

Possibilities for a Value-Added Tomato Industry in Casey County, KY: Fried Green Tomato Consumer Panel

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Introduction

Casey County, KY, is a significant producer of both tobacco and vegetables. Efforts were under way in 2000 to identify potential value-added activities for existing crops in Casey County. A basic survey of the frozen foods market revealed a potential for a frozen, battered, fried green tomato slice.

A simple, automated preparation of a frozen fried green tomato product was developed in August of 2000 at University of Kentucky food science facilities. Product was prepared using three breader formulations obtained from Blend-Pak, a commercial food service supplier in Bloomfield, KY.

A consumer taste panel was conducted at UK on August 30, 2000. The goal was to measure 1) consumer reception to a frozen fried green tomato slice; 2) consumer preference between tomato breading types; and 3) consumer willingness to purchase each slice in different restaurant and retail food scenarios.

Methodology

Batter mix and three kinds of breader mixes were obtained from Blend Pak, a food and baking ingredient company located in Bloomfield, KY. The breaders were standard lines manufactured by Blend-Pak: Meat and Vegetable Breader, Cornmeal Breader, and a Hot 'n Spicy Breader. Slices were prepared, battered, breaded, and flash frozen on August 7. Slices were removed from the blast freezer after 24 hours and frozen in air-tight containers until the panel was conducted on August 30.

Frozen slices were deep fried in vegetable oil for five minutes and served fresh to panel participants throughout the day. There were 99 panelists recruited from the UK and Lexington community. Panelists were compensated at the rate of \$20 per their participation in this survey.

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Results

The attached tables summarize the responses from the 99 panelists. No evaluation question had less than a 97% response rate. Participants were also asked to fill out voluntary demographic information, which was completed by 93% of the panelists.

Panelists liked the fried green tomato product thus far. There was no significant variation between breader types when panelists were asked to score each type on a scale of 1-5 (Table 2). Overall, however, these panelists preferred the Hot ‘N Spicy breader over the standard and cornmeal breaders.

The standard “Meat and Vegetable Breader” presented the most attractive product according to the panelists (Table 1). Nearly half the panelists preferred the appearance of this product first. Although 49% of the panelists ranked the “Hot ‘N Spicy” product first overall (Table 6), this breader was ranked as presenting the least attractive appearance. Future efforts may utilize different cooking times, breaders or sauces to compensate for this appearance.

Panelists ranked this product as being most likely purchased in a restaurant setting. There was significantly less interest in purchasing the product as a frozen food to be prepared at home. The average maximum amount panelists were willing to pay for two fried green tomato slices in a restaurant was not significantly different between the three recipes: \$2.13 for the cornmeal breader, \$2.26 for the hot ‘n spicy breader, and \$2.32 for the meat and vegetable breader.

Conclusions and Implications for Kentucky Tomato Production

A frozen then deep-fried fried green tomato product was ranked as being most desirable in a restaurant setting. Consumers in this panel liked a fried green tomato breader that either looks like other meat and vegetable breaders or is hot and spicy in flavor.

The average willingness to pay among these panelists for two fried green tomato slices in a restaurant is about \$2.25. This price may be great enough to pursue developing a frozen fried green tomato product for wholesale to restaurants. Pricing and flavor survey among actual restaurant patrons will be critical before entering the wholesale prepared, frozen food market. Nutritional analysis of the fried green tomatoes will also be critical for future product development and marketing efforts.

This taste panel indicates that there is potential for adding value to Kentucky tomato production at or very near the farm level. The process for adding breading to a tomato is a fairly simple one; however, commitment to developing a wholesale market and dealing with food regulatory structure will be critical for producers and others considering adding value to green tomatoes.

Table 1. Desirability of appearance (before eating)

Percent of Panelists

	Most Preferred	Second Preferred	Least Preferred
Meat and Vegetable	47.9%	33.3%	18.9%
Cornmeal	35.4%	35.4%	29.5%
Hot 'n Spicy	16.7%	31.3%	51.6%

Table 2. Average Texture and Overall Rating

Texture: Average ranking on scale of 1-5, 1 as "mushy, 3 as "normal, 5 as "crispy."

Overall Rating: 1—extremely disliked, 2—disliked, 3—indifferent, 4—liked, 5—liked extremely

	Texture	Overall Rating
Meat and Vegetable	3.46	3.89
Cornmeal	3.40	3.78
Hot 'n Spicy	3.17	3.82

Table 3. Average Likelihood of Purchasing Each Breader Type

Average ranking: 5=most likely to purchase, 1=least likely to purchase

	Meat and Vegetable	Cornmeal	Hot 'n Spicy
Side item at southern/homestyle cooking restaurant	3.76	3.53	3.37
As one of items offered on an appetizer assortment platter at a restaurant	3.52	3.21	3.29
As stand-alone appetizer at a restaurant	3.02	2.67	3.07
As frozen product for home preparation on stovetop or conventional oven	2.35	2.19	2.15
As frozen microwaveable product	2.23	2.20	2.03

Table 4. Ranking by Texture: Mushiest to Crunchiest

Percent of participants

	Mushiest	Mid-value	Crunchiest
Meat and Vegetable	28.6%	26.8%	45.5%
Cornmeal	28.6%	42.3%	29.3%
Hot 'n Spicy	42.9%	30.9%	25.3%

Table 5. Rank by Flavor: Blandest to Spiciest

Percent of participants

	Blandest	Mid-value	Spiciest
Meat and Vegetable	44.4%	46.9%	8.1%
Cornmeal	43.4%	49.0%	8.1%
Hot 'n Spicy	12.1%	4.1%	83.8%

Table 6. Rank by Overall Preference, Breader Type

Percent of participants

	Liked the Most	Mid-value	Liked the Least
Meat and Vegetable	28.6%	34.0%	36.7%
Cornmeal	22.4%	50.5%	27.6%
Hot 'n Spicy	49.0%	15.5%	35.7%

Table 7. Average amount willing to pay in a restaurant for two fried green tomato slices

Meat and Vegetable Breader	\$2.32
Cornmeal Breader	\$2.13
Hot 'n Spicy Breader	\$2.26

Table 8. Experience eating fried green tomatoes:

<i>I have eaten fried green tomatoes often (more than 6 times per year) and have liked them</i>	20.2%
<i>I have eaten fried green tomatoes occasionally (1-5 times per year) before and have liked them</i>	49.3%
<i>I have eaten fried green tomatoes before and disliked them</i>	3.0%
<i>I have never eaten fried green tomatoes before</i>	27.3%

Table 9. Consumer Demographic Summary

Number Responding: 94

Average Age: 34

Male: 38 respondents

Female: 56 respondents

		<i>Number Responding</i>	<i>Percent of Respondents</i>
Household Income:	\$0-\$14,999	30	32.6%
	\$15,000-24,999	16	17.4%
	\$25,000-34,999	14	15.2%
	\$35,000+	32	34.8%

Visits to a sit-down restaurant (not fast food) within the past 30 days:

Average number of visits 5.5

Number responding 93

Please offer any comments about this sample in the space below:

PLEASE RINSE YOUR MOUTH WITH SPRITE.

NOW EAT HALF OF SAMPLE B

Indicate the **texture (mouth feel)** of Sample B by checking the appropriate box below:

Sample B

“mushy”

“normal”

“crunchy”

Indicate an **overall rating** for Sample B:

extremely disliked

disliked

indifferent

liked

liked extremely

For each scenario below, please indicate on a scale of 1 to 5 *how willing you would be to purchase* a product like sample B if it were offered at a reasonable price (**5 = most** likely to purchase, **1 = least** likely).

Only rank those scenarios where you would be willing to purchase this product.

_____ As a side item at a southern/homestyle cooking restaurant

_____ As one of the items offered on an appetizer assortment platter at a restaurant

_____ As a stand-alone appetizer at a restaurant

_____ As a frozen product that may be prepared at home on the stovetop or in a conventional oven

_____ As a frozen product that may be prepared at home in a microwave oven

Please offer any comments about this sample in the space below:

PLEASE RINSE YOUR MOUTH WITH SPRITE.

NOW EAT HALF OF SAMPLE C

Indicate the **texture (mouth feel)** of Sample C by checking the appropriate box below

Sample C

“mushy”

“normal”

“crunchy”

Indicate an **overall rating** for Sample C:

extremely disliked

disliked

indifferent

liked

liked extremely

For each scenario below, please indicate on a scale of 1 to 5 *how willing you would be to purchase a product like sample C if it were offered at a reasonable price (5 = most likely to purchase, 1 = least likely).*

Only rank those scenarios where you would be willing to purchase this product.

_____ As a side item at a southern/homestyle cooking restaurant

_____ As one of the items offered on an appetizer assortment platter at a restaurant

_____ As a stand-alone appetizer at a restaurant

_____ As a frozen product that may be prepared at home on the stovetop or in a conventional oven

_____ As a frozen product that may be prepared at home in a microwave oven

Please offer any comments about this sample in the space below:

Your responses to these questions will be tabulated and used to evaluate the potential for adding value to tomatoes in Kentucky.

Thank you for your participation!

*THE BELOW QUESTIONS ARE **ENTIRELY OPTIONAL AND ARE NOT REQUIRED**, BUT WE WOULD APPRECIATE YOUR RESPONSE TO AS MANY OF THEM AS YOU LIKE SO THAT WE MIGHT MORE PRECISELY ANALYZE THE DATA COLLECTED IN THIS STUDY.*

THANK YOU!

Age _____

Gender _____ Male _____ Female

Annual Personal or Household Income

_____ 0 - \$14,999

_____ \$15,000-24,999

_____ \$25,000-34,999

_____ \$35,000 +

Number of visits to a sit-down restaurant (not fast food) within the last 30 days: _____

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