

Late Harvest Western Regional Trial

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This trial duplicates the Early Harvest Western Regional Trial with respect to the cultivars evaluated except for the early control variety, Shepody. The trial area was fumigated in September 2006 with 40 gallons of metham sodium per acre. No potassium or boron was applied in 2007. Dry fertilizer was banded at planting providing 60 pounds of nitrogen, 80 pounds of P₂O₅, and 40 pounds of sulfur per acre. An additional 225 pounds of nitrogen per acre was applied through the water during the growing season. The trial received management inputs normal for potato production in this area. Seasonal rainfall and irrigation supplied about 30" of water. The trial was planted on April 5th. Vine kill occurred at 152 days after planting (September 4th) compared to 112 days for the early trial. Plots were harvested on September 17th. The harvest area was one row with 24 hills replicated 4 times for each cultivar. Plants were spaced at 9.25" in 34 inch rows.

Yields overall were about 6% higher than those produced in 2006 (Table 1, Figure 1), averaging 45 tons/acre compared to 42 tons/acre in 2006. Total yields ranged from a low of 670 cwt/acre for the Colorado selection CO97138-3RU, to a high of 1166 cwt/acre for the Tri-State cultivar A96104-2. Overall quality indicated by grade-out of U.S.#1 tubers was good, with Russet Burbank at 57% (69 % in 2006), exhibiting the lowest percent grade-out. Seven of the 19 entries had yields of U.S. #1 processing grade over 40 tons/acre, with a range of U.S.#1's from 77 to 96 %.

Specific gravities were up from previous years with a range from 1.063 for CO97138-7RU to 1.094 for AO96141-3. Russet Burbank was slightly higher than the trial average of 1.076 and Ranger Russet measured 1.085 (Table 1, Figure 2). Eight cultivars had a specific gravity of 1.080 or higher.

Internal brown spot was high in AOA95154-1, CO95172-3RU, and TXA549-1RU and notable in Russet Burbank at 11% (Table 2). Numerous selections had high levels of black spot bruise. Translucent end was high for the three Texas lines AOTX95265-2RU, AOTX95265-3RU and AOTX95265-4RU, sibling selections. Shatter bruise was notable in AC96052-1RU and TXA549-1RU.

Similar to the Early Harvest Western Regional Trial, many selections displayed desirable characteristics. However, none exhibited a strong overall superiority to the varieties currently being utilized for processing in the Southern Columbia Basin.

Table 1: Yield, grade, specific gravity, tuber shape, and USDA Fry color information for entries grown in the "Late Regional Trial" at Hermiston, Oregon, 2007.

Cultivar	Total	Total	Percent	U.S. #1's				Culls	Specific Gravity	Length/width ratio	Width/depth ratio	Remarks:
	Yield	U.S. #1's	U.S. #1's	>12 oz.	4-12 oz.	U.S. #2's	<4 oz.					
	<-----cwt/a----->		%	<-----cwt/acre----->								
RANGER	952	784	82	438	346	75	53	40	1.085	1.98	1.25	VERY NICE RANGER, CROOKS
R. BURBANK	863	488	57	138	350	163	93	119	1.079	1.97	1.23	DUMBBELLS, BOTTLENECKS, SMALL-ROUND
NORKOTAH	690	571	83	124	447	29	79	11	1.068	1.82	1.18	NICE
A95409-1	955	913	96	650	263	19	19	5	1.082	1.65	1.16	GOOD SHAPE, LARGE, TOO BIG
A96104-2	1166	893	77	357	536	108	103	62	1.073	1.83	1.21	VARI CR, BOTTLENECKS, SOME CROOKS
A97287-6	990	719	73	256	464	125	93	53	1.078	1.77	1.19	VERY NICE SHAPE, LOTS SMALL-ROUND, KNOBLETS
AC96052-1RU	750	640	85	175	465	19	90	1	1.081	1.61	1.23	UNIFORM, BLOCKY, GOOD SHAPE, LITTLE FLAT, BOTTLENECKS, DUMBBELLS
AO96141-3	1050	735	70	261	474	175	86	54	1.094	1.96	1.15	SOME CR, LITTLE THIN, BOTTLENECKS, DUMBBELLS
AO96164-1	1010	836	83	445	391	92	60	22	1.080	1.73	1.28	GOOD LENGTH, TOO FLAT, SOME COARSE RUSSET
AOA95154-1	1018	870	85	198	672	41	91	17	1.085	1.74	1.25	COARSE RUSSET, BLOCKY, LITTLE FLAT
AOA95155-7	894	701	78	203	498	84	72	38	1.073	1.88	1.15	LOTS BOTTLENECKS W/GROWTH CRACKS, NICE SHAPE LITTLE SOFT ROT
AOTX95265-2ARU	684	580	85	175	405	20	76	7	1.070	1.87	1.18	VERY NICE S/C/R, LITTLE FLAT, SOME SOFT ROT
AOTX95265-3RU	936	804	86	368	436	50	66	16	1.068	1.91	1.18	VERY NICE S/C/R, EYES?
AOTX95265-4RU	828	717	87	257	460	41	64	6	1.068	1.87	1.17	NICE SHAPE, PEAR, SOME BOTTLENECKS, DEEP EYES
CO95172-3RU	1024	880	86	315	565	73	67	4	1.080	1.70	1.19	VARI-CR, PEAR, OK, ATTACHED STEMS
CO97087-2RU	809	549	68	127	422	165	87	9	1.083	1.58	1.28	ROUGH, PEAR, LITTLE FLAT, SUNKEN EYES, DISCARD
CO97138-3RU	670	555	83	236	318	39	71	5	1.069	1.82	1.23	NICE SHAPE, CR
CO97138-7RU	968	763	79	367	396	86	86	33	1.063	1.75	1.25	LOTS BUD-END GROWTH CRACKS, BOTTLENECKS, LITTLE FLAT
TXA549-1RU	994	880	88	568	312	39	51	25	1.068	1.61	1.11	LOTS ROUND

Table 2: External characteristics, internal disorders, plant emergence, stand count and stems per plant for entries grown in the "Late Regional Trial" at Hermiston, OR, 2007.

Cultivar	Skin Color ¹	Shape Uniformity	Skin Set	Russetting	Eye Depth	Shatter Bruise	Powdery Scab	Growth Cracks	Hollow Heart	Brown Center	Int. Brown Spot	Black Spot	Vascular Discoloration	Translucent End	Total Internals	5/9 Emergence	5/24 Stand	Stems/ plant
	1-5=best	1-5=best	1-5=heavy	1-5=shallow	1-5=none	1-5=none	1-5=none	-----> % * <-----										%
RANGER	4.0	4.8	4.3	4.0	3.8	5.0	5.0	4.6	-	-	3.0	20.0	3.0	2.0	28.0	95	100	2.2
R. BURBANK	3.3	3.0	4.5	3.3	4.0	5.0	5.0	4.5	-	1.0	11.0	17.0	3.0	5.0	37.0	98	100	2.1
NORKOTAH	4.0	5.0	5.0	4.0	4.0	5.0	5.0	5.0	-	-	-	7.0	-	13.0	20.0	92	100	2.6
A95409-1	2.5	5.0	5.0	2.4	4.3	4.5	5.0	5.0	-	-	-	32.0	-	-	32.0	96	100	1.9
A96104-2	4.0	4.1	2.9	4.3	3.8	5.0	5.0	5.0	1.0	-	2.0	5.0	8.0	-	16.0	97	100	2.6
A97287-6	3.3	3.9	4.0	3.0	4.3	5.0	5.0	5.0	1.0	-	5.0	2.0	9.0	15.0	32.0	97	100	1.8
AC96052-1RU	4.4	5.0	3.9	4.4	4.3	3.5	5.0	4.9	-	-	5.0	20.0	-	-	25.0	25	98	2.6
AO96141-3	2.9	4.1	4.1	2.9	4.0	5.0	5.0	4.4	-	-	3.0	2.0	12.0	-	17.0	98	100	2.5
AO96164-1	3.8	4.5	4.3	3.8	4.0	4.3	5.0	5.0	-	-	-	15.0	5.0	-	20.0	91	100	1.9
AOA95154-1	3.5	4.5	4.3	3.8	4.8	5.0	5.0	5.0	-	-	45.0	10.0	-	-	55.0	95	100	1.9
AOA95155-7	3.5	5.0	2.3	4.0	5.0	4.8	5.0	4.4	-	2.0	2.0	-	1.0	-	5.0	58	100	2.1
AOTX95265-2ARU	4.0	5.0	4.9	4.0	3.9	5.0	5.0	5.0	-	-	1.0	7.0	-	32.0	40.0	88	100	1.9
AOTX95265-3RU	4.0	5.0	5.0	4.0	3.8	5.0	5.0	4.9	-	-	-	6.0	2.0	31.0	39.0	90	100	2.1
AOTX95265-4RU	4.0	5.0	4.6	4.1	3.8	5.0	5.0	4.6	1.0	-	-	7.0	1.0	42.0	51.0	85	100	2.3
CO95172-3RU	3.0	4.5	3.5	3.8	4.3	4.0	5.0	5.0	-	-	12.0	11.0	5.0	-	28.0	91	100	2.0
CO97087-2RU	3.8	3.8	5.0	3.8	4.0	5.0	5.0	5.0	-	-	-	19.0	2.0	-	21.0	78	100	2.5
CO97138-3RU	3.5	4.5	3.8	3.8	4.5	4.8	5.0	5.0	-	-	2.0	3.0	3.0	7.0	15.0	81	95	1.8
CO97138-7RU	3.0	4.8	3.3	2.8	4.0	4.8	5.0	3.6	1.0	-	-	19.0	4.0	-	24.0	99	100	2.3
TXA549-1RU	2.9	4.8	3.9	2.8	4.5	2.6	5.0	4.5	-	-	12.0	32.0	-	15.0	59.0	86	99	2.5

¹ 1=red, 2=white, 3=buff, 4=brown, 5=dark brown

*(-) indicates 0%

Table 3: Percent by count of tubers for each grade category for entries grown in the "Late Regional Trial" at Hermiston, OR, 2007.

Cultivar	<----- Grade Category ----->				
	U.S. # 1's		U.S. # 2's	< 4 oz.	Culls
	>12 oz.	4-12 oz.			
<-----% of tuber count----->					
RANGER	28.1	42.7	7.2	17.0	5.0
R. BURBANK	6.9	39.2	15.0	24.7	14.3
NORKOTAH	8.4	60.0	4.4	25.6	1.6
A95409-1	50.8	39.0	2.3	7.1	0.7
A96104-2	15.6	44.7	8.8	24.5	6.3
A97287-6	11.9	43.9	11.2	25.9	7.1
AC96052-1RU	10.6	58.6	3.1	27.6	0.1
AO96141-3	13.2	45.8	13.5	21.2	6.3
AO96164-1	25.3	43.9	10.9	17.2	2.6
AOA95154-1	9.8	61.1	4.7	22.1	2.3
AOA95155-7	12.0	54.5	8.2	21.1	4.1
AOTX95265-2ARU	13.0	56.2	3.2	27.0	0.6
AOTX95265-3RU	21.4	51.1	5.0	20.2	2.3
AOTX95265-4RU	16.9	56.3	4.8	20.9	1.1
CO95172-3RU	17.7	57.0	7.1	17.6	0.6
CO97087-2RU	8.1	47.1	18.1	25.2	1.4
CO97138-3RU	17.4	47.4	6.8	27.7	0.8
CO97138-7RU	21.1	42.8	7.8	25.8	2.6
TXA549-1RU	35.1	38.6	5.9	17.7	2.7

Table 4: Average tuber size for each grade category for entries grown in the "Late Regional Trial" at Hermiston, OR, 2007.

Cultivar	<----- Grade Category ----->					Overall Average tuber wt. Oz.
	U.S. # 1's		U.S. # 2's	< 4 oz.	Culls	
	>12 oz.	4-12 oz.				
<----- average tuber size (oz.)----->						
RANGER	15.8	8.2	10.6	3.2	8.2	9.7
R. BURBANK	16.8	7.5	9.2	3.2	7.0	7.3
NORKOTAH	14.9	7.6	6.7	3.1	7.3	7.0
A95409-1	16.3	8.6	10.2	3.4	9.6	12.2
A96104-2	15.5	8.1	8.3	2.9	6.6	7.9
A97287-6	15.8	7.8	8.1	2.6	5.6	7.3
AC96052-1RU	15.5	7.5	6.0	3.1	4.8	7.1
AO96141-3	15.1	7.9	9.9	3.1	6.5	8.0
AO96164-1	16.3	8.2	7.8	3.2	7.8	9.3
AOA95154-1	14.4	7.8	6.1	2.9	5.2	7.4
AOA95155-7	14.9	8.0	9.0	3.0	8.1	7.9
AOTX95265-2ARU	14.6	7.8	6.8	3.1	13.2	7.5
AOTX95265-3RU	16.1	8.0	9.3	3.1	6.4	8.8
AOTX95265-4RU	14.8	8.0	8.3	3.0	5.2	8.1
CO95172-3RU	14.7	8.2	8.5	3.1	5.1	8.5
CO97087-2RU	14.4	8.2	8.4	3.2	5.5	7.5
CO97138-3RU	16.1	8.0	6.8	3.0	7.7	8.0
CO97138-7RU	14.9	7.9	9.5	2.9	10.9	8.3
TXA549-1RU	17.6	8.8	7.1	3.1	10.0	10.8

(-) indicates 0%

2007 Late Regional Trial

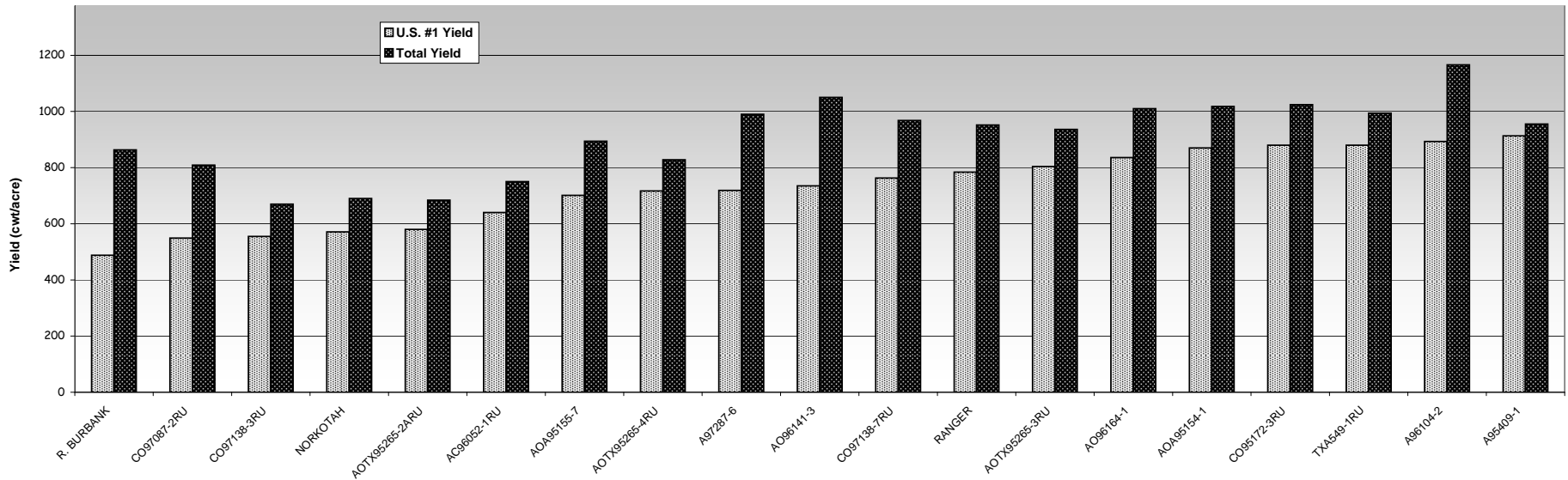


Figure 1: Total and U.S. #1 Yield for nineteen cultivars in the 'Late Regional Trial', Hermiston, OR 2007.

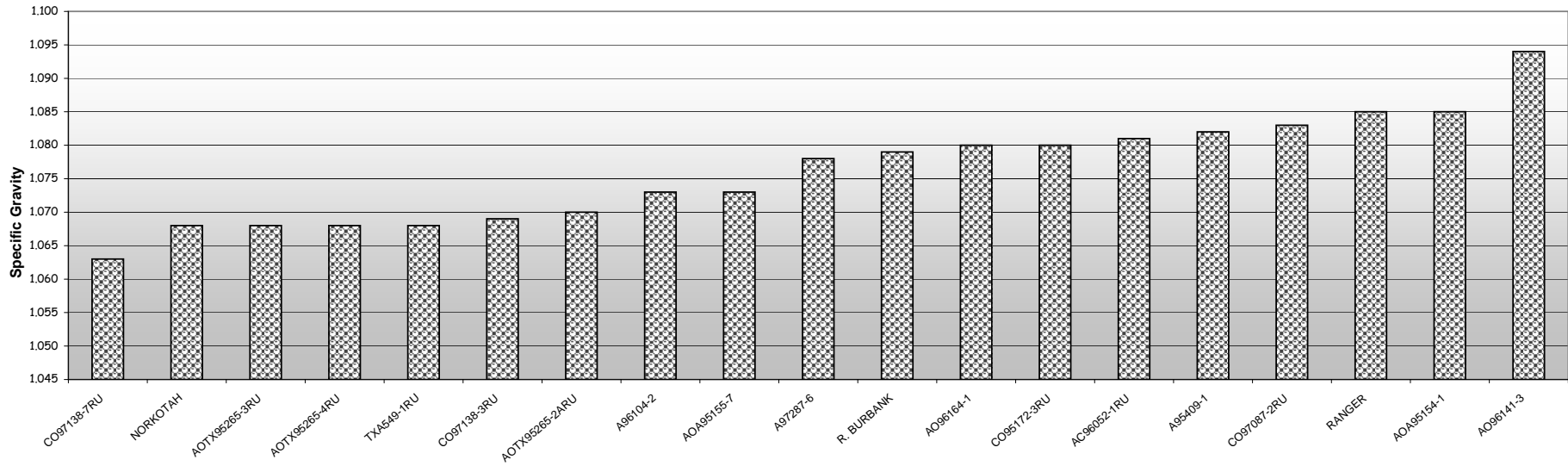


Figure 2: Specific Gravity for nineteen cultivars in the 'Late Regional Trial', Hermiston, OR 2007.