

Trachinotus mookalee Cuvier, 1832

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IDENTIFICATION

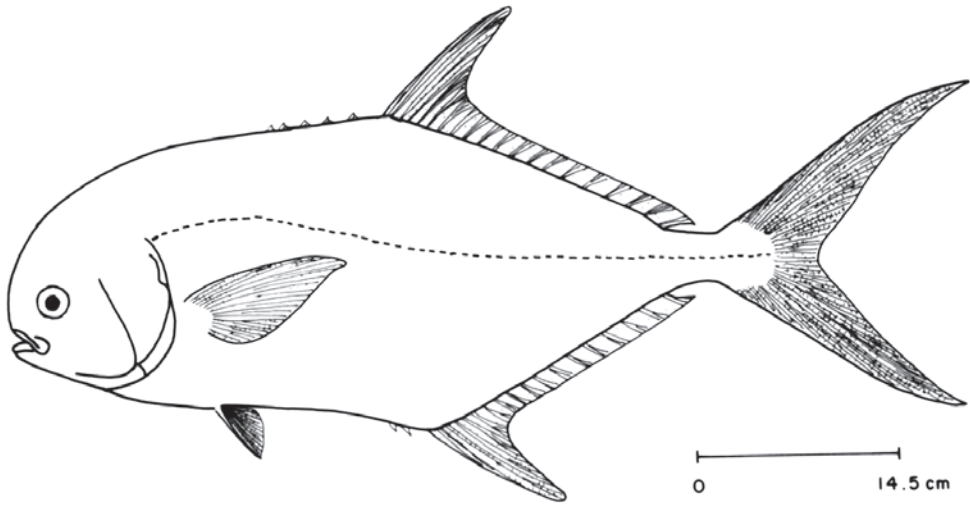
Order	: Perciformes
Family	: Carangidae
Common/FAO Name (English)	: Indian pompano



Common names : Mooku para (**Telugu**); Aavoli para, Valavodu, Vella-odu (**Malayalam**)

MORPHOLOGICAL DESCRIPTION

Body ovate in young to sub-ovate in large adults and compressed; profile of snout broadly rounded, in adults becoming nearly straight in the inter-orbital region. Both jaws with bands of small villiform teeth; tongue with a narrow band of teeth, persisting to about 50 cm fork lengths; gillrakers (including rudiments) 5-8 upper and 8-10 lower on first gill arch; 2 separate dorsal fins, the first with 6 short spines (the anterior spines often becoming completely embedded in large adults), followed by 1 spine and 18-20 soft rays; anal fin with 2 detached spines (becoming embedded in large adults), followed by 1 spine and 16-18 soft rays; height of second dorsal fin lobe 24 to 34 % of fork length in specimens 10 to 40 cm fork length; pelvic fins shorter than pectoral fins. Lateral line only slightly irregular, weakly convex above pectoral fin, becoming straight posteriorly. No scutes or caudal peduncle grooves. First pre-dorsal bone shaped like an inverted "L" with the arm projecting anteriorly, this character is easily observed by a simple dissection along midline of nape; supra-occipital bone becoming broad and sausage-shaped in specimens larger than about 30 cm fork length. Vertebrae 10+14. In live specimen, head and body generally silvery, greenish to bluish-grey dorsally, paler below; large adults sometimes with body mostly bronze or greenish-golden. Second dorsal and caudal fins dusky yellow, leading edges and fin tips darkest; anal fin bright to dirty yellow, lobe without a brownish anterior margin. Pelvic fins pale yellow to white; pectoral fins dark. Juveniles are silvery with pale yellow fins, except distal half of dorsal fin lobe which is black.



PROFILE

GEOGRAPHICAL DISTRIBUTION

Indian pompano is distributed in western Indian Ocean from the Gulf of Oman eastward to Sri Lanka. Its range also extends to Singapore, Gulf of Thailand and Hong Kong. In India it has been reported both from the east and west coasts.

HABITAT AND BIOLOGY

Indian pompano is most common in shallow coastal waters in a number of environments, including coral and rocky reefs and shore faces and tidal flats. The species has a wide salinity tolerance, as evident from the ranges from which juvenile and sub-adult fish are caught in Indian waters. The young fish eventually move to inshore reefs as they mature, before again moving to deeper outer reefs.

The species predominantly takes molluscs (gastropods and bivalves) as prey; however, it supplements its diet with a varied array of other invertebrates and fish. The former includes crustaceans such as shrimps, decapods and copepods. The larger fish on reefs tend to move between reefs regularly, which is thought to be due to prey availability. Studies of different size classes of fish have found their diets change with age in some locations, with the changes relating to an increased volume of fish taken. Diet studies at Visakhapatnam, India have shown that the diet of Indian pompano is dominated by gastropods, bivalves and crabs.

Spawning is known to occur throughout the year depending upon the temperature. Off north Andhra Pradesh, spawning season is thought to be during Feb-April. Fish aggregate in large schools prior to spawning, with pairs breaking off the main aggregation to commence spawning. Size at first maturity estimated at Visakhapatnam was 690 mm TL (approximately 3.9 kg body weight). The smallest mature female fish observed at Visakhapatnam measured 600 mm fork length (FL). The largest specimen recorded was 77 cm FL; 90 cm total length and weighed 8.1 kg. A specimen weighing 9.45 kg has been obtained at Visakhapatnam, India.

PRODUCTION SYSTEMS

BREEDING IN CAPTIVE CONDITIONS

Broodstock development, breeding and larval rearing of Indian pompano were carried out at Visakhapatnam R. C. of ICAR-CMFRI, India. The broodstock were developed in 6 m dia cage installed in sea. The cage was stocked with adult and sub adult of Indian pompano (2-4 kg) collected from wild @ 2 kg/m³ for broodstock development. The fishes were fed twice a day with squids and sardines @ 5 % of body weight supplemented with vitamin and mineral mixture. After one year of rearing in sea cages, the brooders attained a size range of 4 to 5.5 kg. The females weighing 4.0-4.5 kg and males weighing 4.5-5.0 kg were selected and injected with single dose of hCG @ 350 IU/kg and yielded fertilized eggs. Spawning was recorded after 36 h of injection. The size of the fertilized eggs was 950-1000 µm. The eggs hatched out after 22-24 h of incubation at a temperature range of 28-30 °C. The hatching rate was estimated to be 80 %. The broodstock development was also carried out in re-circulatory system at VRC of ICAR-CMFRI, Visakhapatnam. The sub-adults of 650 g were reared in re-circulatory system for developing broodstock. The fishes were fed on squids and clam meat for gonadal development. The female with > 450 µm ova size and oozing male were injected with single dose of hCG @ 350 IU/kg body weight for yielding fertilized eggs. Subsequent spawnings of Indian pompano were achieved at an interval of 35-40 days in re-circulatory aquaculture system.

LARVAL REARING

The newly hatched larvae measured 2.1-2.2 mm in total length. The mouth opening was formed after 42-46 h post hatch. Green water was used for larval rearing. Rotifers were added from 2nd dph onwards @ 10-20 nos./ml. *Artemia* nauplii were used in larval rearing tank from 9th dph. Weaning of larvae with inert diet was started from 15th day. Metamorphosis of the larvae started from 17th day and was completed by 22nd day. The size of the metamorphosed fry ranged from 16 to 17 mm.

NURSERY REARING

The fingerlings were stocked in 2 t capacity FRP tank and were fed with artificial pellet containing 45 % protein and low value fish @ 10 % body weight twice daily. They attained 36 g weight after 2 months of rearing.

GROW-OUT

Information not available

FOOD AND FEEDING

Indian pompano is carnivorous in nature. It feeds upon clam, mussel, fish, shrimp. In culture, it was fed with artificial pellets and low value fish.

GROWTH RATE

Indian pompano grew from 42.80 ± 2.32 g to 126 ± 3.17 g after two months of culture in FRP tank and after 9 months of rearing, fish attained an average size of 969.9 ± 67.5 g.

DISEASES AND CONTROL MEASURES

Parasitic copepod *Caligus* spp. infestation has been observed in broodstock stocked in tanks as well as cages. It can be controlled by giving formalin treatment in freshwater for 15 min regularly for 4 weeks.

PRODUCTION, MARKET AND TRADE

PRODUCTION

Information not available

MARKET AND TRADE

Only a small quantity is caught in capture fisheries along the east coast of India, especially along Andhra Pradesh and Tamil Nadu region. The domestic price in India at harbor is around ₹ 200-250/kg.

CHALLENGES TO MARICULTURE

Visakhapatnam Regional Centre of ICAR-CMFRI, Visakhapatnam, Andhra Pradesh, India has developed the technology for broodstock development, larval rearing, nursery rearing of the species. However, the following researchable issues need to be sorted out for this species in India.

Year round spawning and seed production

High density larviculture with high survival rate

Mixed culture prospects of the species with shrimp

Standardization of culture protocol in different culture systems

Standardization of feed for culture

Disease management

FUTURE PROSPECTS

Preliminary culture has shown good growth with fish attaining 1 kg within 10 months of culture. The domestic demand as well as price is high. Hence if seed production of the species is standardised and transferred to the field it will prove to be a good candidate for fish farmers to culture in coastal pond and cages. Thus the species has a good prospect for mariculture in India.

SUGGESTED READING

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