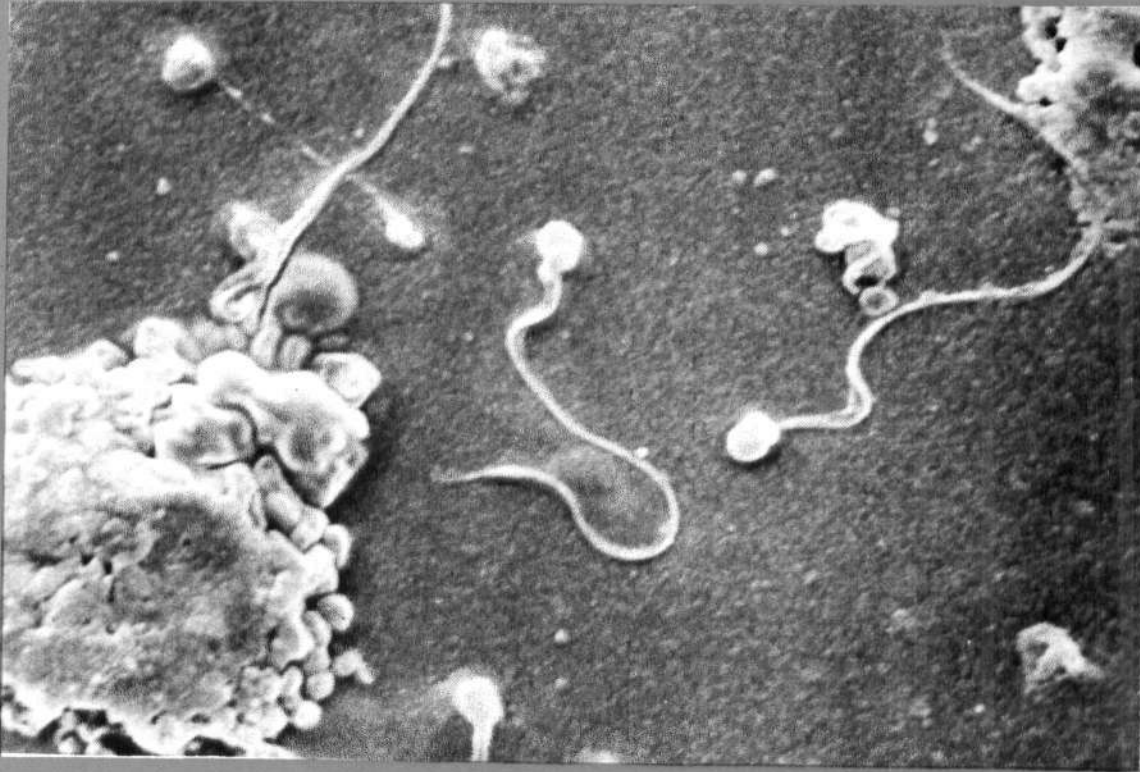




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INDIAN COUNCIL OF AGRICULTURAL RESEARCH

HOLDING AND SPAWNING OF THE EDIBLE OYSTER *CRASSOSTREA MADRASENSIS* DURING OFF-SEASON*

In a hatchery for marine organisms, brood-stock maintenance and spawning are important aspects. Production of seed from the hatchery throughout the year would help to undertake stocking in the grow out systems at appropriate time which may vary in different areas.

At Tuticorin, in the natural beds, the oyster *Crassostrea madrasensis* (Preston) spawns intensively during April-May and August-September. In the remaining months the spawning is sporadic at a low key. In order to obtain spawning in all the months it is necessary to maintain ripe oysters year round in the hatchery. This can be achieved either by accelerating the maturing process of the oysters outside the normal spawning period or by delaying the spawning of ripe oysters during the spawning season or both. Experiments were conducted at the hatchery in the CMFRI Research Centre in Tuticorin towards delaying the spawning and the results obtained are presented here. Ripe oysters with a size range of 70-120 mm were collected from Korampallam creek near Tuticorin. They were placed in 11 fibreglass tanks of 100 l capacity at the rate of 15 oysters in each tank. The oysters were placed over a PVC grid which was kept inside the FRP tank for facilitating easy removal of faecal matter while changing the seawater. The experiment was conducted in conditioning room where the water temperature was maintained at $20 \pm 1^\circ\text{C}$ and the salinity at 32-33 ppt. Filtered seawater was used after storing the oysters for a day in the conditioning room. Water was changed daily and mild aeration was given. After changing the water 35 l of mixed algae (about 0.75 - 1 million cells/ml) consisting of *Chaetoceros* sp., *Skeletonema* sp.

and *Nitzschia* sp. were provided as feed for each batch of oysters. The mixed algae were cultured in outdoor tanks.

A sample of 15 oysters were subjected to temperature of $29 \pm 1^\circ\text{C}$ in every fortnight for induced spawning. The results of the experiments conducted from August '88 to February '89 are given in Table 1.

The percentage of oysters that spawned was high (73-80%) during August and September '88. In the following five months 20-60% of the oysters spawned. This study indicates that spawning in *C. madrasensis* could be held back upto six months if maintained in lower temperature of $20 \pm 1^\circ\text{C}$.

Thus holding the ripe oysters is a promising line of work for getting spawn in the hatchery outside the spawning period, leading to seed production throughout the year.

TABLE 1. Spawning of *C. madrasensis* brood stock by thermal stimulation

Date of spawning	No. of oysters induced to spawn	No. of oysters spawned	Sex of oysters		Percentage spawned
			male	female	
31.08.88	15	11	6	5	73.3
08.09.88	15	12	10	2	79.9
24.09.88	15	11	8	3	73.3
07.10.88	15	7	3	4	46.6
22.10.88	15	9	5	4	59.9
21.11.88	15	5	3	2	33.3
24.11.88	15	3	2	1	19.9
14.12.88	15	7	3	4	46.6
28.12.88	15	7	4	3	46.6
16.01.89	15	4	2	2	26.6
15.02.89	15	3	2	1	19.9

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