

2023 Kern County Potato Variety Trial

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UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

UC Cooperative Extension

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Kern County 2023 Potato Variety Trial

Introduction

In 2023, Kern County potato variety trial was conducted at the grower's field, and the trial comprised of Southwest Regional trial with 15 entries, the Kern County replicated variety selection trial with 7 entries, and the observational trial with 70 entries.

Southwest Regional Trial

This trial continues the association that the California potato industry has had with Colorado State University and Texas A & M University in the formation of the Southwest Region Trials. Advanced varieties are made available by CSU and TAMU each year for testing in regional trials. These varieties include russets, whites, reds, and specialty types. These varieties are replicated four times to minimize variations and to have an accurate measure of their true potential for yield, quality, and resistance.

The Kern County Potato Variety Selection Trial

The Kern County trial primarily consists of varieties developed by various university and the private breeders from North America. Selections in the replicated trial are replicated four times. Varieties in the replicated trial could be dropped after the first or second year, or go into a final third year of evaluation.

Observational Trial

Potato varieties with little history or data will be first looked at in the observational trial. It will consist of varieties from all breeders to test how they perform under Kern county conditions. Varieties that have proven merit in the observational trial will likely move up to the Kern County replicated trial the following year.

Planting and Harvesting



Planted on February 10, 2023.



Harvested on June 19, 2023.

Field Day



Field day, June 21, 2023.

Southwest Regional Trial

15 Entries

Highest Yield

- AC13125-4W (chipper), 236 cwt
- AC13125-5W (chipper), 220 cwt

Standards

- Yukon Gold (yellow), 189 cwt
- Red Lasoda (red), 222 cwt
- Atlantic (chipper), 136 cwt
- Snowden (chipper), 242 cwt



1. AC11436-1RU

182.85 cwt



2. AC11573-R/Y

179.99 cwt



3. AC13125-4W

236.51 cwt



4. AC13125-5W

220.22 cwt



5. CO14371-3RU

127.82 cwt



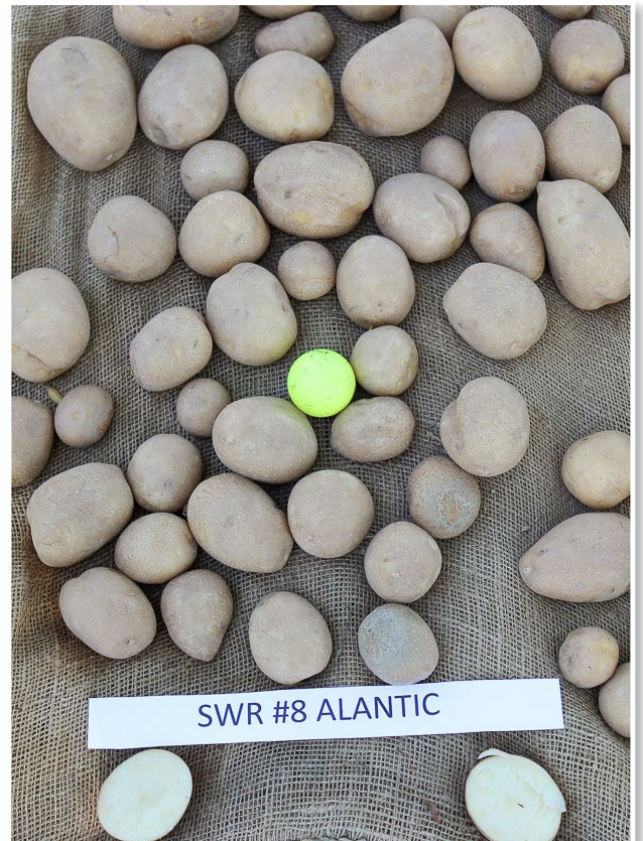
6. CO15084-4R

172.03 cwt



7. CO15016-1Ru

162.23 cwt



8. Atlantic

135.89 cwt



9. Russet Norkotah

144.67 cwt



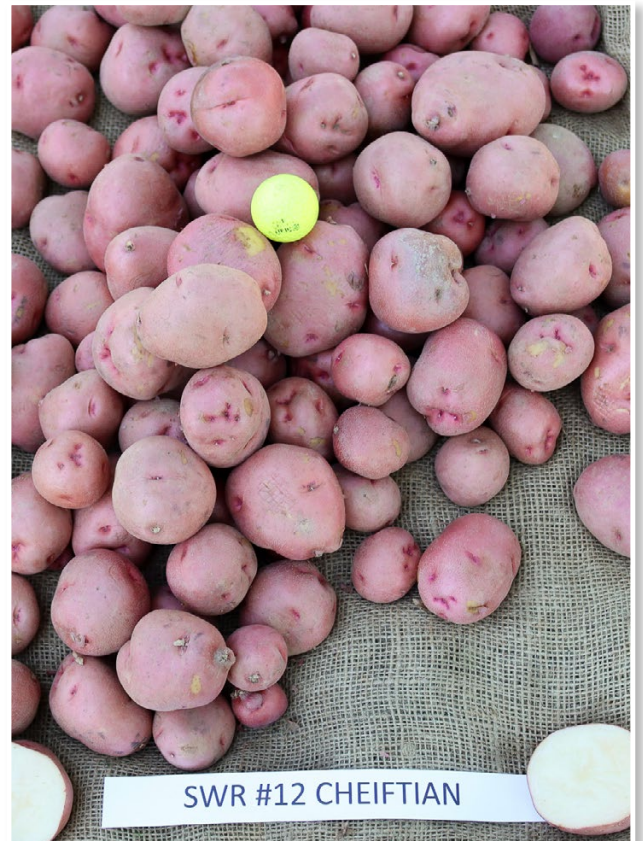
10. Snowden

239.11 cwt



11. Yukon Gold

189.39 cwt



12. Chieftan

190.92 cwt



13. Red Lasoda

222.46 cwt



15. RP-2011-02y

190.1 cwt



16. Aotx98202-1RU

90.96 cwt

Kern County Replicated Trial

7 Entries

Highest Yield

- Tessa, 303 cwt
- Camelia, 291 cwt
- NDA050237B, 276 cwt
- TX17797s-11Y/Y, 276 cwt

Standards

- Yukon Gold (yellow), 189 cwt
- Red Lasoda (red), 222 cwt
- Atlantic (chipper), 136 cwt
- Snowden (chipper), 242 cwt



20. Camelia 291.78 cwt



21. Coloma 218.68 cwt



22. TX17805- 8R/R 187.75 cwt



23. TX17797s- 11 y/y 275.96 cwt



24. Red Rascal

257.89 cwt



25.Tessa

303.22 cwt



26. NDA050237B- 1R

275.75 cwt

Observational Trial

70 Entries

Highest Yield

- Valore (Y), 415 cwt
- Acoustic (W), 400 cwt
- AC13126-1WADG(W), 373 cwt

Standards

- Yukon Gold (yellow), 189 cwt
- Red Lasoda (red), 222 cwt
- Atlantic (chipper), 136 cwt
- Snowden (chipper), 242 cwt
- Empress Baby, 213 cwt



101. ATTX 10007-1RU

265.85 cwt



102. NDTX 050184s- 1 R/Y

231.96 cwt



103. COTX 08121- 1 RU

182.95 cwt



104. NDTX 4271- 5R

188.26 cwt



105. IPB8343- 8 W/Y

280.15 cwt



106. COTX 94216- 1R

124.96 cwt



107. Empress Baby

213.58 cwt



108. Rediva

340.18 cwt



109. Vanilla

347.94 cwt



110. NDAF 11343B-1

251.15 cwt



111. Volare

415.32 cwt



112. NDTX 050169- 1R

161.72 cwt



113. Malou

239.72 cwt



114. PSS 13/041/2

140.89 cwt



115. Montana

365.91 cwt



116. Floridana

327.11 cwt



117. PSS 13/041/26

263.81 cwt



118. IPB8343- 2 W/Y

233.59 cwt



119. G12TT08803

246.66 cwt



120. IPB8343- 3 W/Y

200.10 cwt



121. NDTX081451CBS-1 Y/Y 278.92 cwt



123. CO13003-1RU 197.65 cwt



124. Christel 183.77 cwt



125. Maggie 294.44 cwt



126. Acoustic 400.21 cwt



127. Primabella 200.92 cwt



128. Crop 39 242.17 cwt



129. Bernice 245.84 cwt



130. COTX10080-2RU

207.46 cwt



131. RP2015-J

263.40 cwt



132. RP 2008-3W

202.55 cwt



133. RP 2009-5R

234.82 cwt



134. IPB8343- 5 W/Y

330.79 cwt



135. Sensation

306.28 cwt



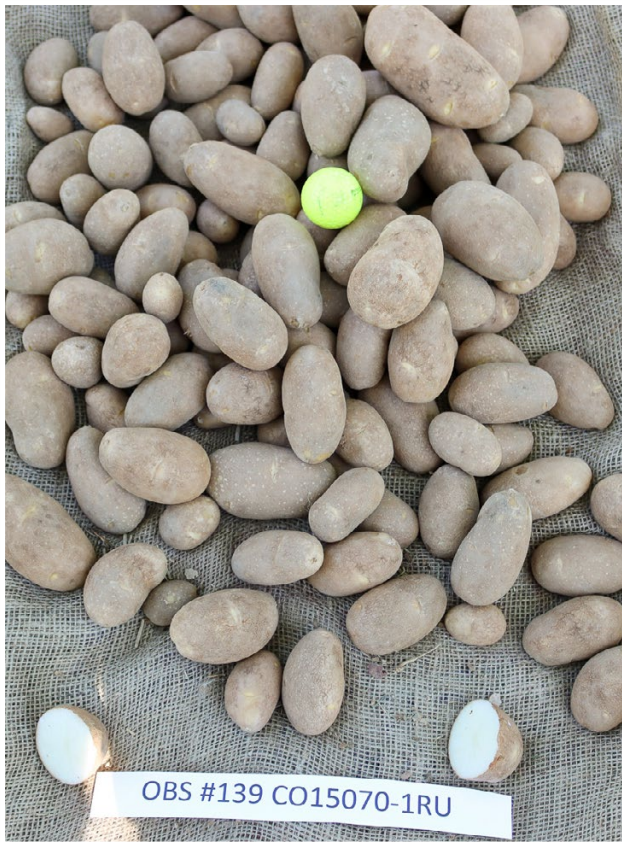
137. Caledonia Pearl

350.39 cwt



138. AC15304-4W

316.90 cwt



OBS #139 CO15070-1RU

139. CO15070-1RU

189.08 cwt



OBS #140 CO15113-1R

140. CO15113-1R

134.76 cwt



OBS #141 CO16154-2Y

141. CO16154-2Y

202.15 cwt



OBS #142 CO12235-3W

142. CO12235-3W

188.26 cwt



143. CO16279-5Y

218.07 cwt



144. CO16238-4RU

262.18 cwt



145. TC17742-1PW/PW

147.02 cwt



147. AC13126-1WADG

373.26 cwt



148. CO14226-3Y

375.30 cwt



149. CO13232-25W

153.14 cwt



150. AC12090-3RU

128.23 cwt



151. 05 6556.1

169.07 cwt



153. COTX08365F-3P/P 95.15 cwt



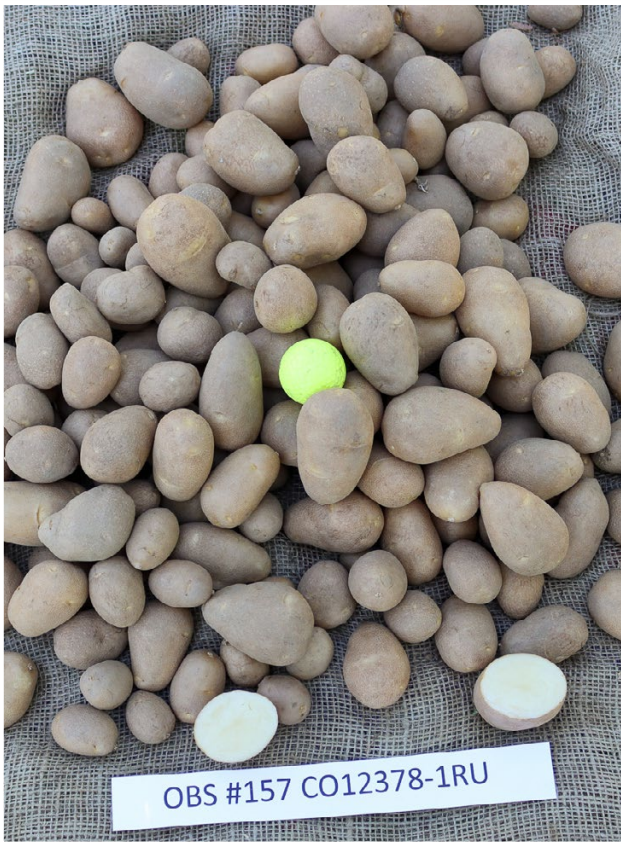
154. AC11494-6W 260.54 cwt



155. RP2011-02Y 168.66 cwt



156. CO12293-1W 189.90 cwt



157. CO12378-1RU

160.90 cwt



158. AORTX09037-1W/Y

249.52 cwt



159. COTX08063-2RU

254.83 cwt



160. CO16212-1Y

85.76 cwt



161. Natascha 228.69 cwt



162. Belmonda 301.38 cwt



163. Ruby Red 176.83 cwt



164. Giconda 209.09 cwt



165. Acoustic

356.92 cwt



166. Camelia

342.63 cwt



167. Rosi

282.60 cwt



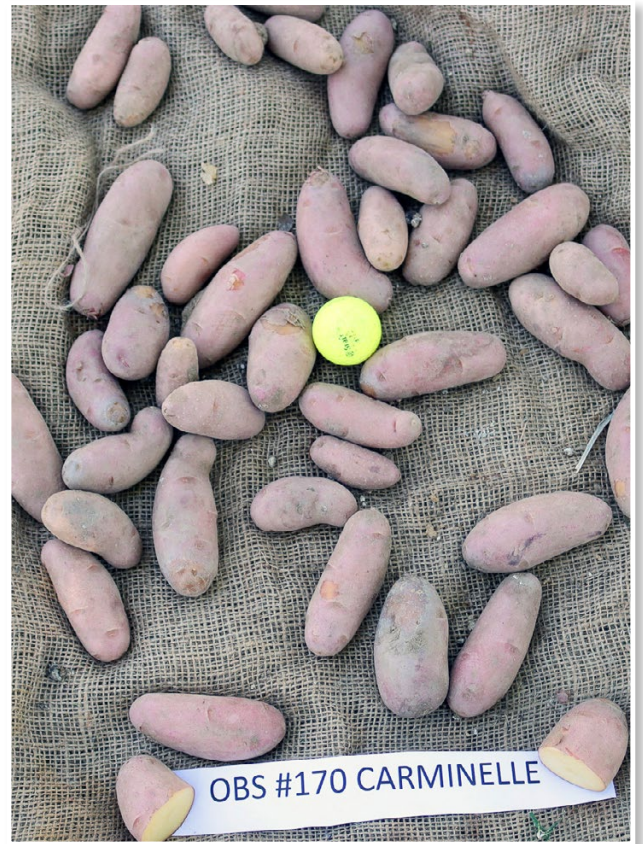
168. AC Robin

205.41 cwt



169. Audrey

134.36 cwt



170. Carminelle

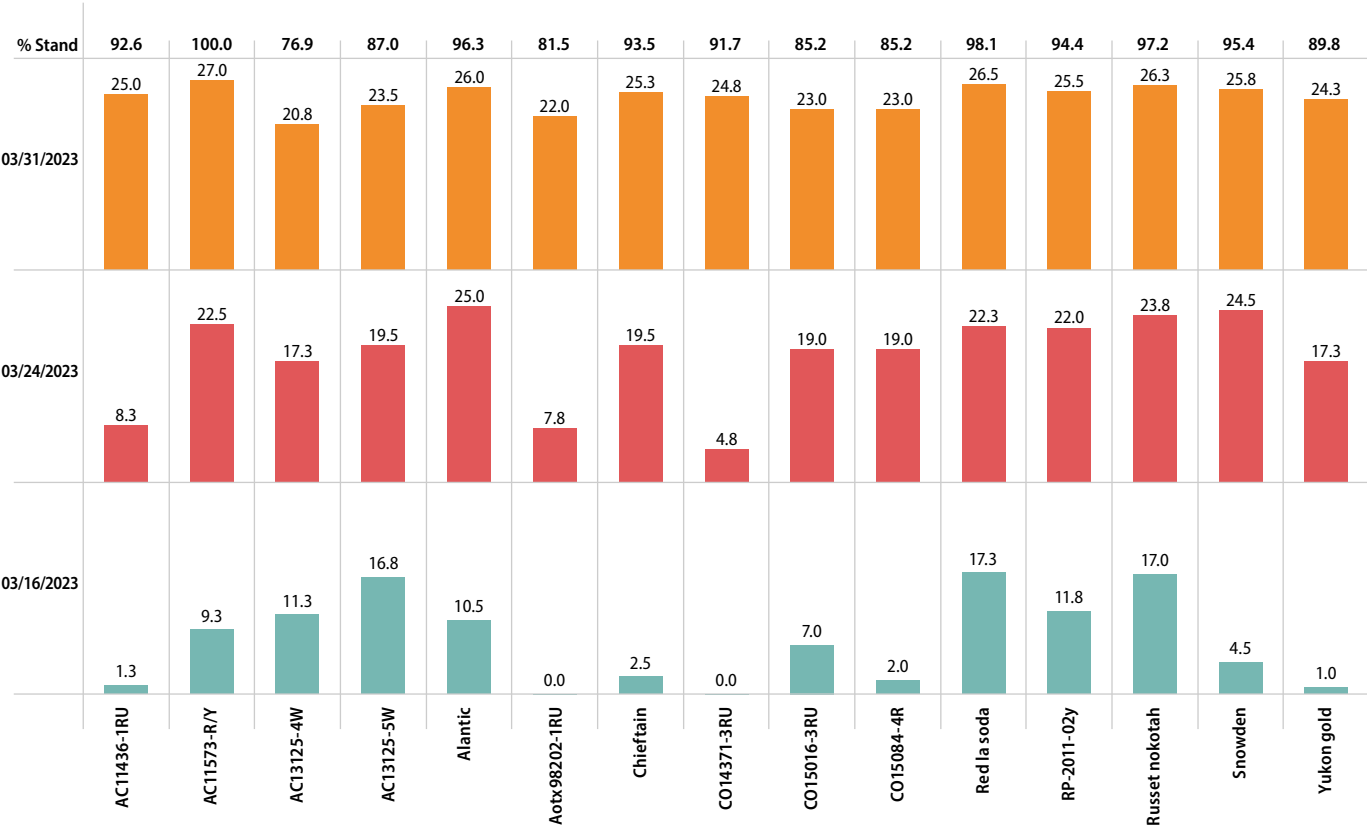
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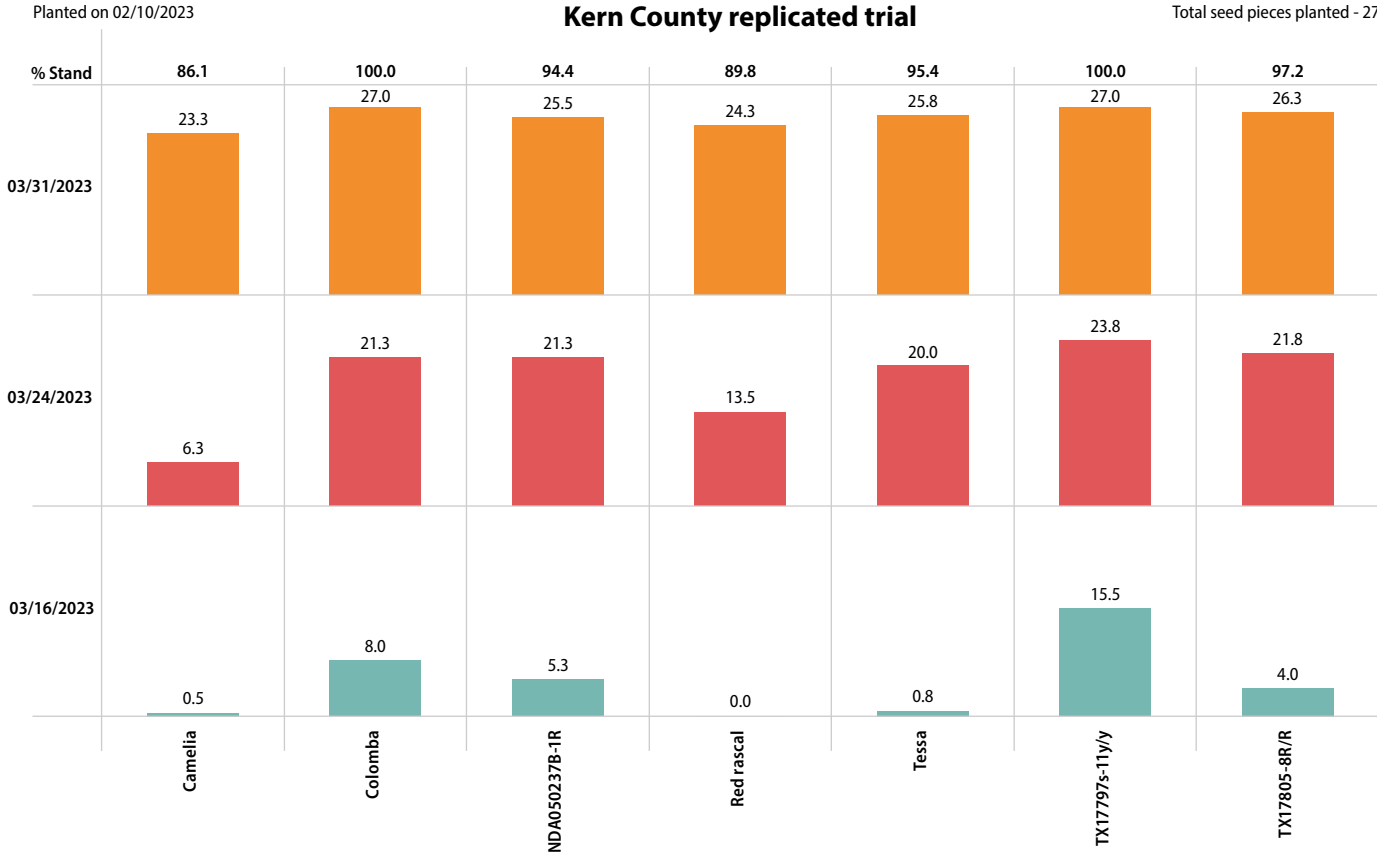
Plant Emergence Data

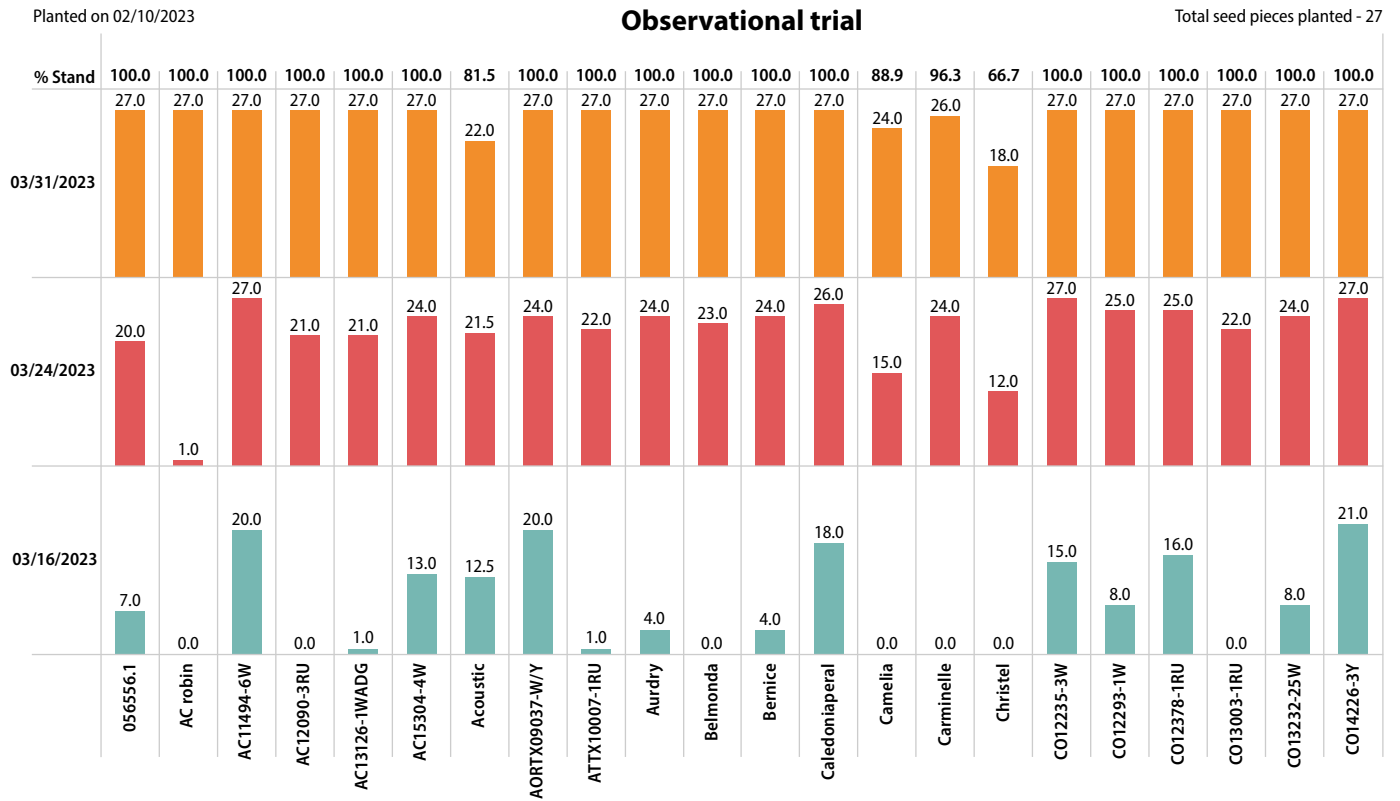
Planted on 02/10/2023

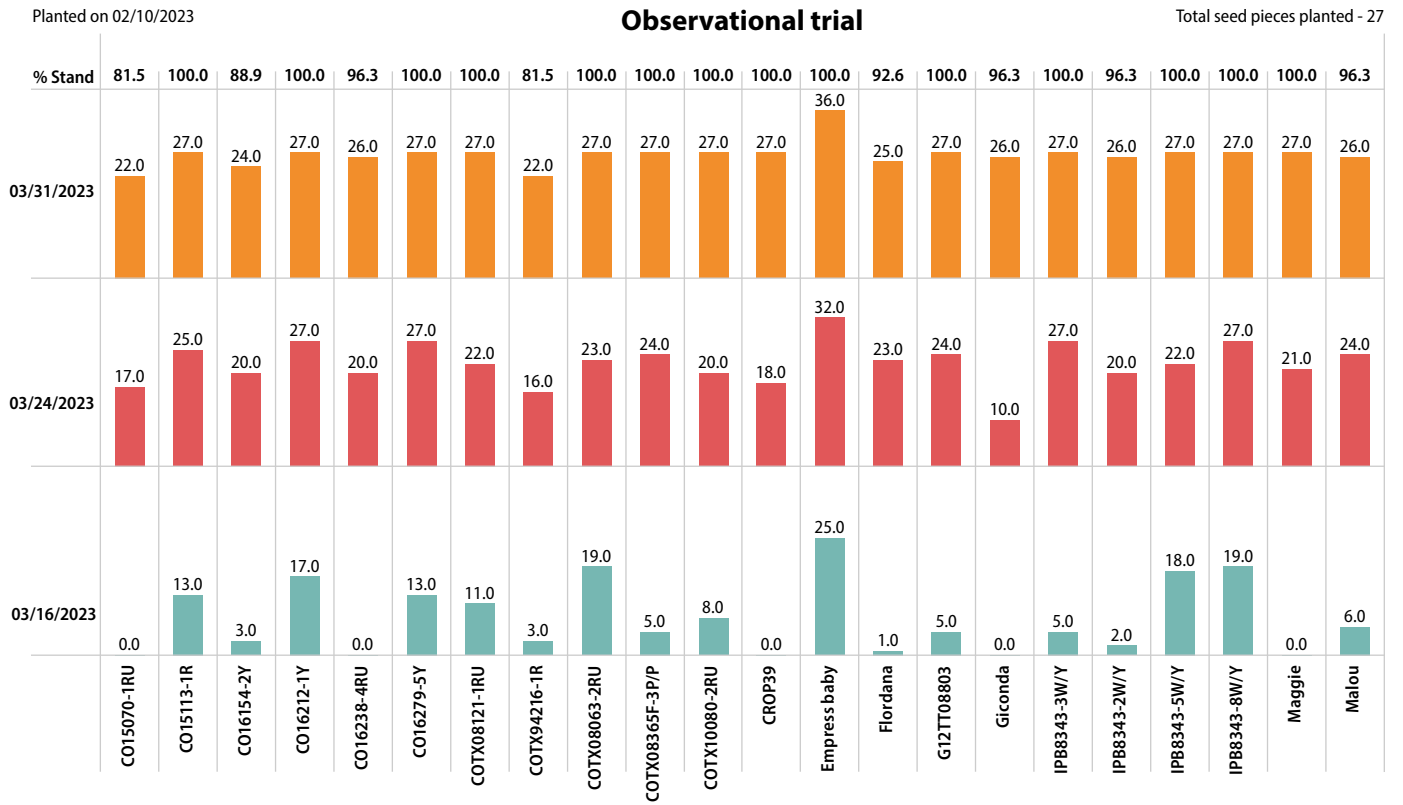
Southwest regional trial

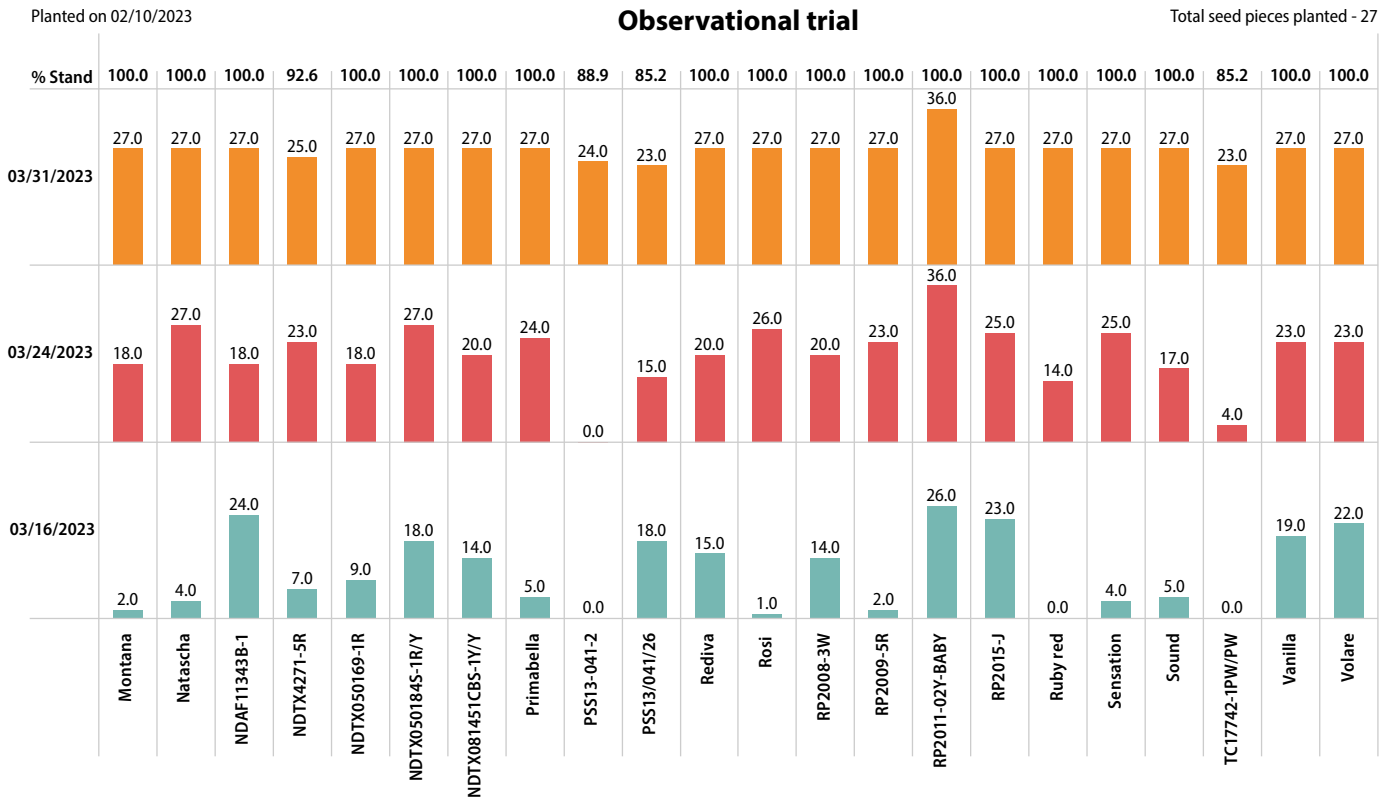
Total seed pieces planted - 27











Yield Data

Table 1: Tuber Yield and Size of Southwest Regional Trial Potato Entries 2023

Graded Tuber yield CWT/ A									
ID#	Clone	Type	0-4 oz	4-6 oz	6-10 oz	11 oz >	Culls	Marketable Yield	Total Yield
Russet									
1	AC11436-1RU	Russet	62.99	64.93	48.29	6.64	11.33	182.85 bac	194.18 bac
5	CO14371-3RU	Russet	80.14	29.61	13.99	3.06	16.84	127.82 dc	130.89 dc
7	CO15016-1Ru	Russet	39.20	66.06	44.21	12.76	6.13	162.23 bdac	168.36 bdc
9	Russet Norkotah	Russet	95.35	28.18	20.32	0.82	2.96	144.67 bdc	147.63 dc
16	Aotx98202-1RU	Russet	30.22	32.16	23.28	5.31	6.94	90.96 d	97.91 d
Specialty									
2	AC11573-R/Y	Red/Yellow	103.01	54.01	21.34	1.63	1.02	179.99 bac	181.01 bac
6	CO15084-4R	Red	97.71	52.58	21.75	0.00	2.55	172.03 bac	174.58 bac
11	Yukon Gold	yellow	36.25	81.98	57.68	13.48	5.92	189.39 bac	195.31 bac
12	Chieftain	red	31.96	109.96	38.69	10.31	2.55	190.92 bac	193.47 bac
13	Red Lasoda	red	34.20	130.48	49.4125	8.37	3.27	222.46 a	225.73 ba
15	RP-2011-02y	yellow	99.34	65.85	23.58	1.33	12.66	190.1 bac	202.76 bac
Chipper									
3	AC13125-4W	White	24.19	114.55	66.94	30.83	8.37	236.51 a	244.88 a
4	AC13125-5W	White	30.63	106.79	68.61	14.19	2.45	220.22 ba	222.67 ba
8	Atlantic	Chipper	39.1025	69.3225	25.1175	2.3475	2.86	135.89dc	138.75 dc
10	Snowden	chipper	65.34	131.9	40.4275	1.43	2.66	239.11a	241.76 ba

*Mean comparisons were performed using Tukey's-Kramer HSD; means with the same letter within columns are not significantly different

Table 2: Tuber Yield and Size of Kern County Variety Trial Potato Entries 2023

Graded Tuber yield CWT/ A									
ID#	Clone	Type	0-4 oz	4-6 oz	6-10 oz	11 oz >	Culls	Marketable Yield	Total Yield
20	Camelia	Yellow	32.87	161.52	72.38	25.01	8.47	291.78 a	300.26 a
21	Colomba	Chipper	71.46	100.36	46.86	0.00	3.77	218.68 ab	222.46 ab
22	TX17805- 8R/R	Red/Red	131.91	41.65	14.19	0.00	6.33	187.75 b	194.08 b
23	TX17797s- 11 y/y	yel/yel	138.75	101.18	36.04	0.00	0.00	275.96 a	275.96 ab
24	Red Rascal	Red/white	20.62	139.97	57.27	40.02	1.73	257.89 ab	259.62 ab
25	Tessa	Red	32.46	161.62	88.51	20.62	3.57	303.22 a	306.79a
26	NDA050237B- 1R	Red	39.51	154.98	60.54	20.72	1.63	275.75 a	277.39 ab

*Mean comparisons were performed using Tukey's-Kramer HSD; means with the same letter within columns are not significantly different

Table 3: Tuber Yield and Size of Observational Trial Potato Entries 2023

Graded Tuber yield CWT/ A									
ID#	Clone	Type	0-4 oz	4-6 oz	6-10 oz	11 oz >	Culls	Marketable Yield	Total Yield
101	ATTX 10007-1RU	Russet	35.94	123.74	51.05	55.13	3.68	265.85	269.53
102	NDTX 050184s- 1 R/Y	R/Y	177.64	29.81	24.50	0.00	0.00	231.96	231.96
103	COTX 08121- 1 RU	RU	65.34	73.51	44.10	0.00	3.27	182.95	186.22
104	NDTX 4271- 5R	Red	55.13	87.80	45.33	0.00	2.45	188.26	190.71
105	IPB8343- 8 W/Y	w/y	105.77	134.76	39.61	0.00	0.00	280.15	280.15
106	COTX 94216- 1R	Red	80.04	37.57	7.35	0.00	2.04	124.96	127.01
107	Empress Baby	Yellow	183.36	25.73	4.49	0.00	2.86	213.58	216.44
108	Rediva	Red	86.98	180.50	54.72	17.97	2.45	340.18	342.63
109	Vanilla	Yellow	109.44	194.39	36.35	7.76	2.45	347.94	350.39
110	NDAF 11343B-1	Red	113.94	30.63	103.32	3.27	0.00	251.15	251.15
111	Volare	Yellow	12.25	189.90	144.97	68.20	9.39	415.32	424.71
112	NDTX 050169- 1R	Red	130.68	15.93	15.11	0.00	0.00	161.72	161.72
113	Malou	Yellow	66.97	138.44	22.46	11.84	9.80	239.72	249.52
114	PSS 13/041/2	R/W	72.69	42.47	10.62	15.11	1.63	140.89	142.52
115	Montana	Yellow	122.92	162.13	69.02	11.84	5.31	365.91	371.21
116	Floridana	Yellow	61.66	182.54	62.89	20.01	2.04	327.11	329.15
117	PSS 13/041/26	Red/White	185.81	56.36	21.64	0.00	1.63	263.81	265.44
118	IPB8343- 2 W/Y	White/Yellow	139.66	70.24	15.52	8.17	0.00	233.59	233.59
119	G12TT08803	Red	117.61	87.39	37.16	4.49	0.00	246.66	246.66
120	IPB8343- 3 W/Y	w/y	99.64	69.02	24.50	6.94	2.86	200.10	202.96
121	NDT081451CBS-1 Y/Y	Yellow/Yellow	144.57	97.19	37.16	0.00	2.04	278.92	280.96
123	CO13003-1RU	Russet	65.34	78.41	37.98	15.93	0.00	197.65	197.65
124	Christel	Yellow	22.87	75.55	68.61	16.74	4.90	183.77	188.67
125	Maggie	Yellow	57.17	150.69	68.20	18.38	2.45	294.44	296.89
126	Acoustic	White	34.71	226.65	90.25	48.60	1.23	400.21	401.43
127	Primabella	Yellow	78.00	91.07	31.85	0.00	2.04	200.92	202.96
128	Crop 39	Red	51.46	118.43	43.70	28.59	0.00	242.17	242.17
129	Bernice	Yellow	51.46	153.14	35.12	6.13	5.31	245.84	251.15
130	COTX10080-2RU	Russet	100.87	65.75	40.84	0.00	10.62	207.46	218.07
131	RP2015-J	Yellow	227.06	24.91	11.43	0.00	0.00	263.40	263.40
132	RP 2008-3W	White	76.77	75.96	49.82	0.00	0.00	202.55	202.55
133	RP 2009-5R	Red	76.77	120.06	37.98	0.00	0.00	234.82	234.82
134	IPB8343- 5 W/Y	White/Yellow	225.42	91.07	14.29	0.00	0.00	330.79	330.79

Continued on next page

Graded Tuber yield CWT/ A									
ID#	Clone	Type	0-4 oz	4-6 oz	6-10 oz	11 oz >	Culls	Marketable Yield	Total Yield
135	Sensation	Yellow	108.22	158.45	35.53	4.08	2.04	306.28	308.32
137	Caledonia Pearl	Yellow/Yellow	150.69	148.24	38.39	13.07	0.00	350.39	350.39
138	AC15304-4W	White	93.11	138.85	84.94	0.00	4.08	316.90	320.98
139	CO15070-1RU	Russet	128.64	36.75	19.19	4.49	5.31	189.08	194.39
140	CO15113-1R	Red	104.95	11.03	18.79	0.00	0.00	134.76	134.76
141	CO16154-2Y	Yellow	130.68	51.05	20.42	0.00	0.00	202.15	202.15
142	CO12235-3W	White	97.60	70.24	20.42	0.00	7.76	188.26	196.02
143	CO16279-5Y	Yellow	164.98	40.02	13.07	0.00	0.00	218.07	218.07
144	CO16238-4RU	Russet	149.47	80.86	31.85	0.00	2.04	262.18	264.22
145	TC17742-1PW/PW	Purple white	86.17	35.94	24.91	0.00	3.27	147.02	150.28
147	AC13126-1WADG	White	20.01	239.31	85.76	28.18	6.13	373.26	379.38
148	CO14226-3Y	Yellow	22.46	227.47	120.88	4.49	0.00	375.30	375.30
149	CO13232-25W	White	91.07	42.06	20.01	0.00	1.63	153.14	154.77
150	AC12090-3RU	Russet	64.12	36.75	17.97	9.39	4.08	128.23	132.31
151	05 6556.1	yellow	55.54	76.77	36.75	0.00	0.00	169.07	169.07
153	COTX08365F-3P/P	Purple/Purple	69.02	9.80	16.34	0.00	0.00	95.15	95.15
154	AC11494-6W	White	130.68	104.14	25.73	0.00	0.00	260.54	260.54
155	RP2011-02Y BABY	Yellow/Yellow	135.17	10.21	23.28	0.00	0.00	168.66	168.66
156	CO12293-1W	White	73.10	80.45	36.35	0.00	0.00	189.90	189.90
157	CO12378-1RU	Russet	135.58	13.07	12.25	0.00	1.63	160.90	162.53
158	AORTX09037-1W/Y	White/Yellow	66.97	127.01	44.10	11.43	1.63	249.52	251.15
159	COTX08063-2RU	Russet	100.46	100.87	53.50	0.00	4.08	254.83	258.91
160	CO16212-1Y	Yellow	81.27	4.49	0.00	0.00	1.23	85.76	86.98
161	Natascha	Yellow	78.00	110.26	36.35	4.08	12.66	228.69	241.35
162	Belmonda	Yellow	107.40	130.27	63.71	0.00	2.86	301.38	304.24
163	Ruby Red	Red	63.30	92.29	21.24	0.00	0.82	176.83	177.64
164	Gioconda	Yellow	80.86	101.28	26.95	0.00	6.13	209.09	215.21
165	Acoustic		73.10	194.39	89.43	0.00	2.04	356.92	358.96
166	Camelia	Yellow	46.96	238.49	33.08	24.09	33.08	342.63	375.71
167	Rosi	Red	95.56	138.03	23.28	25.73	0.82	282.60	283.41
168	AC Robin	Red	82.90	91.48	31.04	0.00	8.17	205.41	213.58
169	Audrey	White	115.57	8.98	9.80	0.00	3.27	134.36	137.62
170	Carminelle	Red Finger-ling	-	-	-	-	-	-	-



Acknowledgements

Many talented and dedicated people assisted in these trials during the season.

The variety evaluation team is thankful to Jed Dubose, Jennifer Fernberg, Cristian Gutierrez, and Cristal Hernandez for their hard work.

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The team is indebted to David Holm, Maria Isabel Vales, Rob Wilson, Douglas Scheuring, and Jeffrey Koym for their guidance and collaboration on this trial.

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- USDA NIFA (Potato Breeding Research, award no.: 2021-34141-35449)

For more information

Contact Jaspreet Sidhu at jaksidhu@ucanr.edu.