	24.68
Ovalada		Superficiales	1.97	20.14
Alargado	Reniforme	Intermedios	-	-
Oblonga	Concertinada	Profundos	2.53	24.41
Ovalada		Superficiales	0.88	20.88
Redonda	Ovalada	Superficiales	-	-
			-	-
oblonga		medios	-	-
oblonga		superficiales	1.44	21.86
			3.56	20.37
			-	-
Oblongo		Medios	2.25	20.65
			1.36	23.45
			3.76	19.23
Elíptica		Medios	-	-
Comprimida		Profundos	5.48	19.63
Oblonga		Medios a profundos	4.73	24.83
			-	-
			2.97	22.20
Alargado		medios	4.40	21.96
alargado		medios	-	-
			1.91	24.22
Ovalada		Superficiales	1.75	20.20

Redonda		Superficiales	-	-
oblongo	aplanado	medios	-	-
redonda		superficiales	1.63	20.01
oblonga		superficiales	4.15	24.22
Ovalada		Superciales		
			2.25	20.35
Redondo		Superficiales	-	-
Oblongo		Medios	3.86	26.83
Ovaladao	Aplandado	Medios	-	-
			2.85	20.29
Oblonga		Medios	4.15	21.83
			1.26	19.21
Ovalado	Aplanado	Profundos	-	-
Oblonga		Superficiales	2.39	21.46
Redonda		Medios	1.91	25.57
Comprimido		Medios	-	-
Redonda		Superficiales	4.63	18.07
Redonda		Medios suoerficiales	-	-
Oblongo		Superficiales	-	-
oblongo		intermedios	5.02	20.20
oblongo		Superficiales	3.54	22.59
oblongo		intermedio	1.01	19.86
oblongo		superficiales	-	-
			-	-
oblongo alargado		superficiales	3.45	22.78
Oblonga		Superficiales	4.40	19.94
Oblonga		Superficiales	3.15	19.32
			-	-
			4.49	20.00
			-	-
			3.63	21.29
			3.15	20.66
			1.68	23.18
			-	-
			-	-
			-	-
oblongo		superficial	-	-
oblonga		medios	-	-
oblongo		medios	-	-
oblonga		superficiales	5.52	25.08
			-	-
			-	-
			3.03	21.67
			-	-
			-	-
			-	-
oblongo		superficial	4.95	20.19

oblongo		superficial	-	-
oblongo		medios	-	-
oblongo		medios	2.99	20.93
alargado		superficial	2.79	19.41
oblongo		medios	1.63	18.93
redondo		medios	-	-
			-	-
			-	-
			-	-
			2.19	21.31
			-	-
			-	-
oblongo		medios	3.32	19.94
			-	-
oblongo		superficial	-	-
alargado		medios	-	-
			-	-
			-	-
redondo		medios	-	-
			4.35	19.07
			-	-
alargado		superficial	-	-
			-	-
oblongo		medios	3.92	22.85
			-	-
			-	-
			-	-
			0.57	22.49
Oblongo		Superficiales	-	-
Alargado	Reniforme	Superficiales	-	-
Oblongo	Tuberosado	Muy profundos	-	-
Redonda		Superficiales	-	-
			1.63	19.72

With Stress SIN ESTRÉS

PRODUCTIO N (Kg of tubers per plant)	Relative % of production with respect to field conditions	Water potential (Bar)	Stomata conductanc e (g; mmol/m2/s)	Fluorescenc e (FV/O)	SPAD (Units)	Proline content ($\mu\text{mol}\cdot\text{g}^{-1}$ DW)	PRODUCTIO N (Kg of tubers per plant)
-	-	-	-	-	-	-	-
0.35	0.08	-2.49	399.12	4.66	49.66	0.40	0.34
0.26	0.09	-3.58	637.33	4.54	45.47	1.88	0.15
-	-	-	-	-	-	-	-
0.45	0.09	-3.06	374.07	4.15	49.12	6.40	0.38
-	-	-	-	-	-	-	-
0.84	0.26	-3.43	623.85	4.97	43.52	1.26	0.45
-	-	-	-	-	-	-	-
0.25	0.05	-3.55	598.07	4.51	48.62	0.92	0.16
1.01	0.51	-3.67	784.37	3.33	51.43	0.37	0.37
-	-	-	-	-	-	-	-
1.19	0.47	-3.14	794.13	2.11	45.82	0.91	0.46
1.13	1.28	-3.63	578.97	4.31	48.87	0.07	0.53
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.48	0.33	-2.84	354.33	5.09	44.57	0.07	0.38
1.60	0.45	-3.90	794.53	3.03	37.53	1.40	0.73
-	-	-	-	-	-	-	-
1.93	0.86	-2.79	863.55	3.41	45.63	0.70	0.72
0.57	0.42	-2.78	722.02	4.82	44.78	0.46	0.47
0.23	0.06	-3.45	486.28	4.06	47.24	3.41	0.16
-	-	-	-	-	-	-	-
0.96	0.18	-3.02	675.73	4.50	51.17	1.47	0.58
0.46	0.10	-3.23	617.07	2.59	48.47	0.47	0.30
-	-	-	-	-	-	-	-
0.17	0.06	-3.10	582.93	4.60	47.06	3.01	0.14
0.86	0.20	-3.02	278.72	4.45	44.67	3.92	0.41
-	-	-	-	-	-	-	-
0.37	0.19	-3.40	325.18	4.52	56.03	2.17	0.31
0.78	0.45	-2.99	574.10	2.25	52.41	4.55	0.58

-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.75	0.46	-3.02	527.40	4.65	47.12	3.59	0.56
0.65	0.16	-3.44	668.18	4.06	47.63	1.69	0.40
0.23	0.10	-3.29	462.72	4.93	45.23	5.55	0.25
-	-	-	-	-	-	-	-
0.38	0.10	-2.90	444.53	3.58	44.10	1.94	0.27
-	-	-	-	-	-	-	-
0.17	0.06	-3.55	531.18	4.51	46.49	2.07	0.11
1.37	0.33	-2.40	851.63	4.23	41.21	0.42	0.70
0.92	0.73	-3.46	736.88	3.17	41.19	0.56	0.47
-	-	-	-	-	-	-	-
0.45	0.19	-3.65	433.00	4.24	44.10	2.45	0.36
0.57	0.30	-3.90	688.22	2.84	52.94	2.10	0.34
-	-	-	-	-	-	-	-
0.47	0.10	-3.24	431.08	4.53	45.47	4.10	0.38
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.60	0.12	-3.31	619.33	2.17	44.76	2.73	0.52
0.69	0.19	-3.12	666.32	3.29	49.89	2.31	0.32
0.13	0.13	-2.09	873.77	2.14	43.24	1.54	0.48
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.59	0.17	-3.58	816.05	3.11	37.57	1.12	1.20
0.47	0.11	-3.51	568.33	3.55	48.74	3.29	0.48
0.51	0.16	-4.04	649.47	2.62	45.29	1.26	0.47
-	-	-	-	-	-	-	-
0.12	0.03	-2.93	494.67	4.66	48.38	4.46	0.11
-	-	-	-	-	-	-	-
0.53	0.15	-3.30	799.95	3.23	34.76	2.38	0.31
0.23	0.07	-2.42	387.53	4.46	46.98	3.96	0.12
0.27	0.16	-3.30	185.60	4.23	45.33	1.49	0.17
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.25	0.04	-3.13	318.45	4.38	38.26	7.37	0.23
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.40	0.13	-2.61	418.77	4.15	41.23	2.84	0.34
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.32	0.06	-3.17	405.95	4.24	47.58	6.52	0.24

-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.41	0.14	-2.70	450.27	4.19	50.19	1.47	0.28
0.28	0.10	-2.71	413.92	4.36	41.18	6.98	0.28
0.31	0.19	-2.52	594.60	4.52	44.77	3.16	0.18
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.19	0.09	-2.52	291.43	4.33	47.57	8.98	0.18
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.29	0.09	-3.02	374.07	4.09	41.22	3.34	0.27
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.25	0.06	-2.83	447.50	4.28	44.23	7.03	0.19
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.45	0.11	-2.76	335.57	2.46	47.08	4.82	0.36
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.25	0.44	-3.53	509.73	4.47	47.88	2.01	0.15
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.22	0.14	-3.50	715.42	3.58	44.17	5.73	0.15

DROUGHT SEQUIA

Relative % of production with respect to no stress pot conditions	VISUAL DAMAGE (percentage of turgor after 16 days of drought)	VISUAL RECOVERY (percentage of turgor after 48 hours of rehydration)	Water potential after 16 days of stress (bar)	Stomata conductance after 16 days of stress (g; mmol/m ² /s)	Fluorescence after 16 days of stress (FV/O)	SPAD units after 16 days of stress	Proline content after 16 days of stress (μmol*g ⁻¹ DW)
-	-	-	-	-	-	-	-
0.97	53.00	87.00	-13.69	268.00	3.92	55.32	32.42
0.58	56.00	72.00	-9.76	240.77	3.66	48.73	31.94
-	-	-	-	-	-	-	-
0.85	57.00	75.56	-10.43	67.92	2.71	43.21	35.30
-	-	-	-	-	-	-	-
0.54	44.00	76.00	-11.35	108.60	3.24	43.64	15.69
-	-	-	-	-	-	-	-
0.65	66.00	76.00	-8.79	320.20	3.67	47.64	30.79
0.37	73.00	67.00	-11.30	223.63	4.10	47.19	14.16
-	-	-	-	-	-	-	-
0.38	62.00	56.00	-9.30	416.18	3.20	39.84	19.61
0.47	41.00	86.00	-11.23	223.45	2.05	32.58	11.25
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.80	55.00	71.00	-9.28	118.37	3.79	46.58	23.08
0.45	69.00	76.00	-8.90	152.78	4.45	41.04	21.47
-	-	-	-	-	-	-	-
0.37	49.00	84.00	-10.82	143.75	4.34	47.32	30.88
0.83	68.00	84.00	-9.88	72.63	3.88	43.02	43.56
0.69	64.00	64.00	-12.35	455.12	4.67	46.09	17.11
-	-	-	-	-	-	-	-
0.60	59.00	87.00	-8.71	118.95	2.55	38.50	31.44
0.67	64.00	67.00	-9.55	334.18	2.51	34.90	10.90
-	-	-	-	-	-	-	-
0.82	56.00	82.00	-11.52	565.58	3.96	42.17	32.94
0.48	60.00	81.00	-13.27	74.48	3.78	35.87	28.98
-	-	-	-	-	-	-	-
0.84	62.00	74.00	-12.77	187.58	3.88	52.17	18.41
0.75	69.00	83.00	-10.66	430.20	3.08	34.70	10.62

-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.75	59.00	74.00	-10.38	108.27	4.20	47.48	39.57
0.62	61.00	77.00	-8.87	98.23	4.01	43.44	25.48
1.08	64.00	85.00	-10.68	269.50	3.96	56.32	31.22
-	-	-	-	-	-	-	-
0.70	73.00	72.00	-7.82	154.37	3.29	56.72	18.85
-	-	-	-	-	-	-	-
0.65	70.00	85.00	-7.04	606.08	4.45	43.77	24.44
0.51	39.00	71.00	-10.23	106.47	4.34	47.71	59.39
0.51	79.00	72.00	-8.25	204.40	4.86	48.53	12.50
-	-	-	-	-	-	-	-
0.80	61.00	70.00	-11.30	102.50	3.83	45.80	37.66
0.59	73.00	81.00	-7.45	486.87	3.35	44.14	30.60
-	-	-	-	-	-	-	-
0.81	69.00	75.00	-7.90	92.95	3.83	55.33	54.32
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.86	58.00	85.00	-7.05	334.40	3.24	43.20	15.94
0.46	70.00	86.00	-8.40	305.42	2.46	38.63	13.94
3.67	52.00	78.00	-8.65	553.73	3.90	41.30	21.35
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
2.05	81.00	83.00	-11.56	422.60	4.07	47.10	24.36
1.02	65.00	67.00	-9.38	554.07	3.12	38.37	15.55
0.92	78.00	70.00	-10.46	547.47	4.61	43.94	15.00
-	-	-	-	-	-	-	-
0.88	71.00	82.00	-9.08	532.83	3.65	46.22	14.19
-	-	-	-	-	-	-	-
0.59	74.00	81.00	-12.02	547.43	4.05	41.33	12.51
0.53	75.00	50.00	-8.41	320.13	3.95	47.32	9.53
0.63	59.00	72.00	-8.92	55.02	3.19	45.99	12.39
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.93	60.00	74.00	-8.20	65.58	3.48	45.68	19.33
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.84	70.00	78.00	-8.95	172.43	3.79	38.91	16.75
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.75	59.00	73.00	-8.52	72.25	3.54	44.80	65.25

-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.69	65.00	73.00	-10.79	268.33	4.07	46.07	43.60
1.03	64.00	71.00	-7.70	73.70	3.51	42.60	26.79
0.58	58.00	70.00	-7.87	52.33	3.61	45.80	11.60
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.94	65.00	61.00	-7.18	74.82	3.33	45.63	42.77
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.93	57.00	77.00	-10.43	67.92	2.71	43.21	14.95
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.77	63.00	79.00	-11.06	593.75	4.17	43.63	23.43
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.79	57.00	76.00	-8.07	164.62	3.90	49.33	33.66
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.58	62.00	84.00	-10.10	425.83	3.84	45.32	15.54
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
0.68	70.00	77.00	-9.68	529.57	1.17	38.03	14.95

COLD FRIO

TOLERANT	NOT TOLERANT	PRODUCTION (Kg of tubers per plant)	Relative % of production with respect to no stress pot conditions	VISUAL DAMAGE (%)	Stomata conductance (g; mmol/m2/s)	luorescence (FV/O)	SPAD (Units)
	x	-	-	-	-	-	-
	x	0.26	0.73	13.89	146.00	4.60	47.58
	x	0.17	0.67	20.00	153.68	4.36	50.19
	x	-	-	-	-	-	-
	x	0.32	0.72	44.44	369.33	3.64	37.13
	x	-	-	-	-	-	-
	x	0.40	0.47	22.22	110.40	3.75	35.24
	x	-	-	-	-	-	-
	x	0.24	1.00	91.67	134.00	3.56	47.57
	x	0.31	0.31	18.06	111.38	4.50	0.00
	x	-	-	-	-	-	-
	x	0.46	0.38	29.17	211.73	3.90	45.14
x		0.42	0.37	29.17	272.93	3.71	48.74
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.45	0.95	34.72	91.93	3.48	41.51
x		0.24	0.15	36.11	102.70	3.43	0.00
	x	-	-	-	-	-	-
x		0.67	0.35	44.44	181.30	4.51	0.00
	x	0.26	0.46	36.11	107.78	3.87	40.68
	x	0.24	1.03	23.33	288.70	4.63	47.24
	x	-	-	-	-	-	-
x		0.37	0.38	23.61	135.98	3.19	40.46
	x	0.07	0.16	48.61	145.90	3.05	33.84
	x	-	-	-	-	-	-
	x	0.17	1.00	13.33	123.15	4.62	47.06
	x	0.21	0.25	76.39	131.28	2.69	36.91
	x	-	-	-	-	-	-
	x	0.32	0.87	12.50	211.70	4.50	49.66
x		0.48	0.61	15.28	173.55	2.67	44.10

	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
x		0.33	0.45	41.67	123.13	3.10	40.42
	x	0.23	0.36	23.61	99.93	3.64	43.67
	x						
	x	0.29	1.28	15.28	245.40	4.99	56.03
	x	-	-	-	-	-	-
	x	0.37	0.97	18.06	162.98	4.29	52.94
	x	-	-	-	-	-	-
	x	0.14	0.83	11.67	238.28	4.73	44.77
x		0.58	0.42	25.00	536.23	3.85	0.00
	x	0.41	0.45	19.44	51.95	4.88	0.00
	x	-	-	-	-	-	-
	x	0.42	0.93	9.72	214.25	4.68	47.12
	x	0.25	0.44	19.44	465.00	3.36	49.89
	x	-	-	-	-	-	-
	x	0.39	0.84	19.44	235.90	4.26	44.67
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
x		0.23	0.39	43.06	231.23	4.25	44.76
	x	0.31	0.45	23.61	458.80	3.60	44.78
x		0.41	3.15	23.61	136.20	4.07	44.78
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
x		0.35	0.60	22.22	101.85	4.00	0.00
x		0.30	0.64	16.67	284.95	4.60	43.52
x		0.31	0.60	30.56	80.15	4.32	0.00
	x	-	-	-	-	-	-
	x	0.14	1.16	23.33	258.53	3.84	48.38
	x	-	-	-	-	-	-
	x	0.36	0.67	59.72	392.45	4.29	0.00
	x	0.14	0.61	36.67	203.23	3.45	46.49
	x	0.23	0.86	30.00	156.25	4.29	49.23
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.17	0.67	46.67	157.05	4.18	35.50
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.33	0.82	31.94	284.95	4.34	46.98
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.18	0.56	25.00	242.48	4.14	43.88

	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.23	0.56	29.17	385.85	4.34	49.12
	x	0.24	0.87	15.00	176.68	4.24	42.43
	x	0.22	0.70	15.00	191.38	4.67	40.68
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.09	0.45	26.67	198.50	4.13	39.65
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.39	1.36	41.67	369.33	3.64	45.47
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.24	0.97	15.00	109.50	4.41	44.23
	x	-	-	-	-	-	-
x		-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.29	0.65	41.67	287.43	4.23	47.08
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.14	0.57	30.56	368.53	3.95	47.88
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	-	-	-	-	-	-
	x	0.14	0.62	6.67	175.03	1.26	45.63

HEAT CA

Electrolyte leakage index (units)	TOLERANT	NOT TOLERANT	PRODUCTION (Kg of tubers per plant)	Relative % of production with respect to no stress pot conditions	VISUAL DAMAGE (%)	Stomata conductance (g; mmol/m ² /s)	Fluorescence (FV/O)
-		x	-	-	-	-	-
0.48		x	0.28	0.79	38.89	146.00	1.78
-1.02		x	0.13	0.51	21.67	89.45	2.12
-		x	-	-	-	-	-
1.39		x	0.34	0.77	19.44	147.05	0.82
-		x	-	-	-	-	-
1.57	x		0.34	0.41	52.78	110.40	1.58
-		x	-	-	-	-	-
-3.52		x	0.16	0.64	13.33	134.00	2.63
-36.38		x	0.21	0.21	73.61	111.38	0.07
-		x	-	-	-	-	-
3.06	x		0.40	0.34	63.89	211.73	0.21
-2.99	x		0.50	0.44	97.22	272.93	0.96
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
10.58	x		0.32	0.66	43.06	91.93	1.80
12.37		x	0.49	0.31	77.78	102.70	0.01
-		x	-	-	-	-	-
22.04	x		0.66	0.34	18.06	181.30	0.07
1.84		x	0.35	0.60	51.39	107.78	2.21
-1.84		x	0.08	0.36	45.00	93.13	2.25
-		x	-	-	-	-	-
5.15		x	0.33	0.35	47.22	135.98	0.17
2.59		x	0.20	0.45	25.00	145.90	0.92
-		x	-	-	-	-	-
-1.21		x	0.15	0.87	28.33	110.10	1.90
10.19		x	0.23	0.27	62.50	131.28	0.47
-		x	-	-	-	-	-
-0.17		x	0.20	0.55	18.06	166.75	2.21
2.00	x		0.53	0.68	55.56	173.55	0.46

-		x	-	-	-	-	-
-		x	-	-	-	-	-
3.15		x	0.35	0.47	58.33	123.13	2.24
10.78		x	0.24	0.36	33.33	99.93	2.59
		x					
0.25		x	0.22	0.96	9.72	264.38	1.89
-		x	-	-	-	-	-
13.50	x		0.35	0.92	20.83	117.08	2.34
-		x	-	-	-	-	-
-1.84		x	0.08	0.46	50.00	281.60	1.66
1.97	x		0.35	0.25	37.50	153.28	0.02
-0.21	x		0.19	0.20	76.39	51.95	0.08
-		x	-	-	-	-	-
0.47	x		0.33	0.73	20.83	138.05	1.77
1.31		x	0.17	0.30	40.28	304.48	0.48
-		x	-	-	-	-	-
0.89	x		0.32	0.68	27.78	306.40	1.57
-		x	-	-	-	-	-
-		x	-	-	-	-	-
2.97		x	0.26	0.44	59.72	231.23	0.69
1.71		x	0.34	0.50	30.56	458.80	0.46
4.22	x		0.30	2.27	26.39	136.20	0.95
-		x	-	-	-	-	-
-		x	-	-	-	-	-
1.66		x	0.28	0.47	62.50	101.85	0.12
1.48		x	0.33	0.70	72.22	284.95	0.59
2.85		x	0.17	0.34	93.06	80.15	0.08
-		x	-	-	-	-	-
-1.37		x	0.11	0.94	43.33	144.20	0.98
-		x	-	-	-	-	-
7.72		x	0.34	0.64	100.00	392.45	0.09
15.75		x	0.11	0.48	41.67	239.48	0.89
-0.60		x	0.17	0.64	73.33	89.93	1.29
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
1.28		x	0.15	0.59	68.33	110.35	1.01
-		x	-	-	-	-	-
-		x	-	-	-	-	-
0.61		x	0.30	0.75	31.94	195.08	1.97
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
1.06		x	0.12	0.36	68.33	107.78	1.63

-		x	-	-	-	-	-
-		x	-	-	-	-	-
0.13		x	0.27	0.66	26.39	138.48	2.01
0.66		x	0.22	0.81	70.00	122.85	1.93
0.86		x	0.21	0.68	68.33	114.00	1.21
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
2.09		x	0.09	0.47	76.67	87.85	1.36
-		x	-	-	-	-	-
-		x	-	-	-	-	-
0.11	x		0.29	1.01	60.00	147.05	0.82
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-1.88		x	0.12	0.49	21.67	129.25	1.62
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
1.72		x	0.23	0.51	38.33	190.05	1.73
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-2.69		x	0.15	0.59	20.83	112.00	0.94
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-		x	-	-	-	-	-
-2.07		x	0.13	0.57	56.67	272.70	0.38

LOR

**Resilience analysis
ABIOTIC STRESS USFQ**

SPAD (Units)	Electrolyte leakage index (units)	TOLERANT	NOT TOLERANT	RESILIENCE VALUE (0 LOW, 12 HIGH)	RESILIENT	NOT RESILIENT
-	-		x			
41.38	0.14		x	6		X
41.29	-2.70		x	1		X
-	-		x			
41.91	4.38	x		8		X
-	-		x			
38.37	1.48	x		11	X	
-	-		x			
36.67	-5.83		x	2		X
0.00	26.69		x	8		X
-	-		x			
33.04	2.94	x		11	X	
32.88	-4.01	x		12	X	
-	-		x			
-	-		x			
-	-		x			
35.98	1.90		x	9		X
0.00	93.33	x		10	X	
-	-		x			
0.00	16.71	x		12	X	
38.37	3.08	x		9		X
49.60	-0.97		x	1		X
-	-		x			
28.13	8.62		x	10	X	
36.86	6.06		x	4		X
-	-		x			
38.07	0.39		x	0		X
31.86	3.66		x	6		X
-	-		x			
40.60	-0.07		x	5		X
32.64	1.23	x		12	X	

-	-		x			
-	-		x			
28.08	13.33	x	x	11	X	
34.38	4.25		x	7		X
			x			
44.73	42.09		x	4		X
-	-		x			
40.02	0.04	x		8		X
-	-		x			
43.02	-1.09		x	0		X
0.00	8.54	x		12	X	
0.00	70.45		x	9		X
-	-		x			
40.48	0.45		x	9		X
42.68	0.70		x	6		X
-	-		x			
43.35	2.55		x	9		X
-	-		x			
-	-		x			
38.63	3.08		x	8		X
39.84	4.08	x		8		X
41.12	1.15		x	11	X	
-	-		x			
-	-		x			
0.00	14.12		x	9		X
37.93	4.01		x	9		X
0.00	48.21		x	8		X
-	-		x			
42.06	-3.29		x	0		X
-	-		x			
0.00	21.37	x		8		X
45.10	-2.29		x	0		X
49.98	42.09		x	3		X
-	-		x			
-	-		x			
-	-		x			
-	-		x			
-	-		x			
-	-		x			
42.33	39.34		x	1		X
-	-		x			
-	-		x			
34.38	104.35		x	6		X
-	-		x			
-	-		x			
-	-		x			
47.78	-0.65		x	2		X

-	-		x			
-	-		x			
42.85	2.62		x	5		X
50.61	33.99		x	4		X
50.84	49.58		x	3		X
-	-		x			
-	-		x			
-	-		x			
-	-		x			
51.72	4.65		x	0		X
-	-		x			
-	-		x			
44.58	4.40		x	7		X
-	-		x			
-	-		x			
-	-		x			
-	-		x			
-	-		x			
44.87	-4.87		x	2		X
-	-		x			
-	-		x			
-	-		x			
44.86	-0.17		x	6		X
-	-		x			
-	-		x			
-	-		x			
47.59	-5.03		x	0		X
-	-		x			
-	-		x			
-	-		x			
-	-		x			
22.50	-6.14		x	0		X

JT