

A Grocery Store Test Market for Farmer Grown Shrimp that Utilizes Consumer Education

Final Project Report to the Federal State Marketing Improvement Program

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Project Title: A Grocery Store Test Market for Farmer Grown Shrimp that Utilizes
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The Issue

U.S. growers of freshwater prawns (*Machrobrachium rosenbergii*) need to be creative marketers, members of a marketing co-op or a combination of both if they are to be successful. U.S. farmers have been experimenting with growing prawns, which are also called freshwater shrimp, for more than 20 years. They have shown that this warm-water animal can be pond-grown in the summer, particularly in the South and lower Midwest, and successfully harvested before water temperatures drop below 16.7^o C (62^o F) (D'Abramo, et al. 2006) in the early fall. But cost of production is relatively high and developing profitable markets for U.S. farmer-grown prawn has not been easy. So prawn production has not grown.

U.S. consumers are familiar with and apparently love marine shrimp, consuming more of it than any other seafood. For many years, per capita shrimp consumption has been around 4 pounds per year (National Fisheries Institute, 2015). But consumers are not familiar with the freshwater version of shrimp so a market for them must be built. Freshwater prawns in the U.S. are a niche market and because of cost may remain in that category. With creative marketing, they can be sold profitably and provide supplementary farm income. However, it is a rare product that sells itself. Better ways of to market freshwater shrimp need to be found.

Nationwide in 2013, only 40 farms sold their prawns for about \$1.4 million at the farm gate, according to the most recently available USDA's Census of Aquaculture.³ Moreover, production is not growing as sales stood at about \$3 million in 2005 when 80 farms grew them. In 2013, Kentucky had more farms (8) growing prawns than any other state, followed by North Carolina with six and Ohio, Virginia and Hawaii with four farms each, according to the Census. However, Census of Aquaculture is dependent on self-reporting and it may not have enumerated all of the producers.

Markets for U.S. farmer-grown prawns include:

- Farmers' markets, where they are sold mostly head-off frozen.
- Pond side sales where they are sold fresh head-on.
- Occasionally seafood boils that are sometimes part of fall harvest celebrations.
- A few retail supermarkets where they are sold mostly fresh.
- Some farmers sell to local restaurants delivering frozen product directly.

Approach to the Problem

This project, which was funded by USDA's Federal State Marketing Improvement Program, examined whether two of the above undeveloped market channels could be expanded to increase sales for Virginia farmers. Experiments or market tests were done to see if it is possible to develop the supermarket channel and direct marketing channel, using shrimp boils.

In 2014 head-on fresh shrimp were sold in a two-day test market at a Wegmans in Fairfax, Virginia, near Washington D.C. The shrimp, for the Wegmans' sale, were grown by Jason King in ponds south of Richmond, Virginia.

Additionally, a fall harvest boil was hosted in 2015 at Shirley plantation, the oldest working plantation in Virginia. The shrimp for the boil were raised on the plantation, which is west of Williamsburg, Virginia. Two other smaller boils at restaurants were also done.

Summary of Results

The two day D.C. test market for Virginia farm-grown freshwater shrimp/prawns (*Machrobrachium rosenbergii*) showed these shrimp will sell to high income consumers even though most customers weren't familiar with the product. Almost 77% (70/91 respondents) of the surveyed buyers said they had never before purchased freshwater shrimp. Of those first time buyers, 83% said the shrimp tasted good or very good. Sixty-four percent of those first time buyers said they would buy again if the prawns were available at harvest the next year. Seventy-one percent of buyers who had previously eaten fresh water shrimp intended to purchase next year.



About 54% of the 70 first time buyers said the appeal of trying freshwater shrimp was a primary purchase motivator. The second most important motivator (21%), for this group, was the opportunity to support locally grown food.

Just harvested freshwater shrimp.



The freshwater shrimp display at Wegman's in Fairfax, Virginia. The shrimp were sampled by customers to assist them in their buying decision.

Customers, who promised to mail back reactions after cooking the prawns at home, were given surveys. A total of 115 customers agreed to cook the shrimp and then mail back the survey. Ninety-two actually did. Nearly all of the returned surveys were completely filled out. The store \$15 giftcard that customers received for mailing the survey back helps explain why 80% of the customers who received the survey mailed them back.

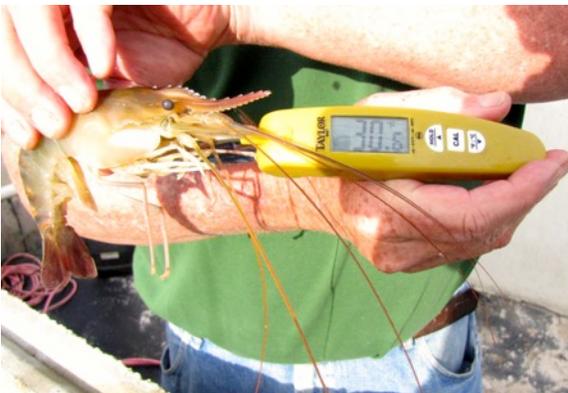
Another purpose of the test market, which occurred on September 27 and 28, 2013, was to find out if consumers would buy head-on prawns. Because of government regulations, freshwater shrimp aren't usually allowed to be headed pond-side and then sold. If consumers buy head-on, it would obviate the need for processing for at least some production. In Europe, Asia and elsewhere, consumers often eat head-on shrimp; but the U.S. market is almost entirely head-off. Demonstrators at the shrimp display showed customers how to taste the savory broth from the head and encouraged them to try the prawns with the head-on.



Customers could sample freshly cooked shrimp at the booth, where they could also ask the demonstrators questions.

Enzymes in the hepatopancreas, the digestive gland in the head of the shrimp, can degrade the quality of the tail meat, giving the head-on product a short shelf life. However, if the shrimp is harvested carefully, cooled rapidly, and kept cold these shrimp have a shelf life of about three days, although longer times have been reported (Tidwell and Coyle). Those who like the head-on product generally think it is more flavorful. Of those who bought head-on, 72 % agreed or strongly agreed that they like the taste and experience of head-on shrimp.

The shrimp for the Wegman's test market were grown in Virginia Aquafarmers Network member Danny Shoemsmith's pond near Chester, Virginia. Prior to harvest farmers attended food safety and good manufacturing practices classes. Pond water quality tests were performed by a certified lab. All tests showed excellent water quality. The results were provided to the retailer. At harvest the head-on shrimp were put through two washes and then plunged into a pondside tank containing a saltwater ice slush of about 3% salt. The shrimp were cooled to below 32° F, a process which took 15 to 20 minutes.



To preserve quality the shrimp were chilled to less than 32° F at the pond.

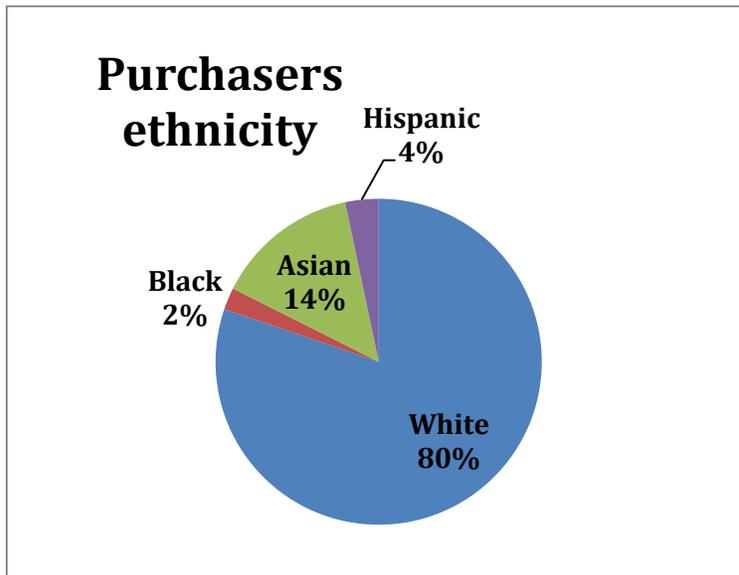
The shrimp were then layer packed in ice and shipped by refrigerated truck to a nearby processor. The processor's employees clipped the animals' very sharp rostrum or head horn to eliminate the possibility of a puncture wound for customers who purchased head on shrimp. The shrimp were then repacked in alternating layers of ice and shrimp. Only 30 pounds of shrimp were put in each box that normally contains 50 pounds of shrimp. This allowed the addition of extra ice to the box in order to

insure all the perishable head-on shrimp were chilled. The shrimp were then shipped by refrigerated truck to a Washington, D.C. distributor who in turn took them to the store, where they were offered for sale in less than 24 hours after harvest.

Head-on shrimp often aren't available in U.S. marketing channels and hence consumers' generally are not familiar with them. Getting consumers to buy head-on was more difficult than getting them to buy head-off. This was particularly true if buyers had not previously purchased freshwater prawns or had experience with head-on shrimp. Only 10% (7/70) of that group tried head-on. However, if the first time buyers of freshwater shrimp previously purchased head-on marine shrimp they were more likely to try head-on freshwater. Almost 19% (13/70) of those with head-on experience but no previous freshwater purchases, elected to try head-on. Altogether 71% per cent of first time freshwater buyers declined to buy head-on.

Buyers, with previous freshwater prawn experience, were more amenable to head-on purchase. About 48% (10/21) of that group, bought head-on. This despite the fact, that the store priced head-on and head-off shrimp identically at \$15.99. While consumers may not know what the shrimp tail percentage yield from whole shrimp is, they probably are aware that the same price for both forms would be unusual. The investigators had no control of store pricing. They asked for differential pricing between head-on and headed. But after making a call, the seafood department manager said prices were set up that way and he couldn't change them.

The fact that about half the consumers, with previous purchases chose to purchase



head-on under that unusual pricing schema indicates customers with knowledge of head on have a strong preference for it.

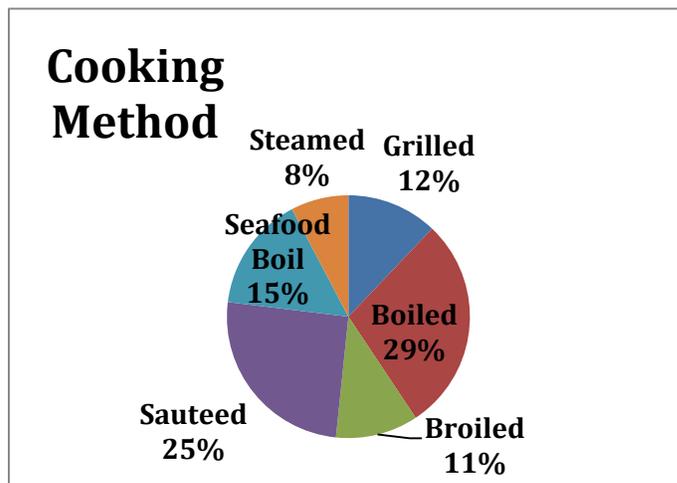
The equal price no doubt confounded the head-on or headed choice, but interestingly enough, 35% of those who declined to buy head-on, said they would do it next year if the product was offered again.

As a group, Asian and Hispanic customers were more likely to purchase the prawns with the head-on than Caucasian buyers. Perhaps because of cultural food traditions, 56% of the Asian and Hispanic buyers (9/16) bought head-on while only

29% of Caucasian buyers (21/73) did so. In Brazil, for instance, shrimp and prawns are nearly always served head-on.

About 350 pounds of whole weight equivalent just harvested fresh shrimp were sold to retail consumers at a price of \$15.99 a pound. About 60 pounds of product was used for demonstration. Both the store and Tech researchers prepared signs telling customers about the prawns and explaining that they were locally grown by a Virginia farmer. An informational pamphlet with recipes was distributed. In addition to the recipes, the pamphlet encouraged purchasers to try a seafood boil. Detailed planning instructions for the boil were created. The pamphlet also gave a YouTube link to a 10 minute video that showed how to do the shrimp boil on a stove. A web reproduction of the brochure can be found on the Virginia Tech Extension website at: http://www.pubs.ext.vt.edu/CV/CV-31/CV-31_pdf.pdf. The YouTube video, also on the Virginia Tech website, can be found at: <https://www.youtube.com/watch?v=Zdr3P8wfg98&feature=youtu.be>

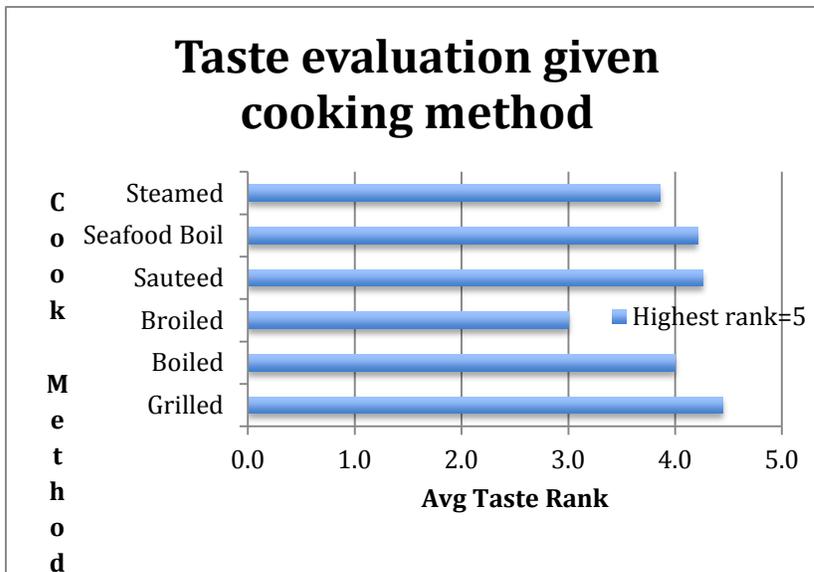
Several people added notes on their returned surveys saying they enjoyed a prawn/seafood boil at home. It was the third most popular cooking method. About 15% (14/91) of the respondents did a seafood boil, which in addition to the shrimp usually has boiled corn on the cob, sausage and small redskin potatoes. Chefs at the store prepared a sample boil and displayed it at the prawn booth. Perhaps store displays, the brochure and YouTube video encouraged them, once they got home. Initially, while the respondents were in the store, the boil idea was a less important reason for purchasing, as only 8% (7/92) said that was the reason they bought because “the seafood boil appealed to me.”



Boiled shrimp on the stove was the most popular method of preparation with 29% of respondents preparing it that way. Sautéed was the second most popular preparation method at 25%.

Cooking methods affected purchasers' evaluations of the taste of the shrimp. Grilled shrimp got the highest evaluation with a mean of 4.5 on

a five point scale. The 4.5 rating was halfway between agree and strongly agree. Grilled shrimp also had the smallest standard deviation in the evaluation of cooking methods. Sautéed, at 4.3, and seafood boil, at 4.2, received the next highest evaluations. At 3.0, broiled shrimp received the lowest evaluation. About 8% of the purchasers said they bought the shrimp in order to try an all-in-one boil. However, once they got home about 15% of the customers chose to prepare a boil.

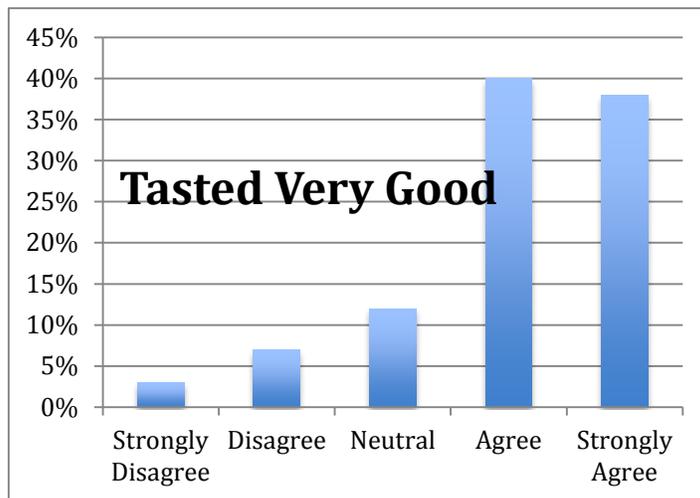


No survey question asked purchasers to compare saltwater shrimp with the freshwater prawns. However, some respondents offered comments that indicated a split between those who preferred the milder sweeter taste of fresh water prawns and those who liked the more pronounced

taste of saltwater shrimp.

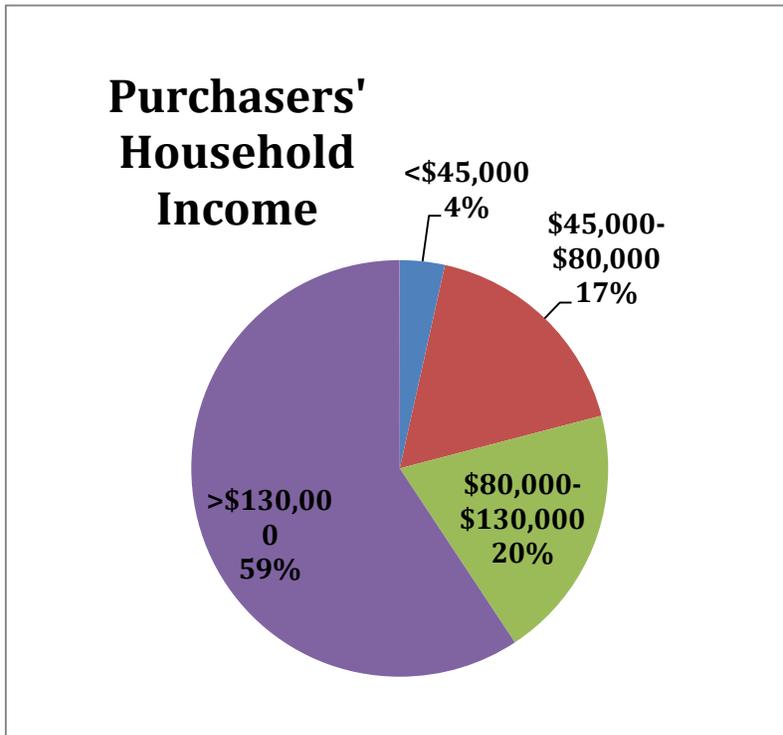
A freshwater proponent wrote, “The shrimp were less fishy in taste—mild and tender.” “Juicy and sweet,” was the way another responded characterized the taste. “They were so nice; we were lucky to buy these shrimp,” was another buyer’s summation.

But saltwater aficionados, who were in the minority, felt otherwise. “I prefer saltwater if given a choice,” said one. Another said, “The taste of these was not as satisfying as the shrimp I usually buy.” A third noted, “There wasn’t much flavor.”



The survey showed respondents positively evaluated the taste of both the head-on and headed-prawns. Slightly more than 78% of the purchasers agreed or strongly agreed that shrimp “tasted very good.” Perhaps those who disagreed, were those who preferred saltwater shrimp.

About 64% of first time buyers (45/70) intended to purchase prawns again and 71% of the respondents (15/21) with previous experience with freshwater shrimp, said they were likely or very likely to buy the shrimp at harvest next year.



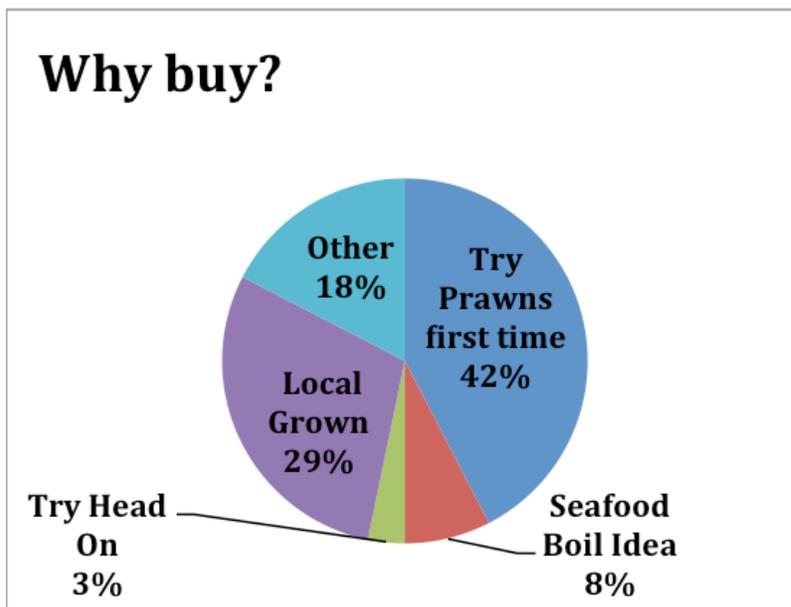
The predominate reason for buying the shrimp was to try freshwater shrimp for the first time. About 42% of the respondents felt that way. The next most important reason for buying the shrimp, at 29%, was to “support locally grown food.” Only 3% said they bought because they wanted to try head-on.

About 49% of the respondents with incomes above \$130,000 fell in the 50 to 65 age group; 31% of the high

income earners were in the 36-49 age group. Only 8% of the 23 to 35 year olds were in that category.

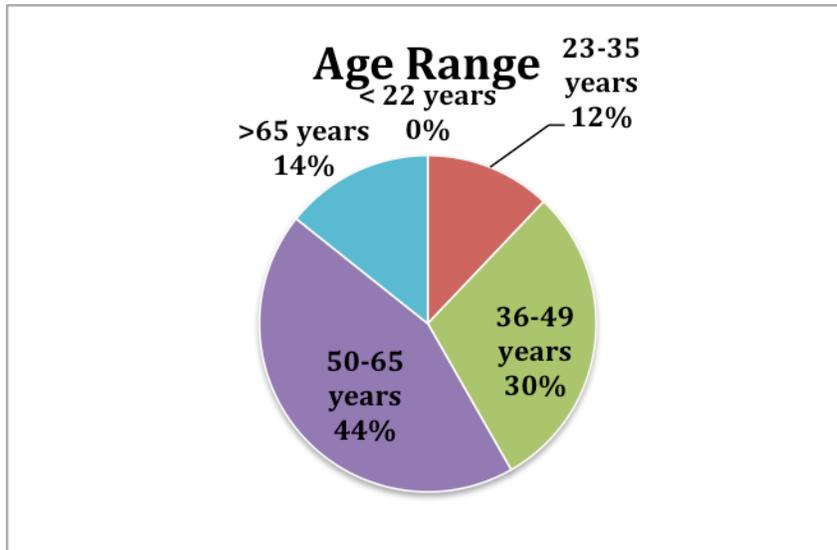
The Wegman’s Fairfax store is located in a high income area. Not quite 60% of the respondents had household incomes of more than \$130,000, placing them in the top 12% of U.S households with respect to income. About 80% of the respondents had household incomes of \$80,000 or more, a category which encompasses the top 30% of U.S. households.

With the shrimp being sold at \$15.99/lb. one suspects that the test market occurred in the right area. The Fairfax store sells more seafood than any other Virginia Wegmans’ store.



For these shrimp purchasers, 84% agreed or strongly agreed being able to purchase locally grown food was important to them. About 47% of the respondents “strongly agreed” that it was important. Intentions to purchase

shrimp if they were available the next fall was somewhat correlated with the importance of buying local. About 55% of those for whom locally grown was important, intended to purchase next fall.



Nearly 44% of the respondents fell into the 50 to 60 age group, while 30 per cent were in the 36 to 49 age cohort.

Fresh shrimp, that was never frozen, was important to 82 per cent of the purchasers. About 40% of the respondents said

they would not buy the shrimp if they were frozen.

If the macrobrachium are to be sold never frozen it would have to be a once a year event as these warm-water shrimp cannot over-winter in most U.S. ponds even in the South. Whether stores would be willing to do a promotion for something that is available just once a year is an open question. But events that make unique food available apparently do engender store loyalty. About 90% of the shrimp purchasers said they were “more likely to shop at Wegmans” because the store offers unique food like Virginia grown shrimp or other items unavailable elsewhere.”



In addition to the booth, freshwater shrimp were also sold in the regular seafood display case.



At this fresh water shrimp display, questions about the freshwater shrimp were answered by product demonstrators.

The aforementioned brochure, detailing three different ways to cook shrimp, was offered to customers. The most detailed instructions in the brochure were for the boil, which featured the freshwater shrimp along with hot sausage, redskin potatoes and corn on the cob. Chefs at Wegman's also prepared a sample boil which was displayed at the shrimp booth so customers could judge its appearance.



Signs at the shrimp booth told buyers where the shrimp were grown and who was doing and sponsoring the research.

More than 85% of respondents agreed or strongly agreed that having brochures showing how to cook new foods like head-on shrimp was important to them. Recipes for the boil, grilling and shrimp and grits were featured in the brochure but the seafood boil was emphasized.

An online version of the brochure is also available. It is referenced in the deliverables section at the end of this report.

Clearly given the positive survey responses never frozen freshwater shrimp can be sold in the right retail store. Negotiations for further supermarket seafood sales occurred the following year between VAN and the Wegmans' distributor. However, unfortunately further sales were not negotiated last year. Since never frozen Virginia freshwater shrimp can only be available in the fall, it must be marketed as a harvest event. Supermarkets may not be willing to invest the effort for an event that happens only once a year. If it is to happen, it will require a "channel champion" to encourage the effort.



Some customers really got into sampling fresh water shrimp. Most wanted instructions on how to eat head-on shrimp. This customer had his own way of doing it.

Initially the intent of this portion of this marketing grant was to engage a non-profit organization to market the shrimp in conjunction with a supermarket. The incentive was for the NGO to use the event as a fund raiser and at the same time encouraging local aquaculture. If the NGO raised part of its operating budget from the event, perhaps it and other NGOs would become a "channel champion" and make fall harvest sales and annual event. But both of these parties withdrew from the project after it was underway, forcing the change to the more traditional marketing approach.

Shirley Plantation Harvest Boil

Fall harvest shrimp boils are another way to create interest in farm raised freshwater shrimp. On September 19, 2015, about 225 people bought a \$35 ticket to a boil at the Shirley Plantation in Charles City County, Virginia. The shrimp for the boil were raised in a pond on the plantation under the direction of Charles

Carter, who is a member of the Virginia Aquafarmers Network (VAN). VAN also bought a portion of the Shirley harvest. The shrimp were harvested and processed at a permitted processor two days before the boil.



An attractive flyer announced the boil.

About 91% of the 72 people who filled out a short questionnaire after eating agreed or strongly agreed that they would buy a ticket to the event next year.

The “purchase next year decision” would have likely been even higher if not for one decision. The boil was done in two servings. One was scheduled to start at 3:30 and the other at 5:45. When it appeared that a noticeable number of the 3:30 ticket holders were not there on time, the serving was delayed about 20 minutes to allow more people to get there. This decision irritated five ticket holders. One wrote, “If a meal is to be served at a certain time; it should be.” All five of those surveys were returned together and it was clear that

the start time made it doubtful they would be back again next year. If those five surveys are dropped from the sample, almost 99% of remainder said they would buy tickets next year. Of the remaining 67 respondents, 46 strongly agreed and 20 agreed they “would buy a ticket to this event next year.”

What’s more, about 93% said they would recommend that family and friends buy tickets to a similar event next year. So an event next year should have good repeat purchases next year and also good word of mouth from those who were there this year.

As with the retail sales, a question arose as to what form (head-on or head-off) should the shrimp be served. As noted, freshwater shrimp, and marine shrimp for that matter, are served head-on in much of the world. There are several reasons to serve the freshwater shrimp head-on. Serving head-on helps keep the price down

as processed tail weight of a freshwater shrimp can be as little as 40% of the weight of the whole animal. While the head is not consumed savory juices can be obtained from it. This enhances the taste experience. Plate coverage or in this case tray coverage is better.

However, as the retail survey indicated, most U.S. consumers have never tried head-on shrimp. The boil committee differed on what the processed form should be. Serving all head-on would allow keeping the price of the ticket down but might not please everyone attending. It was eventually decided to serve mostly head-off shrimp with a limited number of head-on shrimp after clipping the animal's rostrum or horn (see the picture on page 4). The horn on freshwater shrimp is very sharp and might cause injury if not handled correctly. Only a few head-on shrimp were added to each table's serving tray. A planning guide/manual for fresh-water shrimp boils can be found at: http://www.pubs.ext.vt.edu/AAEC/AAEC-28/AAEC-28_pdf.pdf



Ticket purchasers enjoyed the event. Nearly all said they would buy tickets again next year.

Photo by Brian Nerrie

This mix suited most respondents. About 65% agreed or strongly agreed that “the mix of whole and head-off shrimp was about right.” However, the head-on questions drew more negative responses than any other question. About 6% of the

respondents either disagreed or strongly disagreed that the mix of head-on/head-question right and 29% were neutral. A neutral feeling about the mix of shrimp may mean that the respondents weren't upset by the head-on shrimp but it also means they weren't really into it. Told that in most places in the world freshwater shrimp are consumed head-on, one attendee said, "But not in Charles City County."

Serving head-on makes economic sense, but producers of future boils need to be careful not to get too far ahead of their customers. Given the 65% positive response rate and 94% neutral or better response to the mix question, future boils may not alienate customers if they serve a few whole shrimp. Without doing this there is little opportunity to educate about different processing forms that lead to different taste experiences.

Thus, organizers of future freshwater shrimp boils should carefully consider the head-on whole prawn issue when planning. Customer reactions need to be tracked to ascertain whether head-on acceptance increases and is viewed as a way to improve the taste experience while holding cost of ticket down.



Shrimp boils are often more fun when guests while standing at elevated banquet tables. A party atmosphere is created and it invites conversation amongst people who may not know each other.

Virginia Sea Grant Photo by Janet Krenn

About 96% of the respondents found the quantity of shrimp available to eat was apparently about right. About one-half pound of head-off (tails) and two-tenths pound person of whole were served. Out of the 71 answers to that question 96% strongly agreed (51 respondents) or agreed (17 respondents) that “amount of shrimp to eat was about right.”



Cooked shrimp tails being further spiced before delivery to the tables.

The food was purveyed in long serving trays placed in the middle of the elevated banquet tables. First red skinned potatoes went into the tray. Then sausage, corn-on-the-cobb and a few garlic cloves were layered on top of the potatoes. The shrimp were added last and placed on top of everything. Guests could then take food out of the trays with tongs and place it on their plates.



Loading a “small” serving tray with cooked shrimp. Guests served themselves family-style using tongs in the trays

About 95% of the respondents agreed (13) or strongly agreed (51) that the “presentation (was) appetizing.” Nearly 99% “enjoyed the taste” of the shrimp boil. About 93% found it “fun and inviting.”

Permits for the events were obtained from the Virginia Department of Health and the Virginia Department of Alcoholic Beverage Control. Water quality safety tests were performed. The cooking and serving setup was inspected by the health department before cooking began.

There were also two other much smaller freshwater shrimp boils done at restaurants during the grant period. One was at Kahills Restaurant in South Hill, VA and the other at 202 Bar and Grill in Farmville, VA. The conclusion from both those boils is that it is difficult to force large-scale boil format into the individual meal format that restaurants need. While shrimp boils have recently started appearing on some restaurant menus, they are prepared in restaurant kitchens. That way just several people can be served at a time and flexible serving times can be observed.

Shirley Plantation was a picturesque and historic place for the boil. The plantation sits on the James River. The hatchery produced post larvae shrimp are purchased and placed in the pond May or June once the water warms. The shrimp must be

harvested, usually in September, before the water temperature drops into the low 60's F. The shrimp-pond water is drawn from the James, using a tractor powered pump.

Shirley is the oldest working plantation in Virginia. In addition to the new shrimp venture, cotton, soybeans and winter wheat are grown there. The plantation dates from 1638. Construction on the current plantation mansion started in 1723 and was completed in 1738. Eleven generations of the Hill-Carter family have lived there. The first floor and all the out buildings are open for public tours and an a very active agri-tourist business occurs there. The second floor of the Mansion, for the most part, is family occupied.

Over-all the Shirley shrimp boil evaluations were highly positive with just a few problems needing correction. Charles Carter and his wife Lauren Murphy intend to organize another shrimp boil next year. "It's a very successful model to build on. A lot of moving parts came together well." he said. "We have a great starting point and I don't think we'll change too much."



The Shirley Plantation Mansion was completed in 1738 and is currently occupied by the 11th generation of family members to live there. There are daily public tours of the first floor.

Current and Future Benefits

The current benefits include, of course, improved sales and profits for producers. However, those benefits are transitory. More important will be the future benefits if the project opens up new retail and direct marketing channels for producers. In

particular, the harvest freshwater shrimp boil appears to offer farmers a way to increase direct sales and profits. If this occurs it should improve the stability of prawn production within the Virginia Farmers Network (VAN) and thus improve the organization's ability to plan and grow.

Project Beneficiaries

According to U.S.D.A.'s 2013 Census of Aquaculture there are 40 producers of freshwater prawns in this country. The information in this study could assist them a to obtain more dependable and predictable sales of prawns. The information developed from the shrimp boils would be useful to encourage entrance into a new marketing channel for many of them and produce a steady income stream from prawn production. Improved profits, of course, will encourage other farmers to give it a try.

But the most direct beneficiaries will be the eight VAN members and VAN's seven affiliate members if they use the information to increase profits and production volume.

Public and Private Agency Partners

Virginia Tech was the lead partner in this project and coordinated and was involved in all activities. Employees of Virginia Tech and Virginia State University conducted food safety and good manufacturing practices training for the farmers growing the shrimp. Virginia Aquafarmers network directed the harvests and sold the shrimp to Wegmans. Virginia Department of Agriculture and Consumer Services and Virginia Marine Products Board employees assisted with the sale of shrimp at Wegmans. Culinary Institute of Virginia students assisted with the cooking of the shrimp boil.

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Additional Information Generated by the project

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The immediately above "Freshwater shrimp" story was also in the Augusta Free Press on Nov. 17, 2015.

<http://augustafreepress.com/freshwater-shrimp-becoming-big-deal-with-help-of-virginia-cooperative-extension-virginia-tech/>

A YouTube showing how to do a freshwater shrimp boil on a home stove

<https://www.youtube.com/watch?v=Zdr3P8wfg98&feature=youtu.be>

Presentations

Kauffman D., M. Walker, M. Jahncke, N. Brian. February 2014. "Will high income U.S. consumers buy and like freshwater shrimp?" **Aquaculture America 2014**, Seattle, Washington, Feb. 12, 2014.

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Copies of surveys used for project

Contact for further Information

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Freshwater Shrimp Boils: A Festive Community Event for Fun and Profit

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Martha Walker, Community Viability Specialist, Virginia Cooperative Extension

Leanne DuBois, Virginia Grown Manager, Virginia Department of Agriculture and Consumer Services

The Perfect Partnership

Southside Virginia farmers are growing a new product: freshwater prawns (shrimp) grown in ponds. These prawns make possible fun community seafood boils that can help organizations raise money and farmers sell more shrimp.

It's no secret that the magical combination of music, seafood, and hungry people can produce good times and generate revenue. It takes just a little tweaking of this idea to produce a fun unique event: a Virginia Southside Prawn Boil. Such events are a win for farmers, the organization putting them on, and the communities in which they occur.

Whether prawn (*Macrobrachium rosenbergii*) producers decide to host their own seafood boil or develop a partnership with other profit or nonprofit organizations, this farm-to-table event is ideal for expanding the local community's awareness of the taste and availability of freshwater prawns. Overall, a seafood farm-to-table celebration will 1) facilitate the creation of a network of agricultural producers, 2) expand the community's understanding and appreciation of local foods, especially locally raised prawns, 3) increase sales of freshwater prawns, and 4) demonstrate the feasibility of using prawns as the key food for seafood events.

Who should read this manual?

This manual will be useful to those interested in hosting locally grown freshwater shrimp boils as community events to which tickets are sold. It contains instructions on how to organize the event and cook the food. Boils can be done either by private organizations for profit or by civic groups as community fundraisers. The target audience is freshwater shrimp farmers, caterers, and other food professionals, and civic club members or others interested in public freshwater shrimp boils. Certain portions of the manual will also be useful to those just wanting to do a backyard family freshwater shrimp boil.

What can boils do?

Boils can increase sales of farm-raised freshwater shrimp; increase citizens' awareness of a locally produced, good tasting product; enhance community/farmer connections; and foster community spirit while raising funds for local projects. The ideas in this manual were tested at a pilot boil in Chatham, Va. Nearly all participants reported enjoying the taste of the food while having a good time at a unique event.



Unless otherwise noted, photos are by L. Greiner.

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What is a seafood boil?

A seafood boil is a food event that features various shellfish. Louisiana Cajun boils use crawfish. Carolina and Georgia low country boils have shrimp as the main ingredient. Lobster is the star of the show in New England boils. West coast boils often use Dungeness crab. Boils also typically include red skin potatoes, corn on the cob, and various types of sausage. Using prawns as the seafood of choice is a natural addition to the mix of seafood events and an excellent strategy for showcasing a local product.

Who puts on seafood boils?

Boils range from private parties and family reunions to for-profit events or civic organization fund-raisers. Some boils are so successful that they become annual events of many years' duration. The Tampa Bay LSU Alumni Club has held a scholarship boil for the past 26 years. The Woodbine, Georgia Lions club has sponsored a boil for 26 years that has grown into a three-day affair attracting more than 20,000 people. The St. Paul's Episcopal Church of DeKalb, Ill. has hosted an annual Lobster boil for 42 years. A quick internet search shows many other similar events across the country. In Danville, Va., the Chamber of Commerce's annual shrimp boil sells out months ahead of the event and attracts more than 1,750 people. (See page 3: "A Success Story.")

Can prawn/freshwater shrimp boils be done successfully in Virginia?

Yes. A very successful pilot boil using locally grown shrimp was held at The Homeplace Vineyard in Chatham, Va. for about 55 people in the fall of 2011.

What are prawns and when is the harvest?

Prawns are freshwater shrimp that can be grown by farmers in specially constructed shallow water ponds. They are hatched in saline water but spend their adult lives in totally fresh warm water. In Virginia they can only be grown during the summer. Prawns are tropical animals and cannot survive Virginia wintertime water temperatures. Optimal water temperature for growth is between 80 and 90 degrees Fahrenheit. In Southern Virginia they are usually harvested in September or early October before the water temperature cools to 60°F. Those planning a boil will need to coordinate the harvest date with the farmer.

Where could prawn events be held?

Harvest day boils could be done either pond-side at the farm or at a nearby location. Wineries, parks, fire stations, fraternal and veterans clubs, and other community gathering places where food is sometimes served to a group are also good settings.

How fresh will the shrimp be?

Ideally, the shrimp would be harvested on the day of the boil. Rarely do people have the opportunity to consume seafood that was swimming just a few hours before the meal. The local farmer/grower offers a unique opportunity to link the boil and the harvest together. Boil attendees wishing to do so could watch the pond being harvested on the day of the boil. Cooking the day of harvest also allows the prawns to be cooked "head-on," which some claim is the most flavorful way to eat them. Purchasing head-on also decreases the implied gross



Photos by D. Kauffman.

price per pound because the shrimp do not have to be headed. It also avoids the expense of further processing and eliminates perishability problems because the product is consumed on the day of harvest. Other ingredients for the boil could also be purchased from local farmers, tapping into popular “locovore” and “farm-to-table” interests.

Could the boil lead to other positive outcomes?

Boils done in conjunction with a service club fundraiser expand ties between agriculture and the community. The service club could promote the event using its community connections. These connections might lead to other farm-to-table events, subsequent sales to grocery stores, and the opening of other market channels.

A Success Story

In Virginia’s Danville/Pittsylvania County region, the annual shrimp fest has proven to be not only popular but

highly profitable. In the early 1980s, Danville hosted an annual celebration of tobacco called the Harvest Jubilee each September. The Chamber of Commerce supported the Harvest Jubilee and wanted to expand on one of the Jubilee’s scheduled events by adding a fundraising dinner. Realizing that no one else in the region was using shrimp as the featured menu, the Shrimp Fest was launched and a new niche was discovered.

For almost 30 years, the doors have opened at 4 p.m. on a Wednesday in September with delicious shrimp, baked beans, and coleslaw served between 5:30 p.m. and 7:30 p.m. Alcoholic beverages including beer, wine, and mixed drinks are included in the \$35 ticket. Shrimp Fest goers listen and dance to their favorite music played by a band invited back each year. By 8:30 p.m. the music winds down and most of the Fest partiers have departed by 9 p.m.

The success of this event is measured by the overwhelming demand for tickets. In 2011, the Chamber opened ticket sales at 9 a.m. and by 11 a.m. all 1,750 tickets were sold.

What was the reaction to the freshwater shrimp boil held at the Homeplace Vineyard in Chatham, Va.?

About 55 people attended the pilot boil and were asked to evaluate their experience on a five point scale from strongly disagree to strongly agree. Approximately 35 of the attendees answered the questionnaire. Nearly all had a positive experience:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Fun & Festive				8	27
Enjoyable Taste		1	1	9	24
Right Amount of Shrimp				3	30

The boil also sparked other positive reactions:	YES	NO
Purchase freshwater shrimp to serve at home	30	1
Event feasible for an organization fund raiser	32	1
Recommend event to your family & friends	28	1

Special thanks to those who made the pilot boil possible:

Funding provided by Virginia Foundation for Agriculture, Innovation and Rural Sustainability, and the Virginia Tech College of Agriculture and Life Sciences Dean’s Integrated Research Grant.

Event hosted by the Joe Williams family at their Homeplace Vineyard, Chatham, Va.

Planning Committee members were Leanne DuBois, Virginia Department of Agriculture; Kevin Owen, freshwater shrimp farmer; Odie Shelton and Fred Wynder, Pittsylvania County officials; Chris Smith, Home Place Winery; and Stephen Barts, Dan Kauffman, Jamie Stowe, and Martha Walker, Virginia Cooperative Extension.

Diners comment on the pilot boil:

“Great/Awesome!”

“Great time, great food.”

“Freshwater shrimp boil not a common event. Great way to try something new.”

“Excellent taste, fun to eat/share, great fellowship.”

Who cooks the meal?

Each year the Chamber contracts with a local restaurant group that provides all of the food. The restaurant cooks the shrimp in advance, cools it, and stores the cooked shrimp in a refrigerated truck secured by the Chamber from a local food company. To feed the 1,750 guests, the restaurant cooks around 2,000 pounds of shrimp.

Who sets up and cleans after the event?

With a large crowd peeling, eating, drinking, and dancing, trash management is required. The Chamber partners with the Harvest Jubilee Committee and has



access to the City of Danville public works crews and work-release prisoners. Because of the partnership, the significant setup and clean up tasks are completed utilizing the resources of the City of Danville.

How are volunteers used?

Chamber members are used as volunteers at the Shrimp Fest to serve the corporate sponsors, manage ticket collection, host the beverage service, and serve the shrimp to the guests. The valuable volunteer labor makes the event possible.

What is the promotion strategy?

Word of mouth promotes the annual Shrimp Fest. It's an event that everyone wants to attend due to the exceptional reputation for good food and fun. The Chamber sends out fliers to Chamber members and to those who have attended the Shrimp Fest over the previous three years. In 2011, the Chamber mailed approximately 2,500 fliers and promoted it through its weekly electronic Chamber newsletter.

How are the ticket sales and collection managed?

In 2011, the Chamber used electronic ticket sales for the first time. Corporate sponsors were the first to purchase eight-ticket corporate tables at \$500. The corporate sponsors accounted for the first 600 tickets purchased. These sponsors have a private server and a table set with linen tablecloths and napkins. In addition to the corporate sponsors, the Chamber sold 550 tickets by mail, 350 online, and 250 walk-ins on the morning of the sale. Each year the Chamber maintains a waiting list and contacts these eager customers if and when ticket holders are unable to attend and want to sell their tickets.

Ticket management on the day of the event is also transitioning to an electronic system. Using the online ticket sale option that includes a bar code, the 2011 tickets were scanned. This is modeled after the Halifax County Chamber and its Cantaloupe Festival.

How is the liability managed?

The Chamber adds an insurance rider to its normal insurance policy for this event in order to limit its exposure to liability. The caterer is required to secure all the health department permits and show proof of liability insurance coverage.

What advice should other nonprofit organizations consider?

The Chamber offers three suggestions for a successful event. First, ensure the quality of the shrimp and that it is cooked properly. Second, organizations should start small. With a limited number of tickets, the event becomes “sold out” with a waiting list, thereby adding an element of prestige to getting tickets. And third, if the event is planned for outdoors, an organization must plan the event as though there will be hurricane rains and winds. The Chamber utilizes the Danville train depot facility and only once has the event been postponed because of torrential rains.

The Local Event Planning Strategy

Can non-profit organizations and local agricultural producers use a successful fundraising model and collaborate to create a mutually beneficial initiative that uses local freshwater prawns for a fundraising shrimp fest? What guidelines ensure a successful event and result in a return on an organization’s investment?

The response to the first question is “absolutely!” The guidelines for a successful event require a planning team composed of key stakeholders and a proactive communication system to manage the logistical details including permits, insurance coverage, publicity, and fund management.

The Planning team

If your organization is considering hosting a seafood festival as a fundraising event, there are several basic steps to guide your planning. Begin by identifying key stakeholders to serve on a planning team. Stakeholders may include:

- Local prawn producers.
- Agricultural development board members and directors.
- Tourism staff.
- Proprietary or non-profit and civic organizations who would benefit from the shrimp boil.
- Chamber of Commerce representatives.
- Cooperative Extension agents who will have contact with agricultural producers who grow food items required for the boil such as corn, red potatoes, onions, garlic, and sausage.
- Caterers and/or culinary professionals.

Invite stakeholders to meet and discuss hosting a shrimp boil with locally raised prawns as a fundraising event. Agenda items to be considered may include:

- The overall goals of the event.
- The partnering organizations and who will have lead responsibility for the boil. (This item may not be first on the agenda, but it is most important.)
- Decisions required for a successful event:
 - Proposed date for the event based on the harvest.
 - Location.
 - Menu items and preparation responsibilities.
 - Food purchasing sources and responsibilities .
 - Beverage options (wine, beer, mixed drinks, soft drinks, etc.).
 - Equipment for cooking, serving, and sanitation.
 - Setup and cleanup tasks.
 - Music and other activities.
 - Budget, food costs, and potential net revenue.
 - Number of tickets offered, process for selling tickets, and the price.
 - Zoning and health permits.
 - Event insurance.
 - Publicity plan.
- Other agenda items:
 - Who will provide the shrimp/prawns and how much shrimp will be needed?
 - Will the prawn producer have sufficient number of pounds available to meet the seafood festival’s requirements? If not, are other producers willing to sell prawns? How will you build this partnership between the producers?
 - Would the event feature the prawn harvest as part of the fundraising activities? If so, will the harvest experience be free or will tickets be sold? A prawn harvest provides an opportunity to educate the public on prawn production and showcase local producers and their products; therefore, it may be more beneficial to invite the public to the prawn harvest without charge.
 - Would local producers and chefs be invited to showcase the local produce/meats/products or offer demonstrations for cooking prawns?
 - Who will provide the local products (corn, red potatoes, onions, garlic and sausage) for the event?

The Checklist

Once consensus is reached on the main details, the planning team should develop a planning checklist with a timeline. A good reference for a successful event timeline is found in *Preparing for an Agritourism Event: A Checklist* (Mainville & Mundy, 2007) <http://pubs.ext.vt.edu/448/448-501/448-501.html>.

The Permits

Meet with local government officials and discuss the required permits for hosting a public event on agricultural property. Usually the zoning or planning office will be able to provide you with a list of permits, costs, and limitations for a public event. If the office is not staffed, schedule a meeting with the town/city manager and/or county administrator. You will also want to discuss the event with the representative from your local health department.

The Liability Exposure

With each event and activity sponsored by an organization, the liability exposure increases and could place an organization in legal and financial jeopardy. Normally most organizations carry liability policies that a) do not include coverage for an event that serves alcohol, and b) exclude special events. Therefore the organization must contact the insurance company and discuss a “special rider” or “special events rider” to cover the particular event that is being planned. The insurance company will require the organization to complete an application explaining the type of event, how many people are expected to attend, the total receipts from the event, type of security, and if alcohol is being served. If you are serving alcohol the special events rider will include general liability and liquor liability.

Most organizations select at least a \$1 million liability policy. The actual cost for the policy is determined by the insurance company and influenced by the company’s willingness to write a rider. If the company is not willing, an organization may have to go to a specialty market to secure this type of coverage, and the premium can run from \$750 to \$1,000 per event.

The best advice for an organization is to maintain a strong relationship with the insurance company that has written the organization’s general liability policy. Talk to the company representative about the project before planning the event. If an organization has no liability insurance coverage, the insurance agent of choice would have to go to a specialty market to get the coverage needed to limit the liability exposure.

Please see “Liability and Insurance” on the Virginia Department of Agriculture and Consumer Services website for other liability information (<http://vdacs.virginia.gov/marketing/dms.shtml>).

Cooking the seafood boil

There are numerous types of seafood boils, but for the pilot project a modified Cajun boil was featured at The Homeplace Vineyard in Chatham. Head-on shrimp were substituted for head-on crawfish. Traditionally a Cajun boil is a one-pot affair, often done for a small group of people. Foods go into the pot in order of cooking time but this requires perfect timing in order to prevent over- or under-cooking.

For larger groups the process is easier to manage if most of the food is cooked separately and then held briefly in insulated food grade hot boxes while it tempers. This separation makes management of the boil simpler and the staging of the food easier.

From whom can we buy locally grown freshwater shrimp?

If you don’t know a Virginia freshwater shrimp farmer who can provide shrimp for a boil, contact Virginia Aqua-Farmers Network (VAN). VAN can connect you with a farmer, as most Virginia freshwater shrimp growers are members and market a portion of their shrimp through the organization. Contact with the farmer is best made in the spring before ponds are stocked. That way you can make sure you are in line for the shrimp you will need for your boil.

We don’t want to cook the boil ourselves. Who can we hire?

As the manual notes, it’s just boiled water and not difficult to do so long as cook times and food temperatures are right. However, if the club or organization doesn’t want to cook the event, local caterers, restaurant chefs, or the Virginia Aqua-Farmers Network (VAN) may be willing to cook the event for a fee. While the cooking is not difficult it does require big pots with strainers and high pressure propane burners.

VAN contact information:

Cathy Belcher, VAN Marketing Manager
Cathy.Belcher@yahoo.com
434-414-4620

or

Lynn Blackwood, VAN Chairman
blackwoodfarmproducts@yahoo.com



The traditional ingredients of a Cajun boil are redskin potatoes, corn on the cob, sausage and crawfish. This menu was followed but, of course, Southside prawns were substituted for the crawfish.

Cooking is not difficult. It is, after all, just boiling water. However, timing and temperature control are important to avoid over- or under-cooking and food safety problems.

Potatoes

Small redskin potatoes are cooked first. To give the potatoes a little kick, add about 1/4 pound of seafood boiling spice per gallon to the cooking water. If you don't want the spice, salted water will do. Another optional twist is to cook the potatoes with whole garlic bulbs. Put garlic bulbs in the water about 10 minutes before you put the potatoes in the water. The individual cloves can then be squeezed out like toothpaste. The taste is slightly sweet; almost like a caramelized onion.



The small potatoes usually take 20 to 25 minutes to cook in the boiling spiced water. Start checking them at 20 minutes and pull them out of the water when they are just slightly firmer than you want to serve them. Potatoes will finish cooking in the insulated container while they temper. Completely sanitize your insulated container before placing the potatoes in it. Potatoes may be placed in the insulated container a half-hour or more ahead of your serving time and will come to

eating temperature during that time. You can then concentrate on cooking the rest of the food.

Sausage

The traditional sausage for a boil is Andouille, a highly spiced Cajun specialty. Sometime a less spicy pork sausage is also used, allowing a choice between the two. Often the Andouille comes pre-cooked. In that case, just cut the sausage into 1 1/4 inch pieces and bring it to 145/150 degrees Fahrenheit in the boiling water and then let it temper for 10 minutes. In the short time it is in the water it will retain its eye appeal. However, boils are all about local foods and your local sausage maker may not pre-cook the Andouille. In that case, pre-cook the sausage prior to the boil and then cool it to 40 degrees Fahrenheit. On the day of the boil, slice the pre-cooked sausage before placing it in the boiling water. You can, of course, do all the cooking of the raw sausage in the boiling water, but it will not have the eye appeal of the fried product. If cooking from raw, you should bring the sausage to at least 160 degrees Fahrenheit.



Corn on the cob

Try to get locally grown fresh local sweet corn if possible. This may be impossible since your boil will most likely be sometime in September. If you cannot get fresh, a local food service supply house may have frozen some local product during the season. Snap each ear in half and boil for less than five minutes with no spice or seasoning. There is plenty of spice on the other food, and it is nice to have just the taste of the sweet corn to contrast with the spices.

Prawns

Now it's time to get serious about monitoring your cook time and temperature. With all the other foods you can miss the optimum cooking times by a minute or two and still have well prepared food. Shrimp, however, requires more care and timing than the other foods in the boil. For that reason, always cook shrimp separately. If you follow the instructions of some recipes

to boil shrimp for three minutes, you usually end up with an overcooked, overly chewy product. However it is important to get the internal temperature of the shrimp high enough to firm its protein.



Since head-on *macrobrachium* were used, eight batches of head-on prawn were tested for different cooking times the week before the event. A panel of four professionals, including a professional chef and culinary instructor, found the best shrimp for texture and flavor was cooked in the following manner:

- Use two pounds of cold shrimp per gallon of boiling water.
- Put the shrimp in water that is at a full boil.
- Let the shrimp return to a boil. Hopefully your heat source is strong enough to return the pot to a boil in 45 seconds.
- Let the shrimp boil for 45 seconds.
- Remove from heat at 1 1/2 minutes.
- Let the shrimp cook in the hot water for another two minutes.
- Remove from water and let the shrimp cool to serving temperature in a sanitized insulated container.

Cooking Conditions Are Never the Same

The trouble with all-purpose instructions like these is that no two cooking conditions are ever the same. If the temperature of the shrimp going in the boiling water is warmer, or the heat source produces fewer or more BTUs, etc., the times above will not be accurate. If the water doesn't return to a boil for three minutes, what do you do then? Because of this, home cooks judge by the color of the shrimp and then maybe cutting a shrimp tail in half to make sure it is opaque. But a faster and more accurate method is needed when cooking for a large group.

The Importance of Cooking Temperature for Shrimp

A digital readout temperature probe is the way to go. During the eight-batch test-cook, internal probes were inserted in the shrimp to record the temperatures as the shrimp cooked. In the panel's opinion, the best texture came from shrimp that reached an internal temperature of approximately 160

degrees Fahrenheit. At the actual boil, tongs were used to pull shrimp from the cooking water every 30 seconds for an internal temperature check. The shrimp were pulled from the water when the internal temperature reached the high 150s and placed in the insulated container. Temperature continued to rise into the 160s after the shrimp were pulled from the water. Shrimp may be held in the insulated containers for approximately 15 minutes before serving.



Shrimp proteins firm at approximately 160°F.

How should the shrimp cooking water be seasoned?

There are two schools of thought on this. The first is to season the water heavily with a shrimp or crab boil spice. The other is to cook the shrimp in a light court bouillon and then coat the shrimp with the spice after the cooking is finished. Both ways will work but because shrimp are in the water for such a small amount of time it is difficult to get them seasoned using only shrimp boiling spices in the water. For the Chatham boil, Chef John Maxwell, a recognized culinary professional in Virginia, recommended a court bouillon to cook the shrimp in and a spice coating added after cooking. Chef Maxwell's recipe for the court bouillon is as follows:

Court Bouillon (makes 2 gallons)

- 2 gallons cold water
- 2 tablespoons coriander seed, crushed
- 2 bay leaves, crushed
- 1/4 cup apple cider vinegar
- 1 cup onion, cut into large pieces
- 1 cup celery, cut into large pieces
- 1/4 cup parsley, not cut but pressed into a cup measure
- 1 lemon cut into quarters

Prepare the bouillon ahead of time by boiling the ingredients in the water for about one-half hour. The onion, celery,

and parsley should be fresh and cut into pieces that are small enough to cook quickly (about 1 inch pieces). The coriander should be lightly crushed to release the flavor and aroma. The coriander and bay leaf can be placed in a piece of cheesecloth and tied into a packet with cotton string.

If you're using approximately 12.5 gallons of water to cook the shrimp, you will want to increase the above recipe amounts by six times. Put the ingredients into the strainer in the pot and cook for 20 to 30 minutes. Pull the strainer out of the water and discard the contents. You now have a bouillon in which to cook the shrimp. Having the exact ingredients in the precise proportion isn't critical. The vinegar, coriander, and onion are probably most important.

Quantities of Food Needed

With paying customers it's important to have enough food to satisfy, but not so much that food is wasted. Although the amount varies with different groups of people, the following quantities for each person have proven to be satisfactory for most boils:

- 3/4 pound of small redskin potatoes
- 2 to 3 half ears of corn
- 3/8 pound of link Andouille sausage sliced into 1 1/4-inch pieces
- 1 pound of head-on freshwater prawns

Staging the Boil

Begin cooking the potatoes in boiling water about 55 minutes before you want to serve. If you're cooking garlic, put the cloves in the potato pot(s) 10 minutes before you start cooking the potatoes. The cooked potatoes should be going into the insulated containers about 30 minutes before serving time.

If the sausage is not precooked, it should go in the pot about 40 minutes before serving. If it is precooked just a few minutes will do. Check for a 145-degree Fahrenheit internal temperature if precooked is used. (Precooked is probably best. See sausage-cooking instructions.) Uncooked sausage will take longer and should go in the pot about 40 minutes before serving time. Make sure it reaches an internal temperature of 160 degrees Fahrenheit. Corn and sausage can be cooked in the same pot(s) but the sausage needs to go in before the corn. The corn needs five minutes of cooking time. Cooked sausage and corn should go into separate insulated containers.

Now you should have about 20 to 25 minutes to concentrate on shrimp cooking. This should be enough time to



get three 30 pound batches of shrimp sequentially in each pot. Use about 12.5 gallons of court bouillon in each pot. Each batch will take about 3 1/2 minutes to cook. But as previously noted, pay more attention to the 160-degree Fahrenheit rule than the cooking time. As each batch comes out, it should go into an insulated serving container for tempering.

When the shrimp are in the hot box tempering, season them to taste. Do this by sprinkling the hot shrimp with spice. Then mix them by hand, using insulated sanitary gloves, so that a light coating of spice is evenly distributed on the shrimp.

Now all that needs to be done is to serve the food. Whether serving in foil pans or a long container on the table (see picture below), the potatoes go in first, then the corn and sausage and finally the shrimp on top. The trick is to get the right quantity of food in each container so it feeds the appropriate number of people. If the container is to feed four people it should have at least three pounds of redskin potatoes, one to 1 1/2 pounds of sausage, eight half ears of corn, and four pounds of head-on shrimp.

The meal can be cleared from the table within 2 1/2 hours of serving, even if people eat at a very languid pace. By limiting the meal to this amount of time it is unlikely that a food safety issue will occur.



Simple, long food containers maintain sanitation, while coming close to preserving the traditional way of serving a boil.

Basic Cooking Equipment Required

Burners

High-pressure burners are needed to produce enough heat to bring big pots of water to a boil and then hold the boil with large quantities of food. The 5 pound low-pressure burner used in the typical home turkey fryer doesn't put out enough BTUs. These high-pressure burners can sometimes be rented from a rental company or a restaurant supply house or purchased from a local or online source. There are two types: 1) high pressure jet burners, and 2) high pressure banjo burners. Jet burners are preferred because the flame is not usually blown out by wind, they require little maintenance, and are cheaper. However, the jet burners are noisy compared to the banjo burner. If you have jet burners next to a wall, the noise can be irritating.



Pots

In order to produce a successful boil you need big pots with strainers. Strainers made to fit the pots are a must for a successful boil. An 80 quart pot works best. Bigger pots can be used, but it is hard to handle the amount of food that can be cooked in them. There will be about 7 inches of head room in a standard 80 quart pot if you put 12.5 gallons of water in it. The cooking test showed good results if you put two pounds of shrimp to a gallon of boiling water. Smaller pots can be used, but it makes boil management more difficult.

Other equipment

As noted, the food for a traditional boil is spread down the table and people pick it up with their hands. But these are usually private or family affairs where tickets aren't sold. The health department does not inspect such affairs. With a public event, the health department is involved and they will likely not approve the spreading of loose food onto the table. For the pilot boil we tested two ways of serving the food. With one method

enough food for four people was placed in a foil pan with tongs. Two foil pans went on each eight-person banquet table. For the other method, we built a narrow oblong container the length of the banquet table and covered it with one-time use plastic sheeting. This allowed for a more traditional and festive way of serving and didn't raise red flags with the health department. With both methods the diners served themselves with tongs. Make the oblong container 12" wide. Then provide 8" paper plates for both sides of the table. Under this schema everything will fit on a 30" banquet table.

Eating Style

Typically boils are eaten standing up. This makes it more fun and gets people talking with each other even if they were strangers prior to the boil. Boils done where everyone sits are never as much fun. However, the standard fold-up banquet table needs to be raised about eight inches if the average diner is to eat comfortably while standing. The easiest way to do this is to cut pvc pipe extensions and slip them over the ends of the banquet table legs (see picture below). **Note:** You will need to provide some seated tables for the physically disabled and those who won't eat standing up. However, encourage those who can to eat at the standing tables, as they will probably have a better time.



Use PVC pipe to raise the tables about eight inches so that guests will be comfortable eating while they stand.

The Waste Removal

Contact your local Public Works Department for solid waste and recycling program information, prior to the event, to see if there are options for collecting and recycling the vegetable and seafood refuse for composting. If there is a recycling plan established, this could be another positive “green” concept to promote your event along with supporting the local agriculture economy.

The Promotion Plan

Traditionally, event planners have used newspapers, radio, and television as the key tools to promote a major event. Now with the advent of electronic mail, social media, and web-based calendars and event planning sites, marketing an event requires a savvy promotion team. The marketing plan will:

- Identify the audience for the event.
- Create a database of names and contact information.
- Design e-mail messages that encourage individuals to visit the event website.
- Promote the event on regional radio stations offering an “event gift certificate” as contest prizes.
- Build friends on Facebook and use Twitter messaging to keep your fans informed on the progress of the event.
- Base the publicity on the value of the experience a person will have by attending the event.

Remember, start small. Keep the event a sold out, fun-filled experience. A successful event will result from extensive planning done by dedicated individuals who value local products and have a vision for connecting the farm to the community. Great food, exciting activities, appropriate venue, and great service will put a shrimp/prawn boil on everyone’s calendar!

Advice from the Pilot Boil

Participants at the seafood boil were extremely pleased with freshwater shrimp being the featured ingredient in the boil and liked the quantity of food, taste, and presentation. Those completing the evaluation enjoyed a) the socialization and festive atmosphere, b) eating local food, and c) supporting the local farmer. Suggestions were offered that tickets for this type of event could be sold for between \$30 and \$39. One guest was a little concerned with the “head-on” feature and suggested that heads be removed. However, you are creating a fun memorable event.

The head-on feature makes the event more unique. As well from the evaluation comments, high quality napkins and wet wipes are extremely important for the comfort of the diners.

Health Permit

Whether you have the event catered or you prepare the food for the event, a health department permit will be required. If you are using a caterer, the health permits will be obtained by the company doing the catering. Once everyone learns the specific tasks and tricks of seafood boils, the cooking is relatively easy to do since, for the most part, it just requires boiling water. It is not a difficult process so long as you meet health department specifications.

Temporary Food Establishment

Food vendors with a limited menu for public events like a Farm-to-Fork dinner, shrimp boil, fairs and festivals are considered a Temporary Food Establishment and need to obtain a temporary food permit from their local health department. The Virginia Food Regulations 12 VAC 5-421-10 defines a Temporary Food Establishment as a food establishment that operates for a period of no more than 14 consecutive days in conjunction with a single event or celebration.

To apply for a temporary food establishment permit, contact your local health department, where you will be directed to complete and submit an application along with any applicable fees. Be sure to research this information well in advance of your event since most localities require an application be filed 30 days prior to the event. The application must be submitted to the health department in the location of the event. It is important to draw a schematic of your planned operation so the health department can understand your plan. *To find a Local Health District in Virginia near you visit: <http://www.vdh.state.va.us/lhd/>.*

An Environmental Health Specialist will contact you after your completed application is reviewed to discuss your operation, obtain additional information if needed, and answer any questions you may have. Permits for Temporary Events are issued by the Health Department *on the day of the event*, prior to the start of the food operation. An onsite inspection by the Health Department will be conducted prior to permit issue.

Food Safety

The Health Department will have all the necessary regulations and guidelines related to food safety for your event but the primary regulations to be aware of are listed below.

- All food, water, ice, etc., will need to be from approved sources. Food prepared at the event will need to have a health department permit. (See Temporary Food Establishment section.)
- If well water is being used, a current year water sample test result showing negative growth will need to be submitted with the application, or bottled water can be used.

Food Temperatures

Potentially hazardous food/temperature control for safety (PHF/TCS) food is a term used by food safety organizations to classify foods that require time/temperature control to keep them safe for human consumption. Some examples of PHF/TCS include fish, shellfish, meat, poultry, eggs, dairy, and heat-treated plant food including rice, potatoes, beans, and vegetables.

Since these foods can harbor pathogenic microorganisms and permit their growth or the production of toxins, special care must be taken to keep them out of the temperature danger zone for as long as possible. The FDA Food code defines the danger zone as between 41 degrees Fahrenheit and 135 degrees Fahrenheit. Potentially hazardous foods should not be stored at temperatures in this range in order to prevent food-borne illness.

Cold Holding

Regulations require that you maintain **cold holding** of potentially hazardous foods at **41°F or below** at all times. Display thermometers should be kept in coolers to verify temperature accuracy. A cooler can be used as long as it can maintain cold holding temperatures and ice can be drained frequently.

Hot Holding

Maintain hot holding of potentially hazardous foods to 135°F or higher at all times. Use an easy to read food grade metal stem thermometer for food products accurate to $\pm 2^\circ\text{F}$.

- Cooking temperature for seafood is 145°F, for pre-cooked pork sausage 145°F, and for uncooked sausage 160°F.

- A probe type thermometer is best for checking internal temperatures for both hot and cold food items.

Hand Washing

The most common cause of contamination during food preparation and serving is unclean hands. For this reason, a hand washing station is required and must be set up prior to handling food. Stations or facilities need to be designed to provide unaided hand washing under a continuous flow of running water. Water spigots of the push-button type are usually not allowed.

Hand washing requires a hand sink with running water, soap, and paper towels or a water cooler with spout, catch basin, soap, and paper towels.

Personal Hygiene

Good personal hygiene is an important factor in food safety. Unclean hands, clothing, and hair can contribute to contamination.

- Avoid bare-hand contact with ready to eat foods.
- The use of deli paper, spatulas, tongs, or gloves will help minimize risks.
- Hands should be washed frequently and hair restraints such as hats, ties, and nets should be worn.

Equipment Requirements

Store food and equipment at least 6 inches off the ground and be sure the temporary kitchen has adequate overhead protection such as a tent, canopy, or other type of protection. This ensures a safe workplace offering protection from weather, wind, birds, etc. Store food in clean bins until ready to serve.

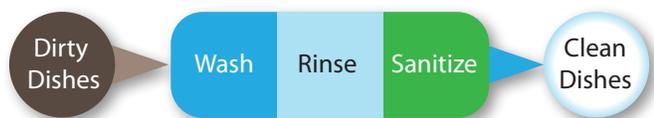
Kitchenware Washing Procedure

Cleaning and sanitizing of equipment and utensils is an important procedure in your food safety plan. Equipment and utensils should be cleaned and sanitized at least every two hours. The use of a three basin system ensures that your equipment is washed, rinsed and sanitized. The three basins should be large enough for immersion of the utensils and equipment. A potable hot water supply and an adequate disposal method for wastewater are also part of the process. The first tub will be the wash basin and have warm soapy water, the second tub is used to rinse, and the third tub will sanitize. Approved sanitizers include Clorox bleach and must be used at the appropriate strength (if using bleach,

maintain the chlorine concentration between 50 and 100 parts per million; this is approximately 1 tablespoon bleach per 1 gallon/water.) Other approved sanitizers include quaternary ammonium and iodine.

Soak the clean, rinsed items in sanitizing solution for at least 15 seconds and then either air dry or wipe dry with a disposable towel. Then store cleaned equipment and utensils in a clean place.

All wastewater must be disposed of properly, to either a sanitary sewer or a drain field.



Catering as an Option

An alternative to going through these food safety steps is to consider hiring a caterer. A caterer provides food service to a remote site and can be hired to organize the food for the shrimp boil. Catering duties range from dropping off pre-packaged meals to cooking up food

on the spot. They are required to obtain the necessary Food Service Permits, State Business License, and Alcohol Permits and are required to be licensed with the state in order to perform their duties. The catering license is necessary and unique for caterers because it's geared toward workers who deliver food to a site where it is then served to clients.

Caterers in Virginia must work with their local health departments to license their operations as retail food businesses. In addition, they are required to hold all licenses required for businesses to operate in the Commonwealth of Virginia, including state and local licenses. If they have employees they must register with the state and federal government, and if they are serving alcoholic beverages they must obtain the appropriate license from the state's Alcoholic Beverage Control board.

A caterer normally works alongside other event workers like a wait staff that can help set up a site by placing chairs, tables, and decorative ornaments. There might also be a specific theme to the event that the caterer can assist with.

We Want to Hear from You

If you have staged a shrimp boil, Virginia Cooperative Extension would like to get your feedback on what went well and what things you'll improve the next time. Perhaps your experiences can be shared in a revised manual. Maybe there will be enough interest that a Facebook boil page can be created so "boilers" can exchange tips as well as share insights with future boil hosts.

Please contact:

Daniel Kauffman, Extension Specialist Seafood
dkauffma@vt.edu
757-727-4861

or

Martha Walker, Community Viability Area Specialist
walker53@vt.edu
434-766-6761

Acknowledgements

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Virginia Farmer-Grown Prawns Survey

INSTRUCTIONS: Please circle or check one choice for each question

1. Is this the first time you have purchased freshwater prawns/shrimp?	Yes	No	
2. IS this the first time you purchase head-on shrimp?	Yes	No	Bought Head-off
3. Knowing that head-off freshwater prawns/shrimp cost more than head-on shrimp, which form would you purchase next fall?	Head-on	Head-off	
4. If these shrimp/prawns are available frozen at a similar price point at other times of the year, would you purchase them?	Yes	No	

5. What is the main reason you decided to purchase these prawns/shrimp?

- A. Wanted to try freshwater shrimp.
- B. The seafood boil appealed to me.
- C. I wanted to try head-on shrimp.
- D. I support locally grown food.
- E. Other (spec) _____

6. How did you cook the prawns/shrimp?

- A. Grilled
- B. Boiled
- C. Baked or broiled
- D. Sautéed
- E. In a seafood boil as suggested in the brochure

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7. I thought these prawns/shrimp tasted very good.	1	2	3	4	5
8. I liked the taste and experience of the head-on shrimp. (skip if purchased head-off)	1	2	3	4	5
9. Buying locally produced food is important to me.	1	2	3	4	5
10. The fact that these prawns/shrimp are fresh (never frozen) is important to me.	1	2	3	4	5

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Extension is a joint program of Virginia Tech, Virginia State University, the U.S. Department of Agriculture, and state and local governments.

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11. As these farmer-grown prawns/shrimp are only available fresh during the fall harvest, I will likely make them an annual purchase.	1	2	3	4	5
12. I would recommend purchasing these prawns/shrimp to family and friends if they are available fresh next fall.	1	2	3	4	5
13. Offering unique foods like Virginia farmer-grown shrimp or other items unavailable elsewhere makes me more likely to shop at Wegmans.	1	2	3	4	5
14. I like it when a recipe and suggested ingredients for a special meal like a seafood boil are made available in one place in the store during a promotion.	1	2	3	4	5
15. What is your gender?	Female		Male		
16. What is your age?	Less than 22	23-35	36-49	50-65	Over 65
17. What is your ethnicity?	<input type="checkbox"/> White or Caucasian <input type="checkbox"/> Black or African American <input type="checkbox"/> Asian or Pacific Islander <input type="checkbox"/> Hispanic or Latino <input type="checkbox"/> Other _____				
18. What is your household income?	<input type="checkbox"/> Less than \$40,000 <input type="checkbox"/> \$40,00 to \$65,000 <input type="checkbox"/> \$65,000 to \$100,000 <input type="checkbox"/> \$100,000 to \$150,000 <input type="checkbox"/> More than \$150,000				

You have no obligation to complete this survey. However, if you choose to fill out the survey and return it in the stamped, addressed envelope, a \$15 Wegmans gift card will be sent to you by return mail. **Please go to the next page for details.**

If you return this completed survey you will receive a \$15 Wegmans gift card by return mail. In order to receive the gift card please list your name and address below:

Name

Street

City

State

Zip

Then return the survey in the stamped, addressed envelope you have been given.

If you have lost the stamped envelope you can still mail the survey to:

VA Seafood AREC/VA Tech
Attn: Gail Jamison
102 S. King St.
Hampton, VA 23669

As soon as your survey is returned and the gift card mailed, your name and address will be shredded and disposed of in a safe manner. Thank you.

The freshwater shrimp you purchased were grown by a Virginia farmer. By filling out the survey you will assist farmers in determining where they should market freshwater shrimp and thus increase the strength of the Virginia rural economy. Your identity will be kept confidential and no individual survey will be referred to for analysis. This project has been approved by the Institutional Review Board for projects involving human subjects at Virginia Polytechnic Institute and State University (VA Tech).

Questions: Dan Kauffman
VA Seafood AREC/VA Tech
102 S. King St.
Hampton, VA 23669
757-727-4861

David Moore, Chair
Institutional Review Board
540-231-4991

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2015 Shrimp Boil

Saturday, September 19, 2015
The Shirley Plantation, Charles City, Virginia

Event Evaluation

Statement	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
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Atmosphere/Entertainment

I would buy a ticket to this event next year.					
The atmosphere for the shrimp boil was fun and inviting.					
The band made the boil more enjoyable.					
Knowing the event will have musical entertainment (a band) will increase the likelihood that I will purchase a ticket next year.					
Would you recommend this type of event to your family and friends?					

Food (Taste and Presentation)

I enjoyed the taste the freshwater shrimp boil.					
I found the presentation of the shrimp boil to be appetizing.					
I prefer all head-off shrimp even if ticket prices increases.					
The mix of whole and head-off shrimp was about right.					
I was pleased with the amount of shrimp to eat.					

Local Food Demand

	Yes	No
Would you purchase freshwater shrimp to serve in your home?		
Do you purchase locally grown vegetables from area farmers/farmers' markets?		

Suggestions for improving this event . . . (use the back of this page if needed)

Please return this evaluation to: Martha A. Walker, Ph.D., Virginia Cooperative Extension