

Background

- Two reasons to evaluate the effects of washing on subsequent degreening.
 - Interest from a commercial packer remove
 - unmarketable fruit before degreening. – Improved ability to remove fruit with canker lesions before

packing.





Materials & Methods

- Fruit tested:
 - Red grapefruits, navel oranges, and 'Orlando' tangelos
- Harvested fruit were evaluated for initial color and exposed to different washing treatments.





~	R	esults				Norman and a second	and the second s
	•	Red gra	pefruit w	ashed o	on the r	esearc	h line.
			Degreening				
	Day	Treatment	Temp (°F)	ab	Hue	Chroma	Wt. Loss (%)
	5	Control	70	0.03ab	88.06bc	54.48a	1.07c
		Washed	70	-0.14c	97.70a	50.33b	1.41c
		Control	85	0.12a	82.86c	55.12a	4.10b
		Washed	85	-0.02b	91.34b	54.44a	5.46a
		P Value		0.0023	0.0023	0.0293	<.0001
	11	Control	70	0.14	82.06b	61.66a	2.05c
		Washed	70	0.05	86.91a	57.66b	2.67c
		Control	85	0.16	81.31b	57.37b	7.91b
		Washed	85	0.08	85.31ab	56.88b	10.17a
_		P Value		0.0562	0.0539	0.0087	<0.0001



 Red 				
1.00	d grapefruit w	ashed o	n the res	earch line
Day	Treatment	ab	Hue	Wt. Loss (%)
6	Control	0.09a	84.85 b	2.73
	Washed - Full	-0.09b	95.18a	2.76
	Washed - Short	-0.05b	92.94a	2.57
	P Value	0.0012	0.0012	NS
8	Control	0.12a	83.28b	3.35
	Washed - Full	-0.06b	93.57a	3.39
	Washed - Short	-0.01b	90.78a	3.12
	P Value	0.0015	0.0012	NS
13	Control	0.19a	79.28b	4.43
	Washed - Full	-0.03b	91.44a	4.47

		and the second		Automation T
Resu	ılts			2
 Red pack 	grapefruit v kingline.	washed (on a com	nmercial
Days	Treatment	ab	hue	Wt. Loss (%)
4	Control	0.09a	84.77b	1.61b
	HPW	0.06b	86.30b	1.91b
	Brush	0.03c	88.21a	2.81a
	B + HPW	0.02c	88.91a	2.93a

0.0011 0.0017

<0.0001

P Value

Re	sults				Part of the second seco
• N pa	avel orang ackingline.	e wash	ed on a	commerci	al
					Wt. Loss
Days	Treatment	ab	hue	Chroma	(%)
4	Control	-0.03a	91.88b	68.18b	2.55b
	HPW	-0.07b	94.01a	73.16a	2.86b
	Brush	-0.08b	94.46a	74.12a	3.50a
	B + HPW	-0.08b	94.77a	73.31a	3.98a
	P Value	0.0044	0.003	0.0007	0.0017

-	Re	sults				
	• '(P	Drlando' ta ackingline	angelo v e.	vashed	on a comr	nercial
	-	- HPW with h	alf the noz	zles off.		
	Days	Treatment	ab	hue	Chroma	Wt. Loss (%)
	4	Control	0.21a	77.94c	68.10d	3.16b
		HPW	0.14b	82.29b	70.92c	3.88a
		Brush	0.07c	86.09a	71.71b	4.3 9a
		B + HPW	0.06c	86.59a	72.46a	4.43a
		P Value	<.0001	<.0001	<.0001	0.0051

Results

• Decay of red grapefruit, navel orange, & 'Orlando' tangelos.

	Grapefruit	Orange	Tangelo
Treatment	(77 d)	(77 d)	(27 d)
Control	16.66	27.78	48.35
Brush	24.44	21.11	53.98
HPW	11.11	45.56	45.56
B + HPW	16.93	41.11	56.67
P Value	0.2876	0.0833	0.2899

Summary

- Color development of red grapefruit was significantly inhibited even if washed for only 1 minute.
- Often, washed fruit took about twice as long to degreen as did unwashed fruit.
- Using a commercial packingline, HPW washing usually delayed coloration less than brush washing or brush + HPW.

Results

- Treatments most inhibiting fruit color development also resulted in the greatest rate of water loss during degreening and storage.
- Washing treatments had no significant effect on decay during storage.

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