



*In preparation for shipping to the market place live sunray venus clams are counted, packaged in tubular netting, and tagged by the wholesaler.*

## SHELF LIFE ASSESSMENT

SHELF LIFE of any food is defined as the maximum length of time a given product is suitable for human consumption. Molluscan shellfish (clams, oysters) are typically shipped as live shellstock and adequate shelf life is an important product attribute. For mollusks, shelf life is the time from when the clams are harvested from the water

until they are no longer fit to eat. The shelf life of the sunray venus clam was documented during the summer and winter to account for the influence of water temperatures at harvest. In this study, harvested sunray venus clams were tempered at 72°F for 6-10 hours prior to being placed in refrigerated storage, which was maintained at a

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- ▶ Sensory Profile
- ▶ Aquaculture Production Potential
- ▶ Nutritional Profile



*After harvest sunray venus clams are size-graded for uniformity.*

constant 45°F. Visual judgments were used to assess survival of sunray venus clams on a daily basis. Gaped clams were considered dead when they did not respond by closing their shells to specified agitation, or tapping, after the clams were held for a short time at room temperature. Dead clams were counted and removed from the sample bags. Results of the shelf life assessment are tabulated in the table.

During the summer shelf life assessment, sensory ratings were also determined for raw meats of the sunray venus clam. The sensory assessment involved a team of three seafood experts experienced in sensory judgments for raw and cooked seafood. The sensory judgments were based on daily evaluations of the clams using a 9-point hedonic scale that equates to 'Preferred' quality (1-3), 'Acceptable' quality (4-6), and 'Unacceptable' (7-9). 'Unacceptable' quality denoted the end of shelf life, while 'Acceptable' denoted the transition from 'Preferred' product quality. Like other clams, the sunray venus clam has a mild sea breeze odor and a briny, metallic flavor during the 'Preferred' stage. The end of shelf life is characterized by a disappearance of the ocean-like odors, and development of the typical odors and flavors that denote spoilage, such as strong fishy, wet dog, and bitterness.

An unanticipated and unique observation of the sunray venus clam is the tendency of this mollusk to remain

## Shelf Life of Sunray Venus Clams in Refrigerated Storage

Harvest Conditions	Avg. Storage Temperature	Shelf Life (days after harvest)	% Survival (range)
Summer (water temp >85°F)	45°F	8 days	86 – 92%
Winter (water temp <75°F)	45°F	14 days	90 – 94%



*Live sunray venus clams can easily be shipped in temperature-controlled boxes.*

closed when approaching mortality. This is in contrast to other clam species and even the sunray venus clam during the first week in refrigerated storage. Clams typically gape or open when they become weak or die during storage. Therefore, it is recommended

that retailers conduct a daily sensory evaluation of sunray venus clams nearing the shelf life expiration date (7 days after harvest in the summer and 12 days after harvest in the winter) to ensure product is suitable for consumption.



THIS COMPONENT OF AN INTEGRATED RESEARCH AND EXTENSION PROJECT EVALUATING THE SHELF LIFE ASSESSMENT OF THE SUNRAY VENUS CLAM WAS CONDUCTED BY STEVE OTWELL AND LAURA GARRIDO AT THE UNIVERSITY OF FLORIDA, FOOD SCIENCE AND HUMAN NUTRITION DEPARTMENT WITH FUNDING FROM THE FLORIDA SEA GRANT COLLEGE PROGRAM.