

Consumer Peach Purchasing Behavior and Preferences: Results from a Sensory Evaluation and Internet Survey

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Penn State Extension

Our overall goal

- To understand factors effecting fresh and value-added peach purchases and identify barriers that prevent consumers from purchasing the amount they desire.

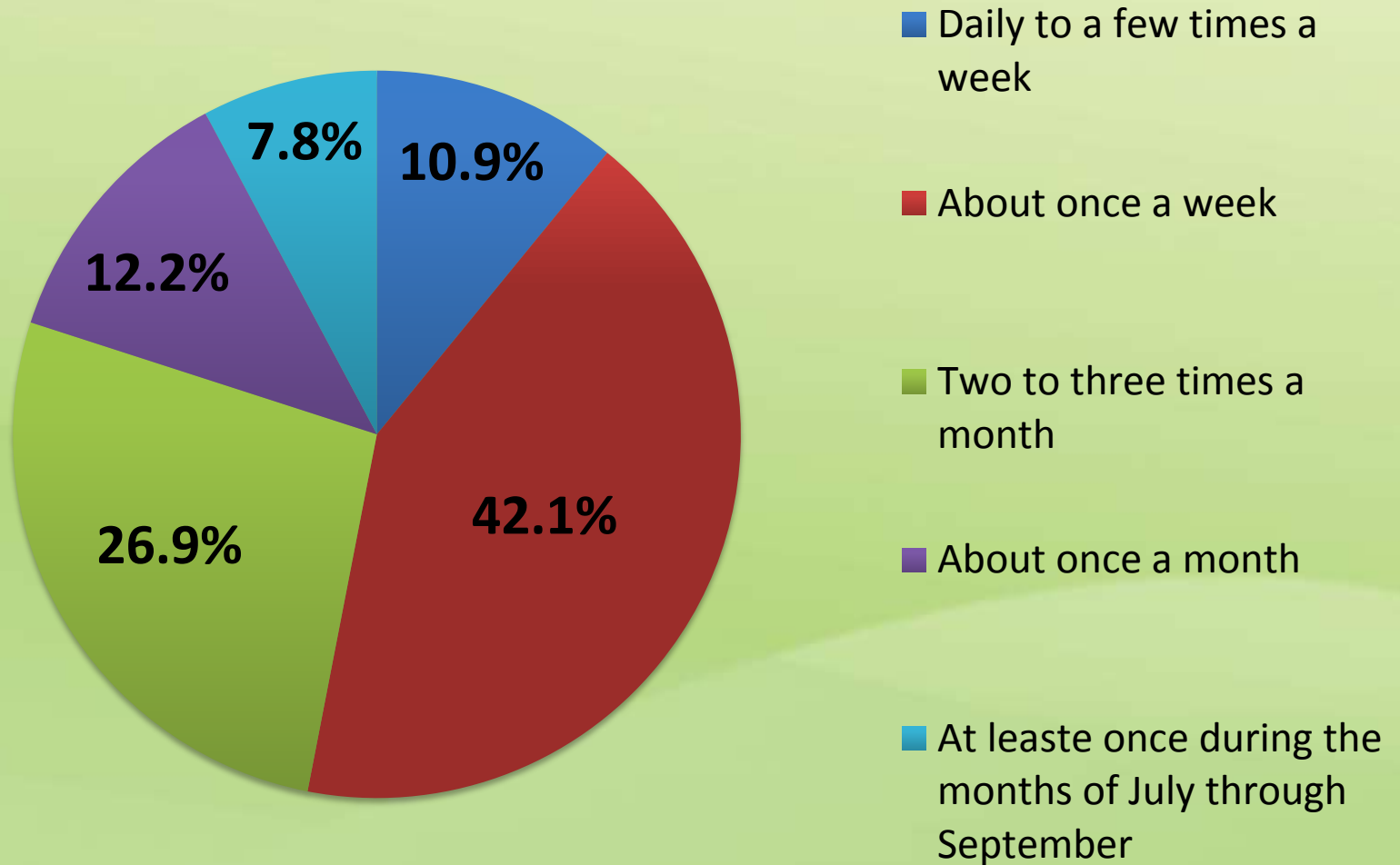
Data collection

- Focus group session conducted April 10, 2013
- Internet survey, June 19-25, 2013
- Sensory evaluation, August 7, 2013

15 minute Internet survey (19-25 June 2013)

- 1,093 mid-Atlantic residents completed the survey. Screener criteria included:
- Age 18 and older
- Not a member of the tree fruit industry or trade (e.g. retailer, distributor, peach grower)
- Responsible for at least half of the grocery shopping for the household
- Purchased and ate fresh peaches during the months of July through September

Average fresh peach purchasing frequency



72.1% of participants responded that fresh peaches are a planned purchase

How consumers use peaches they purchase

Purpose	Percent (%)
To eat fresh	98.3
Use as an ingredient in recipes and/or to bake with	36.3
Freeze for later use	8.0
Can in jars for later use	7.4

What would encourage consumers to purchase more fresh peaches than they typically do

- Three to four peaches are prepackaged (22.8%)
- Six to eight peaches are prepackaged (23.8%)
- Nutritional value is stated (27.4% increase)
- Storage information is present (35.3%)
- Information on how long peaches can be stored is present (40.0%)
- Family member or friend suggested the particular peach (41.6%)

Appealing peach characteristics

- Type of peach
 - Freestone variety appealed to 45.1% of participants
 - Clingstone variety 16.0%
 - No preference 38.9%
- Peaches size
 - 2.5 inches and larger in diameter appealed to 45.5%
 - Peaches smaller than 2.5 inches appealed to 19.4%
 - No preference 35.1%
- Peaches that are slightly soft (65.3%)
- Peaches that are sweet (88.6%)

Appealing peach characteristics: Peel color preference



Solid dark red peach peel

10.3%



Red over yellow peach peel

35.8%



Mottled red over yellow peach peel

22.0%

No peel color preference: 31.9% of participants

Processed product purchasing & interest

Product	Have purchased (%)	Interested in purchasing (%)
Canned or jarred peaches or slices	83.9	85.8
Non-alcoholic peach beverages (juice, tea, etc.)	63.0	76.0
Ready to eat snacks (dried peach slices, peach chips, etc.)	60.9	78.0
Preserves, jellies, jams, or butters	56.2	76.0
Ice cream or other frozen desserts	56.0	78.0
Pastries, cakes, or other bakery items	55.3	77.3
Oatmeal, toaster pastries, cereal, other breakfast foods	43.4	64.4
Smoothies and smoothie mixes	39.7	72.0
Alcoholic beverage (wine, brandy, hard cider, etc.)	38.4	56.1

Sensory evaluation

- Two hour session
- 100 prescreened participants
- Evaluations took place in the Sensory Evaluation Center on the University Park Campus of The Pennsylvania State University
- Individual booths under normal white lighting

Sensory evaluation

- Four peach samples were evaluated for liking/disliking on several attributes
 - Attributes: color, texture, sweetness, sourness, flavor, and overall



Brix and TA results

Peach Type	Brix	Titratable Acidity (g/L malic acid)
Redhaven (Picked 7/31/13)	7.1	1.64
Raritan Rose (Picked 8/5/13)	10.0	5.40
PF Lucky (Picked 7/31/13)	11.9	6.71
Blazingstar (Picked 8/5/13)	9.0	2.77

Sensory evaluation

- Peaches pitted, peeled and cubed
- Participants given the same amount of each sample
- Presented in a balanced randomized design
- Labeled with a 3-digit blinding code
- Compusense Five Software used for ballot presentation and analyses



Sensory evaluation-results

Attribute	Redhaven (Picked 7/31/13)	Raritan Rose (Picked 8/5/13)	PF Lucky (Picked 7/31/13)	Blazingstar (Picked 8/5/13)
Color ¹	7.07b ²	4.05c	7.77a	6.70b

¹A 9-point hedonic scale was used for evaluating liking with 9=like extremely, 8=like very much, 7=like moderately, 6=like slightly, 5=neither like nor dislike, 4=dislike slightly, 3=dislike moderately, 2=dislike very much, 1=dislike extremely.

² Means with different letters within rows are significantly different $\alpha=0.05$. Significance was determined using ANOVA followed by Tukey's HSD in Compusense[®] five software.

- PF Lucky received a significantly higher score than the other samples (mean of 7.77), which fell between 'like very much' and 'like moderately.'
- Redhaven (7.07) fell close to 'like moderately.'
- Blazingstar (6.70) fell between 'like slightly' and 'like moderately.'
- Raritan Rose (4.05) fell close to 'dislike slightly.'

Sensory evaluation-results

Attribute	Redhaven (Picked 7/31/13)	Raritan Rose (Picked 8/5/13)	PF Lucky (Picked 7/31/13)	Blazingstar (Picked 8/5/13)
Color ¹	7.07b ²	4.05c	7.77a	6.70b
Texture	6.89b	5.72c	7.64a	3.80d

- All four samples were significantly different from each other.
- PF Lucky received a significantly higher score than the other samples (mean of 7.64), which fell between 'like very much' and 'like moderately.'
- Redhaven (6.89) fell between 'like moderately' and 'like slightly.'
- Raritan Rose (5.72) fell between 'like slightly' and 'neither like nor dislike.'
- Blazing star (3.80) fell between 'dislike slightly' and 'dislike moderately.'

Sensory evaluation-results

Attribute	Redhaven (Picked 7/31/13)	Raritan Rose (Picked 8/5/13)	PF Lucky (Picked 7/31/13)	Blazingstar (Picked 8/5/13)
Color ¹	7.07b ²	4.05c	7.77a	6.70b
Texture	6.89b	5.72c	7.64a	3.80d
Sweetness	6.09b	4.74c	7.01a	4.60c

- PF Lucky received a significantly higher score than the other samples (mean of 7.01), which fell near 'like moderately.'
- Redhaven (6.09) fell near 'like slightly.'
- Raritan Rose (4.74) fell near 'neither like nor dislike.'
- Blazing Star (4.60) was not significantly different from Raritan Rose.

Sensory evaluation-results

Attribute	Redhaven (Picked 7/31/13)	Raritan Rose (Picked 8/5/13)	PF Lucky (Picked 7/31/13)	Blazingstar (Picked 8/5/13)
Color ¹	7.07b ²	4.05c	7.77a	6.70b
Texture	6.89b	5.72c	7.64a	3.80d
Sweetness	6.09b	4.74c	7.01a	4.60c
Tartness	5.98b	4.92c	6.68a	5.03c

- In relation to tartness, PF Lucky received a significantly higher score (6.68) compared to the other samples. This rating falls between 'like moderately' and 'like slightly.'
- Blazingstar (mean of 5.03) and Raritan Rose (4.92) were not significantly different from each other. Both samples fell near 'neither like nor dislike.' Redhaven (5.98) fell near 'like slightly.'

Sensory evaluation-results

Attribute	Redhaven (Picked 7/31/13)	Raritan Rose (Picked 8/5/13)	PF Lucky (Picked 7/31/13)	Blazingstar (Picked 8/5/13)
Color ¹	7.07b ²	4.05c	7.77a	6.70b
Texture	6.89b	5.72c	7.64a	3.80d
Sweetness	6.09b	4.74c	7.01a	4.60c
Tartness	5.98b	4.92c	6.68a	5.03c
Flavor	6.56b	5.18c	7.38a	5.02c

- PF Lucky received a significantly higher score than the other samples (mean of 7.38), which fell between ‘like very much’ and ‘like moderately.’
- Redhaven (6.56) fell between ‘like moderately’ and ‘like slightly.’
- Raritan Rose (5.18) fell between ‘neither like nor dislike’ and ‘like slightly.’ Raritan Rose was not significantly different from Blazingstar (5.02) in terms of flavor.

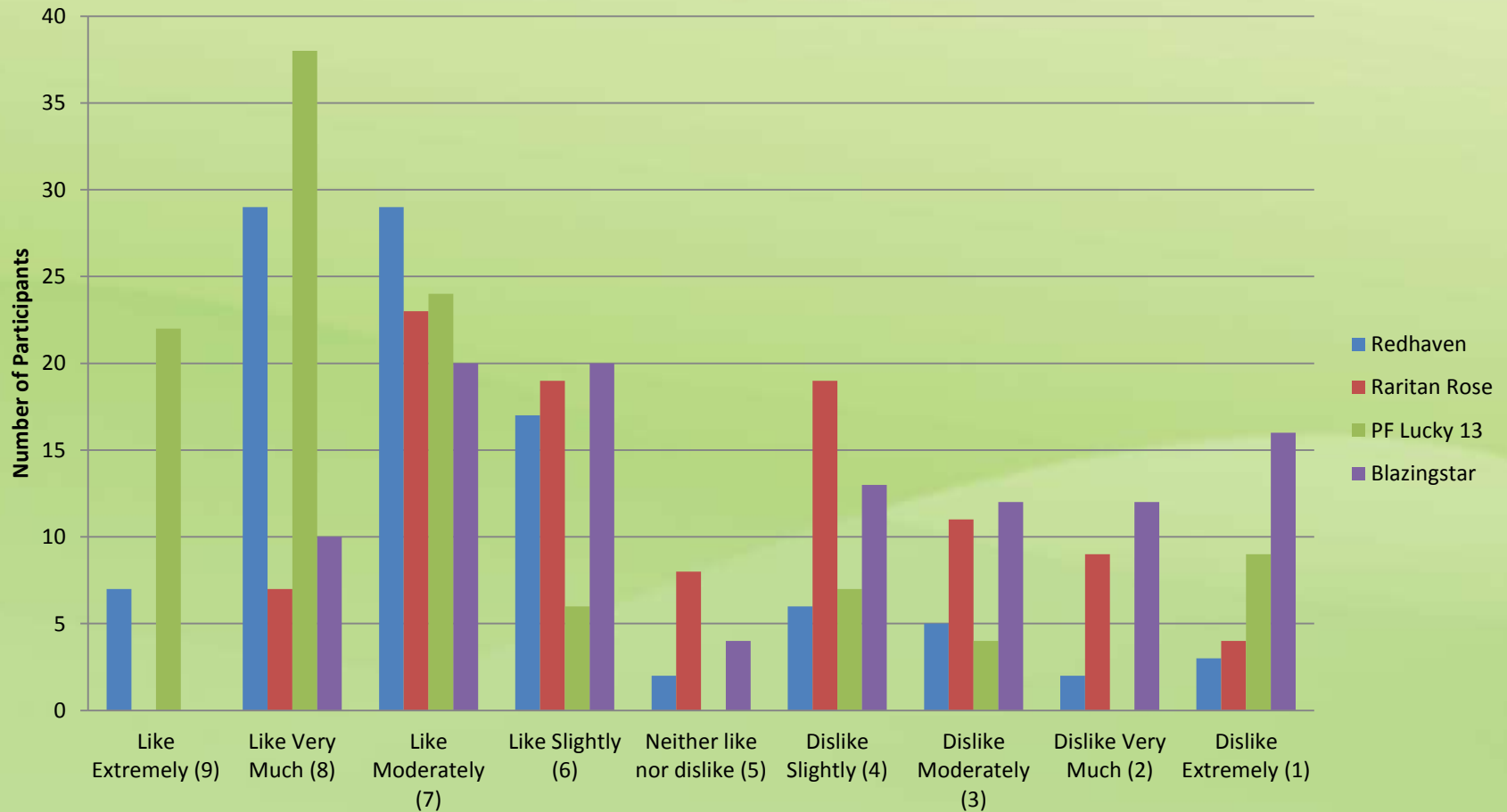
Sensory evaluation-results

Attribute	Redhaven (Picked 7/31/13)	Raritan Rose (Picked 8/5/13)	PF Lucky (Picked 7/31/13)	Blazingstar (Picked 8/5/13)
Color ¹	7.07b ²	4.05c	7.77a	6.70b
Texture	6.89b	5.72c	7.64a	3.80d
Sweetness	6.09b	4.74c	7.01a	4.60c
Tartness	5.98b	4.92c	6.68a	5.03c
Flavor	6.56b	5.18c	7.38a	5.02c
Overall	6.56b	5.02c	7.43a	4.81c

- In terms of overall liking, PF Lucky received a significantly higher score than the other samples (mean of 7.43), which fell between 'like moderately' to 'like very much' compared to the other samples.
- Redhaven (6.56) fell between 'like slightly' and 'like moderately.'
- Raritan Rose (5.02) fell close to 'neither like nor dislike.'
- Blazingstar (4.81) fell between 'neither like nor dislike' and 'dislike slightly.'

Sensory evaluation-results

Overall Liking of Peaches



Demographics

Gender	Percent (%)
Female	72.0
Male	28.0

Age	Percent (%)
18-20	2.0
21-24	8.0
25-34	23.0
35-44	21.0
45-64	45.0
65+	1.0

Thank you!
Any questions?

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