

ACCEPTANCE OF THE *SUNRAY VENUS* CLAM (*Macrocallista nimbosa*) CULTURED IN FLORIDA

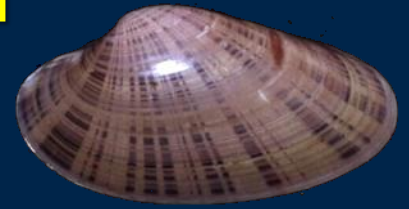


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⁴ Harbor Branch Oceanographic Institution

Study Background



Funded by Florida Sea Grant

Joint UF / Harbor Branch Oceanographic Institution effort

Goals

Assess the production feasibility as an alternative crop to existing shellfish growers

Determine the financial characteristics of the hatchery, nursery and grow-out phases

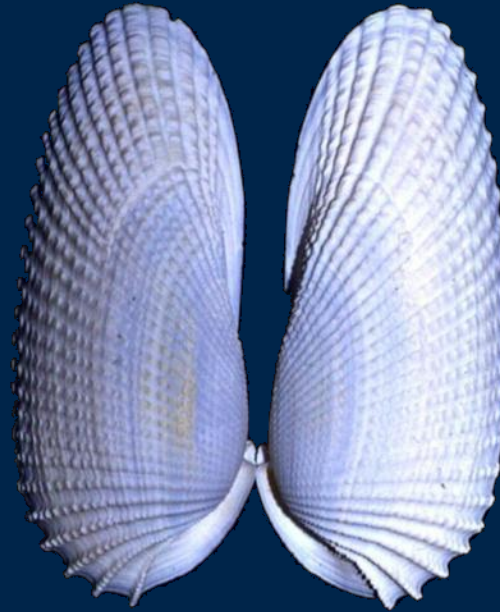
Test the market acceptance of sunray venus clams in the traditional restaurant and sushi “bar” settings



Sunray Venus Clam
Macrocallista nimbosa

Florida Hard Clam Aquaculture Species Diversification

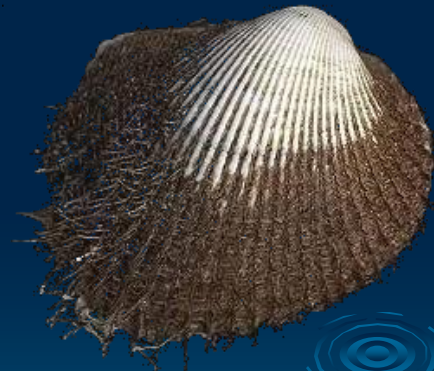
- Monoculture industry dependant upon a single product
- Exploring potential of culturing variety of marine molluscan shellfish species



Angel wing



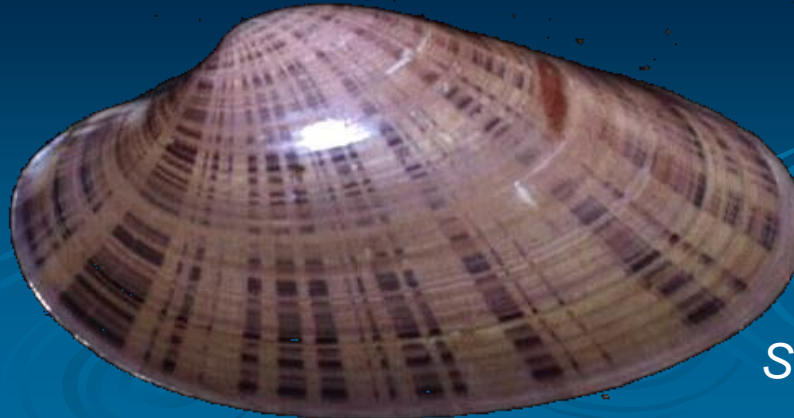
Ponderous ark



Blood ark



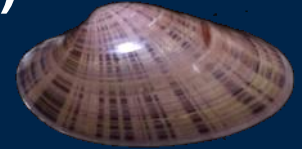
Bay scallop



Sunray venus

Market Acceptance Tests

Fall 2008 (cooked) & Fall 2009 (sushi)



Locate restaurants willing to participate

Develop survey questionnaires and methodology

Provide shellstock product to restaurants

Survey patrons regarding product attributes,
acceptance, likelihood of future purchase

Similar study done (1999) with Florida cultured bay scallops

Argopecten irradians

(also done in Virginia)



Survey Development and Implementation Methodology

- Create a *brief* survey instrument for completion by patron at table
- Create wait staff primer materials / table tents
- Meet with restaurant managers, chefs, and wait staff to ensure proper questionnaire completion
- Assured restaurant owners / chefs that the clams would be taken from approved waters, properly tagged, and delivered when promised

Interesting “Obstacle” for Chefs Specific to Sunray Venus Clams



“Grit Pocket” ...

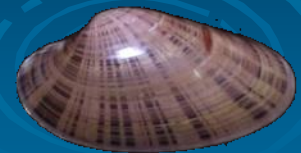
... which must be removed prior to consuming ??

Patron Survey Questions

- Preparation method
- Entrée / Appetizer
- Price paid
- Attribute evaluation (appearance, taste, texture, tenderness, value)
- Grittiness?

- Hesitancy to consuming sunray venus clams
- Order product again?
- Recommend product?

- Year born
- State / country of longest residence
- Current zip code
- Cultural heritage



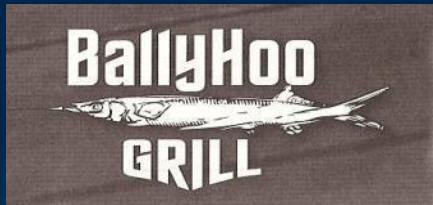
Participating Restaurants, Cooked Product Testing, 2008



Gibson Inn, Apalachicola, Florida



Cedar Key, Florida



Gainesville, Florida

Campbell's Restaurant



Bronson, Florida

Cooked Product Consumer Acceptance Assessment Fall 2008



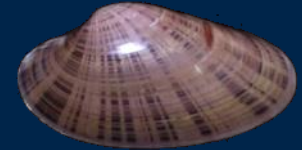
**sunray
venus
clams**



**homegrown in
Florida
try them
today!**



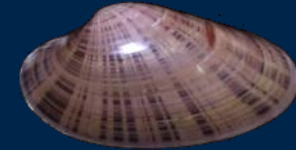
Delivery Schedule Across All Restaurants



Date	# Delivered	# per restaurant	Ave. SL (mm)	Ave. SW (mm)	Ave. SH (mm)	Ave. T wt (g)
10.23.08	750	250	64.5	22.9	37.2	33.9
10.24.08	200	200	-	-	-	-
10.30.08	750	250	62.9	22.3	36.4	32.4
10.31.08	236	236	64.7	24.2	36.9	36.7
11.06.08	1125	250-500	61.0	24.2	35.0	32.9
11.07.08	236	236	64.7	24.2	36.9	36.7
11.12.08	1250	250-500	65.8	25.6	37.3	39.6
11.17.08	250	250	-	-	-	-
12.12.08	500	500	53.5	21.2	30.4	23.5
12.18.08	625	625	62.9	22.7	34.8	32.6

Total number delivered: 5,922

Number of Completed Surveys by Restaurant



<u>Restaurant</u>	<u># Completed</u>	<u>% of Total</u>
Island Room	47	20 %
Campbells	49	21 %
Ballyhoo Grill	98	41 %
Avenue Sea	<u>45</u>	18 %

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Patron Survey Findings

Characteristic

Percent of respondents

Gender

Male	51.9
Female	48.1

Years of Age

< 30	21.3
30-35	8.5
36-49	22.1
50-64	39.1
> 64	8.9

US Region of Longest Residence

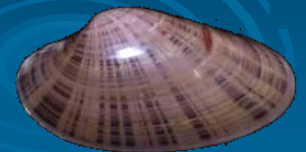
West	4.6
Midwest	7.8
NE	6.9
SE	80.7

Current Florida Resident

Yes	92.8
No	7.2

Race / Cultural Heritage

Caucasian	87.4
Afro – American	0.8
Asian	2.9
Hispanic	3.8
Other	5.0



Patron Survey Findings ... cont'd

** Please indicate your initial reaction to the thought of eating Sunray venus clams*

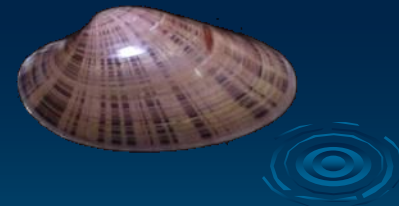
Not Hesitant At All

Extremely Hesitant



2.21 average score (Hesitancy Index – HI)

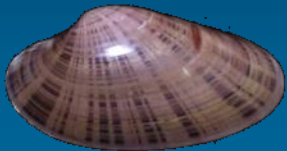
- Only 30 respondents selected an HI of 5 or higher
- HI varied by gender: males – 2.30 females – 2.16
- HI varied by age ...
 - most hesitant – “<30” (2.83), “50-64” (2.17), “>64” (1.97)
 - least hesitant – “30-35” (1.52)



Patron Survey Findings

Preparation Methods Chosen by Chefs

Steamed	47.3%
Broiled / baked	26.3%
Soup / stew	5.4%
Fried	1.8%
Raw	1.8%
Other	17.4%



Served as ... appetizer (78%) vs entrée (22%)

Patron Survey Findings ... cont'd

** Attribute ratings for sun ray venus clams*

	Excellent	Very Good	Good	Fair	Poor
..... % of all respondents for each attribute					
Appearance	84	13	2	1	0
Taste	72	18	8	2	0
Texture	63	25	9	2	1
Tenderness	58	25	9	4	2
Value	61	24	10	4	1
Overall	70	20	8	2	0

There does not appear to be any strong pattern of attribute ratings by gender or age



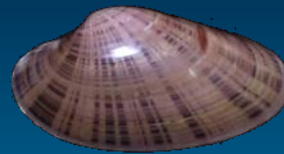
Patron Survey Findings ... cont'd

- *Did you detect any grittiness in the*
- *Sunray venus clams??*

Yes – 11 %

No – 89%

To our knowledge, none of the chefs bothered
to remove the “grit pocket”



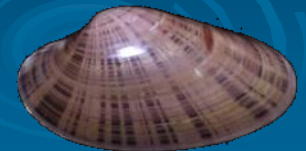
Patron Survey Findings ... cont'd

	Price Range Paid by Respondent			
	≤ \$5	\$5.01 - \$10	> \$10	Average
Entree	26%	41%	33%	\$9.65
Appetizer	24%	67%	9%	\$7.80

Didn't handle this very well via survey process ...

Need to know more about ...

- **price consumer would be willing to pay**
- **price restaurant would pay**
- **wholesale – distributor - restaurant pricing strategies**



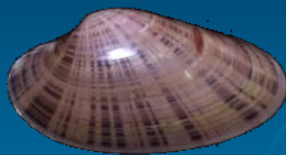
Patron Survey Findings ... cont'd

- *Would you order this product again?*

Yes – 94% No – 6%

- *Would you recommend this product?*

Yes – 97% No – 3%



An overall positive acceptance

Raw Product Consumer Acceptance Assessment Fall 2009



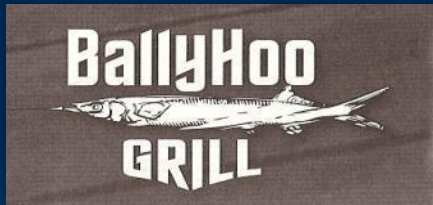
Participating Restaurants, Raw Product Testing, 2009



Gainesville, Florida



Gainesville Florida

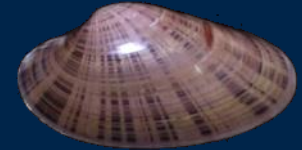


Gainesville, Florida



Jonesville, Florida

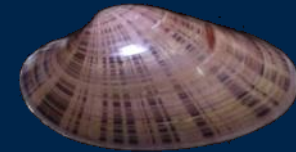
Delivery Schedule Across All Restaurants



Harvest Date	# Delivered	# per restaurant	Ave. SL (mm)	Ave. SW (mm)	Ave. SH (mm)	Ave. T wt (g)
10.21.09	425	125 (3), 50	66.5	25.0	38.7	40.1
10.28.09	220	100, 120	67.6	25.5	39.0	41.4
11.04.09	275	125, 100, 50	68.0	25.9	38.8	42.6
11.09.09	275	125, 100, 50	68.1	26.4	38.9	43.7

Total number delivered: 1,195

Number of Completed Surveys by Restaurant



<u>Restaurant</u>	<u># Completed</u>	<u>% of Total</u>
Dragonfly	41	40 %
Tatu	17	17 %
Ballyhoo Grill	22	22 %
Fuji	<u>21</u>	21 %

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Patron Survey Findings ... cont'd

** Please indicate your initial reaction to the thought of eating raw Sunray venus clams*

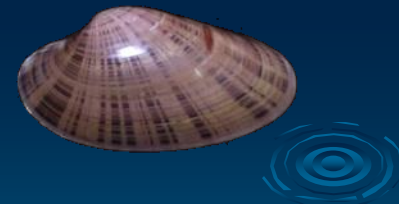
Not Hesitant At All

Extremely Hesitant



1.93 average score (Hesitancy Index – HI)

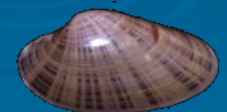
- Only 18 respondents selected an HI of 5 or higher



Patron Survey Findings ... cont'd

** Attribute ratings for raw sun ray venus clams*

	Excellent	Very Good	Good	Fair	Poor
..... % of all respondents for each attribute					
Appearance	60	24	14	2	0
Taste	44	31	13	5	7
Texture	45	25	23	6	1
Tenderness	43	32	15	8	2
Value	53	20	16	7	4
Size	40	29	18	11	2
Color	56	24	16	3	1
Overall	43	33	15	4	5
<i>Overall (C)</i>	<i>51</i>	<i>30</i>	<i>17</i>	<i>2</i>	<i>0</i>
<i>Overall (A)</i>	<i>32</i>	<i>27</i>	<i>14</i>	<i>9</i>	<i>18</i>



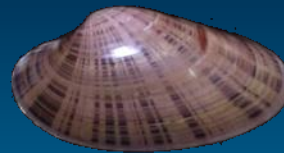
Patron Survey Findings ... cont'd

- *Did you detect any grittiness in the*
- *Sunray venus clams??*

Yes – 19 %

No – 81%

This response would apply to product served whole on the half-shell ... chefs were instructed regarding how to find and remove grit pocket



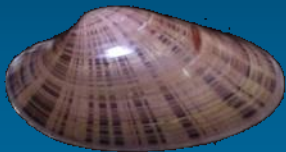
Patron Survey Findings ... cont'd

- ***Would you order this product again?***

Overall →	Yes – 83%	No – 17%
White →	Yes - 89%	No – 11%
Asian →	Yes – 63%	No – 37%

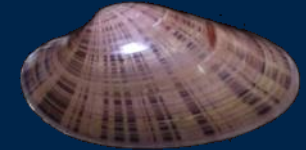
- ***Would you recommend this product?***

Overall →	Yes – 91%	No – 9%
White →	Yes - 94%	No – 6%
Asian →	Yes – 64%	No – 36%



***An overall positive acceptance ...
but acceptance by race differs***

Summary



- Overall positive rating by consumers
- Some market segmentation may exist
- Overall positive rating by chefs/managers
- Market placement and pricing strategies
 - Depth of market???
- Explore production costs and other markets / barriers to commercialization

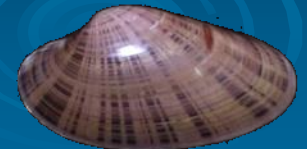


Next Major Phase of Commercial Assessment

“Eliminating Barriers to Commercial Production of Sunray
Venus Clams”

Florida Sea Grant College Program , UF/IFAS
2010-2012

Objective: To examine product attributes of sunray venus clams with respect to wholesale market and product distribution standards for molluscan shellfish





Thank you!