



A New Aquaculture Species

The sunray venus clam *Macrocallista nimbosa* is a large, attractive clam distributed from South Carolina to Florida and the Gulf of Mexico states. During the 1960-70s, these clams were commercially harvested off the northwest Florida coast. Although the clams' natural growth rates were estimated to be high, their patchy distribution limited commercial exploitation. The prior fishery and existence of a latent market, along with it being a native species, made the sunray venus clam a logical choice as a candidate species to expand the shellfish aquaculture industry in Florida. Product diversification will also provide growers and wholesalers the opportunity to reduce the market and price risk with selling only established, traditional species.

Over the past five years, research and extension faculty at the University of Florida and Harbor Branch Oceanographic Institute at Florida Atlantic University, along with industry project partners, have evaluated the aquaculture and market potential of the sunray venus clam with funding through the Florida Sea Grant College Program.

HARBOR BRANCH

FLORIDA ATLANTIC UNIVERSITY*



What Do You Think?

Cultured sunray venus clams have been provided to restaurant patrons to test consumer acceptance and seafood wholesalers to evaluate product attributes. Their responses have provided key information in assessing market demand and product standards. Sunray venus clams were also showcased at the Fresh from Florida Pavilion during the 2011-12 International Boston Seafood Shows, where buyers reacted positively to this new product, commenting on the clams' unique taste, texture, appearance, meat and shell color. If you have never tasted sunray venus clams, you may wish to give them a try! Your reaction will help us better understand their market potential and guide the industry in developing a new Florida seafood product.

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Your Sunray Venus Clam Supplier

Introducing the
**Florida
Sunray
Venus Clam**
Macrocallista nimbosa



**A NEW
aquaculture
molluscan
shellfish
species**



Aquaculture Production

Technical methods to culture the sunray venus clam have been developed, tested, and demonstrated. Culture methods standard to those employed by the Florida hard clam culture industry were used as a starting point.

To date, spawning, larval and post-set rearing, land-based nursery, field nursery and growout culture methods for sunray venus clams are exhibiting little difference from hard clam methods. Current trial production efforts appear successful. Using data from these rearing trials, sunray venus clams can reach potential market-size in 20 to 24 months from spawning at commercially acceptable survival rates.

The sunray venus clam is oblong in shape, whereas other clam species are typically round. Thus, harvest sizes of the sunray venus may differ. Dimensions for two potential size grades of the sunray venus clam follow.

Shell Width	20 mm (0.8")	26 mm (1")
Shell Length	54 mm (2.2")	68 mm (2.7")
Total Weight	21 g (22/lb)	42 g (11/lb)
Meat Weight	5 g (0.2 oz)	11 g (0.4 oz.)



Consumer Acceptance

The consumer acceptance of both cooked and raw sunray venus clams has been evaluated in local Florida markets. Recent studies provided an assessment of consumers' opinions of sunray venus clams with respect to a number of product attributes. Overall, consumers rated sunray venus clams very highly as a food product, and expressed a strong willingness to both order the product again and recommend the product to others.

Cooked Product Assessment

Sunray venus clams were served in a typical restaurant setting, either steamed, baked or broiled.

- ◆ Cooked product was rated very highly on the basis of appearance, taste, and texture, with 90% of the respondents indicating a rating of Excellent or Very Good.
- ◆ For all respondents, 94% were willing to order the product again, and 97% were willing to recommend the product.

Raw Product Assessment

Sunray venus clams were served in sushi restaurant settings, either raw in the traditional sushi or sashimi manner.

- ◆ The overall rating for raw product was slightly lower than cooked product, with 76% of the respondents indicating a rating of Excellent or Very Good.
- ◆ For all respondents, 83% were willing to order the product again, and 91% were willing to recommend the product.

Sensory Profile

The trained seafood sensory panelists at the University of Florida's Aquatic Food Products Lab conducted a sensory evaluation to describe the characteristics of the sunray venus clam. These attributes are profiled below.

- ◆ Shell Appearance—Glossy-smooth with a radiating pattern, grayish to brownish color tones turn peach to orange when cooked.
- ◆ Meat Appearance—Very plump, fully covered clams, predominately light colored.
- ◆ Aroma—Moderate briny and metallic aroma.
- ◆ Texture—Firm.
- ◆ Basic Flavors—Salty with moderate umami.
- ◆ Flavors and Aftertastes—Seaweed accompanied by strong metallic.

Nutritional Profile

Sunray venus clams are a low-fat source of protein. A single 3-ounce (85 g) serving (18 to 20 cooked clams) provides approximately 9 grams of protein. The low fat content (<1%) is composed primarily of polyunsaturated fat (68%, with 50% omega-3 fatty acids) and the remainder is saturated fat. The level of cholesterol is 25 mg per serving, which is low when compared to fish, shellfish, and other foods. Sodium content is 360 mg per 100 grams. Another important nutritional feature of the sunray venus clam is that a single serving provides a good complement of minerals and vitamins.

Shelf Life Assessment

Molluscan shellfish are typically shipped as live shellstock and adequate shelf life is an important product attribute. Cultured sunray venus clams were evaluated for shelf life under refrigerated storage. In the winter, commercially acceptable survival (98%) was 21 days after harvest. In the summer, survival (94%) was reduced to eight days.