

# New Jersey Growers' Guide to Surfclam Culture

## SPAWNING

- For New Jersey farmers, look for your broodstock clams on the farm to ripen up in late April/early May; field conditioned clams perform the best. Artificial conditioning is challenging with this species. Spawning small ripe surfclams is easily done with thermal stimulation. A 40 mm female can produce 5 million eggs in a single spawn. Repeat spawns of the same clams 1 week later often produce additional high-quality eggs.

## LARVAL PRODUCTION

- Keep your larvae between 66 and 69°F (19 to 21°C). Feed surfclam larvae a mixed diet of *Tisochrysis lutea* and *Pavlova pinguis* at a steadily increasing ration (Table 1).
- Larvae can be set in about 21 days in downwellers, similar to systems used for hard clams. The highest mortality during surfclam hatchery production typically occurs the two weeks following metamorphosis, so take care to reduce any stress the clams may experience during this period.

## NURSERY

- Upwellers using ambient water are effective to produce plantable 12mm seed in 3 to 4 months. Maintain relatively low densities (Table 2), keep clams well size sorted, and clean screens regularly to get the best growth.
- Avoid low salinity in the nursery as this could lead to mortality – surfs like it salty (25 to 35 ppt).

**Table 1. Surfclam larval and early juvenile feeding chart**

Days post-spawn	Feeding ration (K cells ml <sup>-1</sup> )
0	0
1	10
2	20
3	30
4	30
5	35
6	40
7	40
8	40
9	45
10	45
11	45
12	45
13	50
14	50
15	50

**Table 2. Nursery Stocking Density**

Clams retained on mesh size (mm)	Stocking Density		Nursery System
	Clams per cm <sup>2</sup>	Clams per 18" silo	
0.23	185-200	290,000	Setting larvae; Downwelling Bell Siphon
0.50	102-125	167,000	Bell Siphon; Upwelling
0.75	60-100	122,000	Upwelling
1.5	15-45	45,600	Upwelling
4.0	6-12	13,700	Upwelling
7.5	3-5	6,100	Upwelling

## SITE SELECTION

- Choose an outplanting site that doesn't have too much silt. Sandy or somewhat hard bottom is best.
- Avoid locations with prolonged warm water temperatures (stay away from spots that exceed 80°F (26.6°C) for more than 3 weeks).
- Surfclams require sites that are normally salinity above 28. Avoid intertidal sites where excessive heat, drying or freezing can cause mortality.

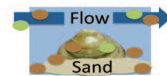
Shallow Raceway without Sand



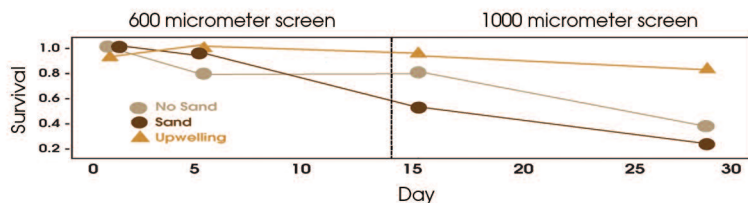
Shallow Raceway with Sand



Shallow Raceway with Sand



## Best Survival in Upwellers

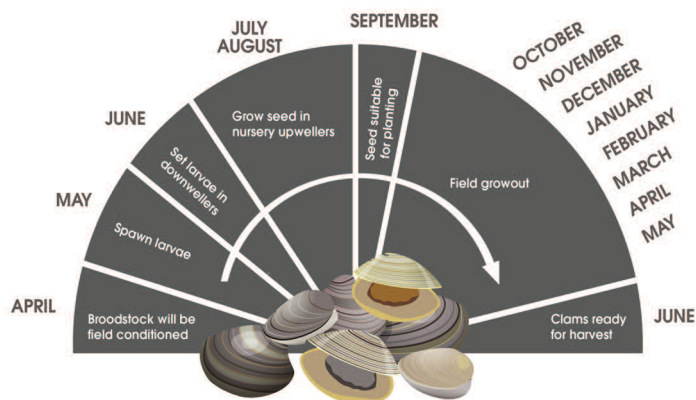


Survival of surfclams over 28 days in three nursery systems. Mesh in upwellers was changed at day 14 and stocking density in all three were reduced. The upwellers performed best and had significantly higher survival, and were less labor to maintain.

## GROWOUT

- Surfclams can be grown in the bottom in nylon mesh bags or rigid plastic bags. They can also be grown off the bottom to about 45 mm in size in oyster cages and box bags. If growing off bottom, ensure cages are located deep enough that they do not get exposed during blowout tides – keep them submerged. Avoid planting under conventional clam screens. Surfs are highly active and will find their way out from under screens. Crab predators also find them very tasty, so design growout systems that are robust to sharp claws.
- Surfs will put on active growth through much of the winter months – cold water is not a problem.

## SURFCLAM TIMETABLE



## HARVEST

- If planting 12mm seed in early September, you may expect to have harvestable clams (45mm) by June or July the following year.
- When harvesting surfclams, particularly if they are grown in the bottom, make sure to purge them well before bringing them to market. Their high activity means that they tend to have more sand and grit than other clams.

## SHELF LIFE

- Live surfclams have an approximate 10-day shelf life. They are active, so they will gape more than hard clams so be sure to alert your customers to this – think live mussels. Best handling is to keep them in an open-mesh bag, wrapped in a damp towel, or atop well-drained ice.
- Never let them sit in freshwater – that will be sure to kill them.

## Shelf Life Experiment - Data from Four Experiments

*Kept in refrigeration (5.50C, 92% humidity), 52 mm mean shell length, N=30*

Hard Clams on tray



After 10 days

5% Mortality

Surfclams on tray



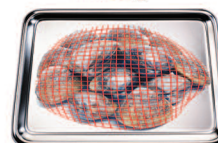
45% Mortality

Surfclams on ice



22% Mortality

Surfclams in bag



11% Mortality

Surfclams in bag with damp towel



5% Mortality



## MARKETS

- Local chefs have shown interest in this product. The flavor and appearance is distinct from hard clams. This could provide a market advantage.
- These clams are active, so a half-shell market would need to tolerate a moving clam.
- Surfclams can be substituted in any recipe that calls for littleneck clams – they are delicious when used in linguine and clam sauce or green curry. Try surfclams baked with bacon and seasoned bread crumbs or simply steam surfclams with garlic and parsley.