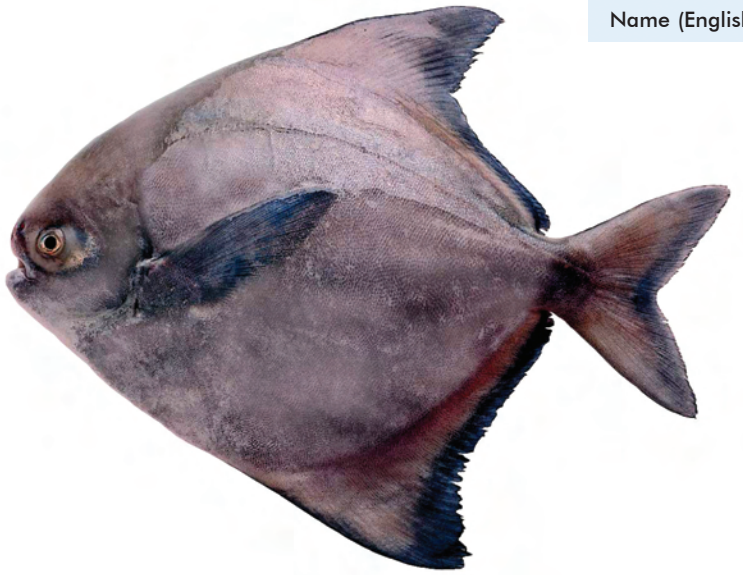
Pampus chinensis (Euphrasen, 1788)

Joe K. Kizhakudan, Shoba Joe Kizhakudan and Muktha M.

IDENTIFICATION

Order	:	**Perciformes**
Family	:	**Stromateidae**
Common/FAO Name (English)	:	**Chinese silver pomfret**

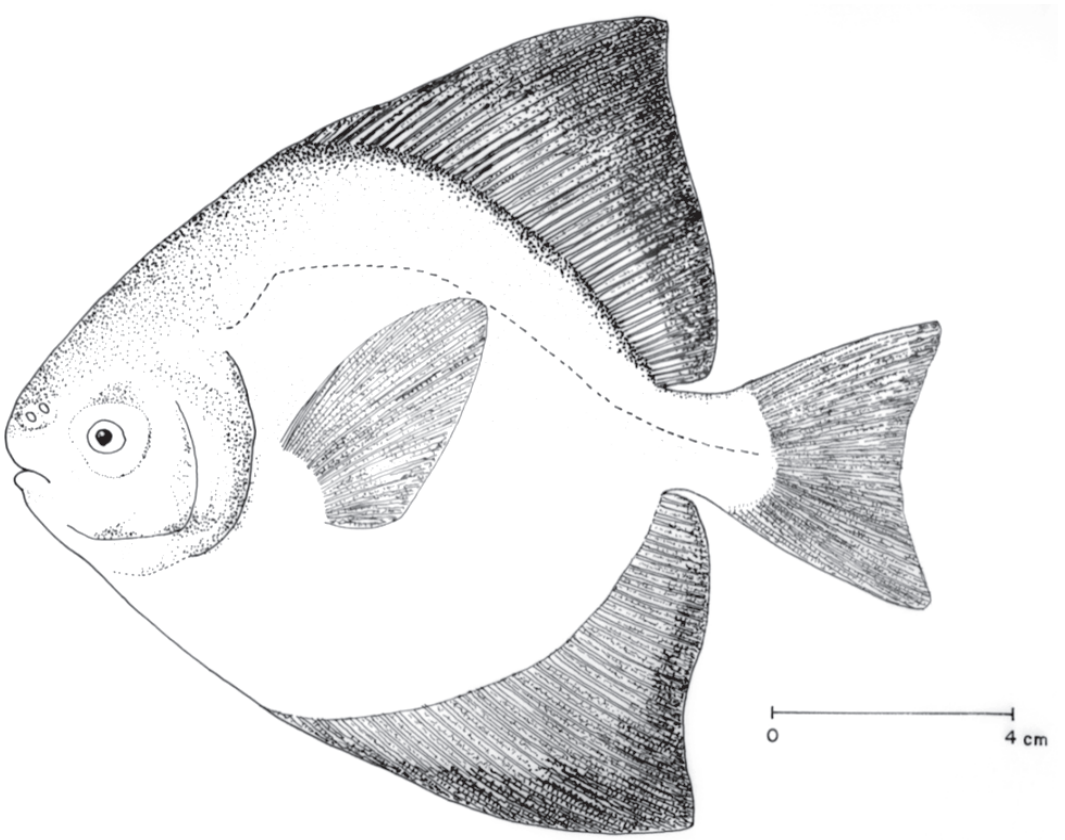


Local names: Kafri, Pathu, Vichuda (**Gujarati**); Chandava, Kapri, Kalwad, Khalwad (**Marathi**); Paplet (**Konkani**); Balimanji, Manji (**Kannada**); Avoli, Vella-avoli, Velutha-avoli (**Malayalam**); Karappuvavel, Karu-vaval, Mongang-vaval (**Tamil**); Chanduva (**Telugu**); Dhala-chandi (**Oriya**); Chandi, Pomfret (**Bengali**)

MORPHOLOGICAL DESCRIPTION

Laterally compressed oval shape body, grey or brown coloured dorsally and silvery white on lateral sides and fins. Blunt snout with small mouth and eye shorter than snout; straight forehead. Dorsal and anal spines absent; dorsal soft rays 43-50; anal rays 39-42. Caudal peduncle short and deeply compressed with no scutes. Small, cycloid scales, barely extending onto fin bases. Naked patch on head and nape with longitudinal sensory canals, patch not extending above pectoral-fin base.

Source of image : CMFRI, Kochi



PROFILE

GEOGRAPHICAL DISTRIBUTION

Pampus chinensis is distributed in Indo-West Pacific regions from Persian Gulf to eastern Indonesia and north upto Japan. In India, it is found along both the east and west coasts.

HABITAT AND BIOLOGY

These are benthopelagic marine or brackishwater amphidromous fish, which enter estuaries. It occurs seasonally, either single or in small schools over muddy bottoms. It feeds on ctenophores, salps, medusae, and other zooplankton groups but also preys on small benthic animals. Mouth is terminal in juveniles which becomes slightly superior in adults indicating possible diet changes with size.

The females attain maturity at 29 cm size whereas males mature at 26 cm size. The spawning season is restricted to the three months of September to November along the north-east coast of India. The initial gonadal development occurs with maximum photoperiod in June to culminate in

spawning in September, October and November at low point of their photoperiodic curve. Post larvae and juveniles occur along the north-east coast of India during November to January. Juveniles range from 2.5-5.0 cm in size with emarginated caudal fins, which later turn forked in juveniles of size 6.0-7.0 cm standard length. Maximum recorded length is 40 cm; common length is 20 cm.

PRODUCTION SYSTEMS

BREEDING IN CAPTIVE CONDITIONS

Twelve trials were attempted to breed *Pampus chinensis* by collecting ripe males and gravid female caught in drift gill net from Phang-nga Bay, Thailand. The eggs were fertilized and 3,24,000 newly hatched larvae were obtained. The eggs of silver pomfret were pelagic with diameter of 1120±20 µm. The eggs hatched out within 16-18 h at salinity of 30 g/l and temperature 26-30 °C.

LARVAL REARING

Silver pomfret larvae were ready for external feeds, *i.e.* they developed open mouths, 40 h post-hatching. At this time, *i.e.* from 2nd dph the larvae were fed with rotifers. The larvae survived till 25 dph. The length of the larvae at 0, 1, 10, 20 and 23 dph was 2.40, 3.29, 3.60, 5.40 and 6.00 mm respectively.

NURSERY REARING

Information not available

GROW-OUT

Information not available

FOOD AND FEEDING

Information not available

GROWTH RATE

Information not available

DISEASES AND CONTROL MEASURES

The monogenea parasite, *Bicotyle vellavoli* has been reported to infect gill of the Chinese silver pomfret.

PRODUCTION, MARKET AND TRADE

PRODUCTION

Supports minor fishery of commercial importance in regions of occurrence, including India. Of late there has been a spurt in the landings in India, increasing from 515 t in 1996 to 5,420 t in

2011. The contribution of this species to the total pomfret landings in the country increased from 1.5 % in 1996 to 9 % in 2011.

MARKET AND TRADE

This is a popular food fish in India. The fish is marketed as fresh as well as iced. The price of Chinese silver pomfret is approximately ₹ 350/ kg in India.

CHALLENGES TO MARICULTURE

The fish is very delicate to handle. Domestication programs have not been attempted or documented. Live larvae collected from coastal waters off Kovalam in Tamil Nadu have survived in captivity; however feeding has been a problem. The main researchable issues, which have to be sorted out for the species are (i) Domestication for development of broodstock and its breeding (ii) Larval rearing protocol: standardization of larval rearing by environmental and nutritional manipulation is an absolute essentiality (iii) Disease and feed management in the hatchery system and (iv) Grow out culture technique.

FUTURE PROSPECTS

Chinese silver pomfret being euryhaline in nature can thrive well in even brackishwater environment. Thus, it has good prospects for the Indian farmer as an alternate species to compensate the decrease in shrimp production caused by environmental and pond deterioration. Domestication of *Pampus argenteus* could be the model for establishing a culture system for this species also. Captive breeding and hatchery rearing hold the key to augmenting the production of the species.

SUGGESTED READING

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Parastromateus niger (Bloch, 1795)

Joe K. Kizhakudan and Shoba Joe Kizhakudan

IDENTIFICATION

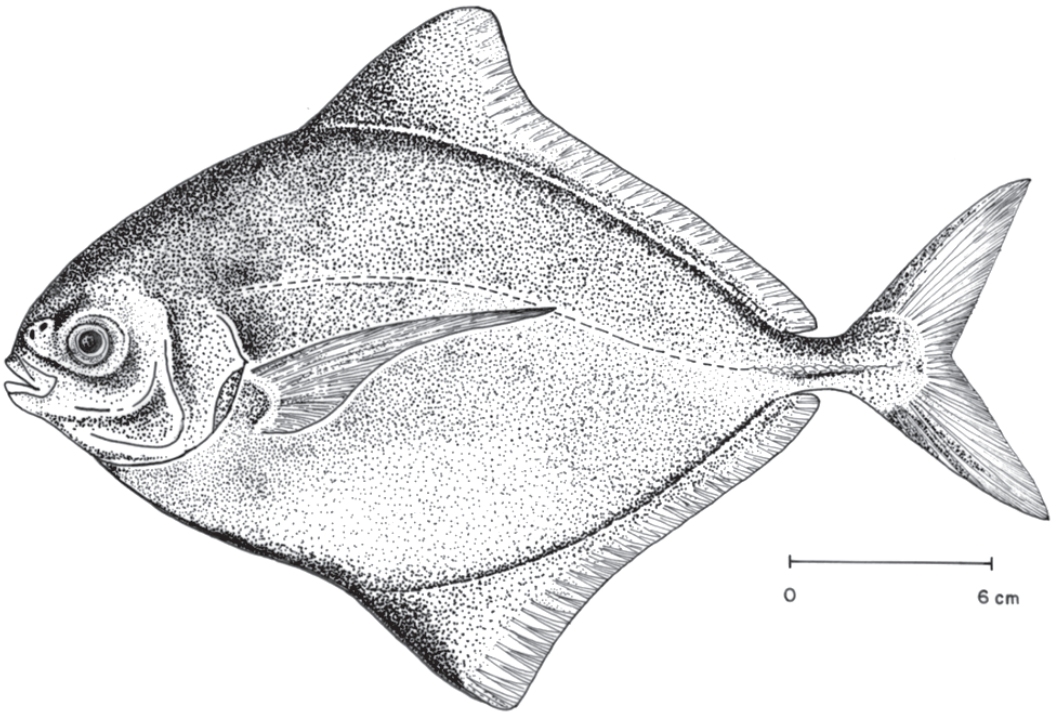
Order	:	**Perciformes**
Family	:	**Carangidae**
Common/FAO Name (English)	:	**Black pomfret**

Local names: Adadio, Halwa (**Gujarati**); Halwa (**Marathi**); Halwa (**Konkani**); Kari manji (**Kannada**); Avoli, Karutha, Maachan, Karuvoli, Vellavoli, Karauthakoli (**Malayalam**); Vaval, Karuvaval (**Tamil**); Nalla Chanduva (**Telugu**)

MORPHOLOGICAL DESCRIPTION

Body is rhomboid, scaly, strongly compressed and deep grey-brown to dark grey in colour. The head is blunt with a terminal mouth. Both dorsal and anal fins are triangular. The sickle-shaped slender pectoral fin extends beyond mid-body. A number of small scutes are present on the slender caudal peduncle. Dorsal fin is with 2-6 spines and 41-46 soft rays; anal fin is with 2 spines and 35-40 soft rays. Pelvic fins are absent in fish over 9 cm size. Body is silvery-grey coloured with four narrow white bars along the flanks; the first bar starting from just behind the opercle. Belly is white. The anterior parts of dorsal and anal fins are bluish-grey.

Source of image : CMFRI, Kochi



PROFILE

GEOGRAPHICAL DISTRIBUTION

The black pomfrets is distributed in the tropical, subtropical and temperate seas of the world; in Indian and Pacific oceans, across the Persian Gulf and Oman Sea, China and the Malay Archipelago. In India, it is widely distributed along both the east and west coasts.

HABITAT AND BIOLOGY

Parastromateus niger is the only known member of its genus. It is a mid-water pelagic species living in marine and brackishwater environments and inhabits depth ranges from 15-105 m. Mostly, the adults inhabit coastal areas with muddy substrate. It is found near the bottom during daytime and near the surface at night. It enters estuaries and normally forms large schools. It is carnivorous, feeding mainly on zooplankton, and small fishes, crustaceans and molluscans.

Size at first maturity for female is 32 cm and for male is 30 cm. Breeding periods varies with the

location. In Maharashtra, spawning is from October to December while in Gujarat, it is from February to August. Along east coast, spawning is observed from January to February. It is capable of multiple spawning throughout the reproductive season. Relative batch fecundity is 336 eggs/g ovary-free body weight and total average relative fecundity is 948 eggs/g ovary-free body weight. The observed swimming behaviour in the confined environment (cage) is different when compared to other carangids. It swims on its side with its dorsally oriented pectoral fin erected like a sail. The swimming behaviour helps it to feed on plankton and small pelagic invertebrates which migrate to shallow waters at night.

PRODUCTION SYSTEMS

BREEDING IN CAPTIVE CONDITIONS

Information not available

LARVAL REARING

Information not available

NURSERY REARING

Information not available

GROW-OUT

Scientific study on grow-out culture in confined environment is not available. Reports are available on cage farming in 2004 in Johore Strait, along the north coast of Singapore near Pulau Ubin, wherein a small school of 10-15 fishes caught near the cage site were transported to adjacent floating cages and reared to marketable sizes.

FOOD AND FEEDING

Food and feeding habit in confined environment has not been studied. In the wild, it is carnivorous, feeding on zooplankton with special preference for crustacean larvae.

GROWTH RATE

Growth rate in confined environment is not available. In wild, along the Iranian Coast of Oman Sea, it attained 21 cm and 190 g in 1 year and 56 cm and 2.16 kg in 6 years.

DISEASES AND CONTROL MEASURES

No report on diseases in culture is available, since culture in confined environment is not practiced. Reports of isopod parasitic infestation caused by *Cymothoa eremite* and parasitic copepod infestation are available. Digenetic parasite, *Lecithocladium bulbolabrum* is observed in the small intestine.

PRODUCTION, MARKET AND TRADE

PRODUCTION

Indonesia is the top producer in the world, followed by Thailand and Malaysia. Total catch globally in 2011 was 63,691 t. Landing in India has increased from about 13,315 t in 1997 to 20,493 t in 2011.

MARKET AND TRADE

It is a highly relished food fish, marketed fresh, dried or salted. It is an economically important fish in Singapore commanding a price range of around US $ 8-20/kg. In India, the price of fresh fish ranges from ₹ 250-300/kg.

CHALLENGES TO MARICULTURE

Broodstock development, breeding, larval rearing and culture in confined environment have not been initiated in India. Also information on behaviour and survival of adults and juveniles in captivity is not available. Therefore, basic studies on breeding and culture need to be initiated and technology needs to be developed in India.

FUTURE PROSPECTS

The fish has important traits like moderate growth, good taste, high price and good consumer acceptance which make it a suitable candidate for mariculture.

SUGGESTED READING

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