

Virginians Perceptions of Fresh Produce Food Safety



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Food Safety Law

- ▶ An estimated 48 million foodborne illnesses are reported each year in the U.S. with approximately 3000 deaths resulting.
- ▶ Food Safety Modernization Act signed into law in 2011 established some minimum standards based on known safety risks for produce growers to implement and document.
- ▶ Fresh produce contamination is a significant concern regardless of the produce grown, production system used, size of farm, or market outlet.
- ▶ Providing comprehensive food safety education from farm to fork is crucial to decrease the risk of outbreaks.



Objective



- ▶ Virginia Cooperative Extension (VCE) is developing educational programming to train commercial producers in Good Agricultural Practices (GAP) and Good Handling Practices (GHPs) in fresh produce.
- ▶ VCE recently created an interdisciplinary Fresh Produce Food Safety (FPFS) Team to spearhead statewide efforts in food safety education.
- ▶ Part of the programming sought consumer perspectives on food safety, especially produce.
- ▶ Our objective was to understand just how safe consumers perceive their fresh produce is.

Methods

- ▶ 54 item online survey (IRB x14-1214e)
- ▶ Administered with Qualtrics (Provo, UT) online platform
- ▶ Respondents were recruited from GMI Lightspeed (Warren, NJ), which maintains a panel of 5.5 mn/45 countries.
- ▶ Data collected from 15 to 22 September 2015.
- ▶ Stratified sample to collect approximately equal responses from three VA area codes: 540, 434, and 804 which represented geographically dispersed persons.
- ▶ Qualify by having been the primary produce shopper in the household, and have one of the three telephone area codes.

Results: Demographics

- ▶ 636 respondents
- ▶ 70.1% female and 24.6% male
- ▶ Mean age was 50 years
- ▶ Mean 1.3 adults and 0.8 children
- ▶ 20.3% had a high school education or less
- ▶ 34.0% lived in a suburban region
- ▶ Mean household income was \$65,615



Results: Attitudes

- ▶ 81% agreed or strongly agreed that "I have heard of some food safety issues."
- ▶ 81% agreed or strongly agreed that "I am confident that the produce I buy is safe to eat."
- ▶ 67.4% agreed or strongly agreed that "I don't have time to worry about food safety."
- ▶ 17% agreed or strongly agreed that "Consumers assume the produce they buy is safe to eat."
- ▶ 14% agreed or strongly agreed that "No one in my family has ever gotten sick from eating fresh produce."



Question	Percent agree or strongly agree
Organic produce is safer than conventionally grown produce.	85.4
Certified organic products are safer than conventionally grown products.	43.2
I rely on USDA inspectors to make sure my produce is safe.	56.9
I rely on the farmer to make sure my food is safe.	74.5
I rely on the store or seller to make sure my food is safe.	58.8
Local produce is safer than produce bought from other countries.	63.7

Organic produce was perceived as “safer” compared to conventionally grown produce.

Reliance on others for produce safety.

We asked participants how safe they believed each product type was. The six point scale ranged from 1= extremely safe to 5=not at all safe safe. Responses of “not sure” were omitted.

Produce	% Very or extremely safe	Mean score
berries	50.0	3.55
greens	44.7	3.47
herbs	45.9	3.55
lettuce	42.9	3.43
melons	60.7	3.79
sprouts	34.5	3.17
squash	58.3	3.76
tomatoes	54.7	3.69

Most safe

Least safe

Incomplete factorial conjoint design with 3 factors:



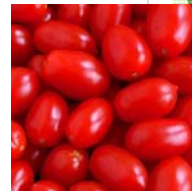
Mixed leafy greens



Alfalfa sprouts



Mixed berries



Grape tomatoes

Production methods: conventional, organic

Source: farmer's market, natural food store/cooperative, roadside stand, supermarket

Asked "how safe is this produce?" using 5 Likert Scale (5=extremely safe)



Q5.

Using the scale below, how safe do you believe this product is?

Fresh grape tomatoes, grown organically, purchased at a natural food store/cooperative.



Not at
all safe.

Somewhat
safe.

Moderately
safe.

Very
safe.

Extremely
safe.

Not
sure.

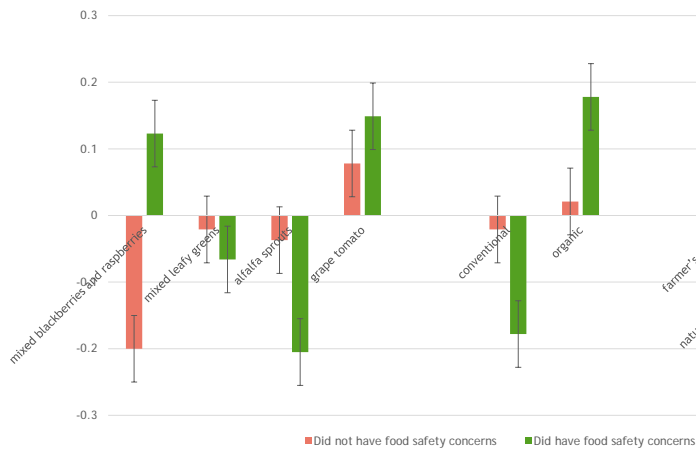
Attribute	Relative Importance
Produce	40.1%
Production method	17.0%
Purchase source	42.9%

Attribute	Relative Importance	Level	Utility Estimate	SE
Constant			4.010	0.013
Produce	40.1%	mixed berries	0.035	0.022
		mixed leafy greens	-0.025	0.022
		alfalfa sprouts	Least safe -0.098	0.022
		grape tomato	0.088	0.022
		Production method	17.0%	conventional
		organic	0.053	0.013
Purchase source	42.9%	farmer's market	-0.005	0.022
		natural food store/cooperative	0.121	0.022
		roadside stand	Least safe -0.110	0.022
		supermarket	-0.005	0.022

I am not concerned that a food safety issue will happen to me or my family. 50.6%

Relative importance of attribute	Total Sample	Did NOT have Food Safety Concerns	Did have Food Safety Concerns
	n=636	n=322	n=117
Produce	40.1%	41.0%	37.9%
Production method	17.0%	16.1%	20.3%
Purchase source	42.9%	42.9%	41.8%

Comparison of Perceived Safety (Utility Scores) for Subjects With and Without Food Safety Concerns



Conclusions

- ▶ Many (64%) said they don't have time to worry about food safety issues and most (81%) are confident the fresh produce they buy is safe.
- ▶ Organic (certified) produce was perceived as safer than conventionally-grown produce.
- ▶ Most rely on others (farmer, USDA, retailer) to insure the produce is safe to eat.
- ▶ Across the sample, produce and purchase source were equally more important than production method.
- ▶ Alfalfa sprouts, grown conventionally, and purchased from a roadside stand was considered the "least safe" produce among the alternatives presented in the study.

Conclusions

- ▶ Comparisons of those with (n=117) and without (n=322) food safety concerns produced some interesting differences.
- ▶ Those who did have food safety concerns placed slightly greater importance on production method; they considered organic production much safer compared to conventional production.
- ▶ Those with food safety concerns expressed stronger +/- opinions about the relative safety of produce, especially berries and sprouts. They considered supermarket produce as much less safe than farmer's markets or natural food store/cooperatives.

Conclusions

- ▶ The study provides a glimpse of food safety perceptions for Virginians.
- ▶ Shows awareness of relative safety for the product but shows mixed perceptions of safety by source and production method.
- ▶ Diverse perceptions will challenge educators as they seek to improve produce food safety which impacts the health and well-being of consumers.

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