

Outline of Okinawa Prefectural Sea Farming Center



853-1, Ohama, Motobu-cho, Kunigami-gun,
Okinawa 905-0212, JAPAN

Tel: +81-980-47-5411

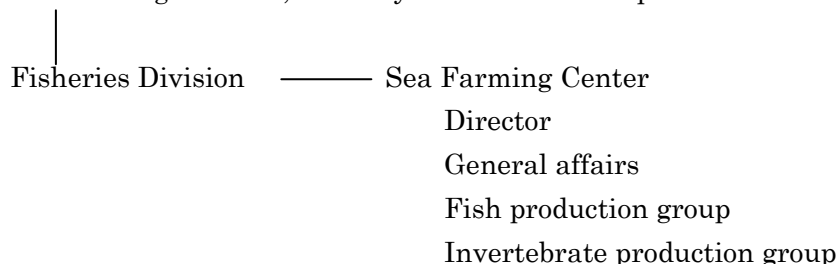
Fax: +81-980-47-5412

<http://www.pref.okinawa.jp/saibai/>

E-mail: xx048445@pref.okinawa.lg.jp

1. Organization

Okinawa Pref. Agriculture, Forestry and Fisheries Department



2. History

Apr. 1983: Establishment of Okinawa Prefectural Sea Farming Center, as the branch of Okinawa Prefectural Fisheries Station

1984~1987: Reinforcement of Facility (#1~#3), partially

Apr. 1988: Okinawa Prefectural Sea Farming Center as an independent organization, separating from Okinawa Prefectural Fisheries Station

1991~1993: Reinforcement of Facility (#4~#6), partially

1996~2000: Extension of facilities twice previous capacity

3. Roles

The roles of Okinawa Prefectural Sea Farming Center are to mass-produce seeds of marine animals for aquaculture and releasing, to improve techniques of mass seed production and aquaculture, and to search for new target species which are suitable for aquaculture and releasing, for the purpose of developing and improvement of coastal fishery.

We have distributed these seeds to local governments, fishermen's co-operatives and aquaculture owners for aquaculture and releasing, generously.

Guide to Facilities



番号	施設名	番号	施設名
①	管理棟 (事務所)	⑪	ポンプ棟
②	採苗棟	⑫	第2貝類採苗施設
③	調餌工作室	⑬	機械棟 (増設)
④	機械棟	⑭	餌料培養棟 (増設)
⑤	飼育棟	⑮	甲殻類種苗生産水槽 (増設)
⑥	50トン水槽	⑯	魚類種苗生産水槽 (増設)
⑦	10トン水槽	⑰	親魚水槽 (増設)
⑧	親魚飼育棟	⑱	貝類種苗生産水槽 (増設)
⑨	ナンノクロロプシス水槽	⑲	ウニ種苗生産水槽 (増設)
⑩	沈澱池	⑳	中間育成場



- | | |
|---|----------------------------|
| ① Administrative building | ② Seed collecting facility |
| ③ Feed storehouse & workshop | ④ Machinery building |
| ⑤ Seed production facility | ⑥ 50 kl aquarium tank |
| ⑦ 10 kl aquarium tank | ⑧ Bloodstock pond facility |
| ⑨ Nannochloropsis cultivation tank | ⑩ Settling pond |
| ⑪ Pump building | |
| ⑫ Second shellfish seed collection facility | |
| ⑬ New machinery building | |
| ⑭ Feed cultivation facility (Research facility) | |
| ⑮ Crustacean seed production facility | |
| ⑯ Fish seed production facility | |
| ⑰ Bloodstock tank | |
| ⑱ Shell & snail seed production facility | |
| ⑲ Sea urchin seed production facility | |
| ⑳ Intermediate rearing facility (Fish pen) | |

【Target Species】

Lethrinus nebulosus Spangled emperor (Hamafuefuki)



The research on seed production of spangled emperor, Lethrinus nebulosus, was started at Ishigaki Branch of Okinawa Prefectural Fisheries and Ocean Research Center from 1976. In 1979, the world's first successful seed production of this species was achieved. This species has been produced more than hundred thousands order seed for releasing and aquaculture every year, since our center had been established.

Epinephelus malabaricus Malabar grouper (Yaito-hata)



The research on seed production of malabar grouper, Epinephalus malabaricus, was started at Ishigaki Branch of Okinawa Pref. Fisheries and Ocean Research Center from 1992. In 1996, the Okinawa's first successful seed production of this grouper was achieved. Furthermore, in 1997, successful mass seed production exceeding 200,000 individuals was achieved for the first time in the world. Malabar grouper is the hope of aquaculture species of Okinawa Prefecture and is cultured in fish pens and cultivation tanks.

Epinephelus coioides Orange-spotted grouper (Chairomaru-hata)



Orange-spotted grouper, Epinephelus coioides, has been widely cultured in the Middle East, South East Asia and Taiwan. In 2005, successful seed production was achieved in our Okinawa Prefectural Sea Farming Center. Techniques of mass seed production and aquaculture are now developing at Ishigaki Branch of Okinawa Pref. Fisheries and Ocean Research Center, and our center.

Rachycentron canadum Cobia (Sugi)



Cobia, *Rachycentron canadum*, is closely-related species to Echineidae and has a habit of swimming with another large fish (ex. shark and manta ray). In Okinawa, aquaculture of cobia was introduced from Taiwan in 1997. At the starting of cobia aquaculture in Okinawa, seeds for aquaculture were imported from Taiwan. However, we started seed production of cobia in 2001, because of a request from local aquaculture owners to desire to supply cobia seed made in Okinawa.

Growth of this species is very quickly. If we start aquaculture of cobia at 10g in body weigh in April, they grow up to 3.5kg up to next March. But there have been a few problems that this fish is sensitive to fish sick (ex. pseudotuberculosis).

Pagrus major Red sea bream (Madai)



We started seed production of red sea bream, *Pagrus major*, in 1988, in order to promote fish aquaculture in Okinawa prefecture. And we have produced and supplied seeds for aquaculture since 1989. We have controlled spawning period regulating water temperature and photoperiod, in order to early spawning and early seed production.

Tripneustes gratilla Sea urchin (Shirahige-uni)



Tripneustes gratilla is widely distributed in the tropical and subtropical region of Indo-west Pacific Ocean to the south of Sagami bay. This sea urchin, which is delicious, is caught as fishery target. Recently, this stock has been decreased by over fishing. So we have made effort to develop a technique of seed production in order to improve the condition of

stock through artificial seed releasing. This species grows up to commercial size for only less than one year. Therefore, it is considered that this species is promise for releasing.

Tridacna crocea Boring clam (Himejako)



Six relatives of giant clam are distributed in the coastal area of Okinawa water. Boring clam, *Tridacna crocea*, is the most delicious species among the relatives. Since 1973, it has been conducted for a long time by Ishigaki branch of Okinawa Prefectural Fisheries and Ocean Research Center, to develop technique of seed production and aquaculture of this clam. The operations of seed production and supply have been transferred from Ishigaki branch to our center in 2009. Since this year, we have produced and supplied around a hundred thousands of boring clam seed for aquaculture and releasing, annually.

Turbo argyrostomus Silver-mouth turban (Chousen-sazae)



Silver-mouth turban, *Turbo argyrostomus*, is a delicious species, which is one of the major snails for fishing target in Okinawa, and there is much demand for food in Okinawa. Therefore, the stock of this snail has been decreased by over fishing. So, techniques of mass seed production and releasing have been developing by our center since 2010.

Annual schedule of seed production



Specification of facilities

Site area 23,030m²(prefectural land)

Site sea area 5,200m²

Total capacity of water 4,618.9 kl

Pump discharge rate of flow (sea water) 17,942 kl/day (maximum capacity)

	Tank (kl)				Feed cultivation tank (kl)		total
	fish	crustaceans	snail and clam	sea urchin	zooplankton	phytoplankton	
Before2000	500	258	82.5	128	350	690	2,008.5
After 2000	1,100	310.4	600	600	-	-	2,610.4
total	1,600	568.4	682.5	728	350	690	4,618.9