

# *Sillago sihama* (Forsskål, 1775)

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## IDENTIFICATION

Order : **Perciformes**

Family : **Sillaginidae**

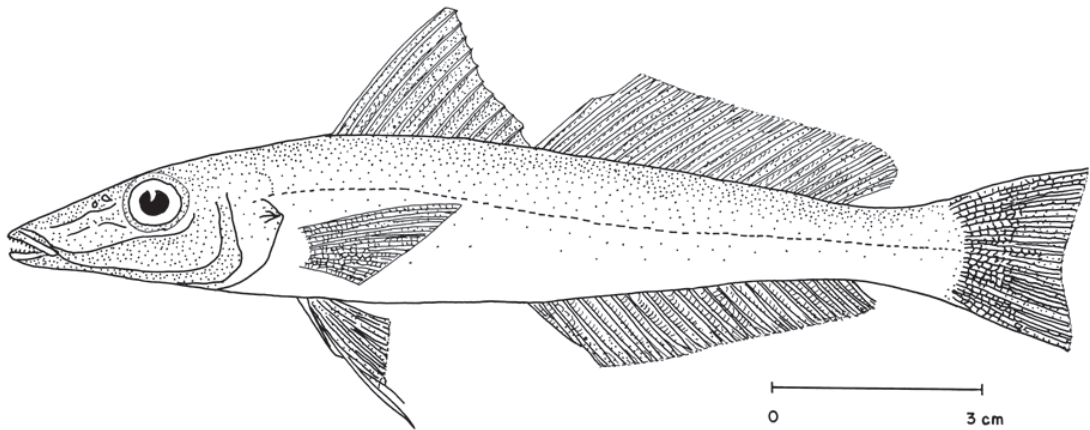
Common/FAO : **Indian sand  
Name (English) whiting**



**Local names:** Mudadi (**Marathi**); Mudoshi, Renavi (**Konkani**); Nogale, Kane (**Kannada**); Kalimeen, Kathiron, Poovan, Pooyam, Cudeerah, Noongal, Poozhan (**Malayalam**); Kelangan (**Tamil**); Soring (**Telugu**); Toul danti (**Oriya**)

## MORPHOLOGICAL DESCRIPTION

*Body* elongated with a pointed snout, upper head profile slightly convex; mouth small and terminal, villiform teeth present in jaws and on vomer; 2 or 3 (usually 2) series of scales on cheeks; a small sharp spine on opercle; gill rakers on lower limb of first arch 7-9. Two dorsal fins; first dorsal fin higher than second and with 11 weak spines and second dorsal fin with 1 spine and 20-23 soft rays; anal fin with 2 spines and 21 or 23 soft rays. Lateral line scales from 66-72. Vertebrae are 34. The swim bladder has two anterior extensions extending forward, two lateral extensions and two posterior unequal tapering extensions. Body is silvery-brown to honey coloured



with ventral side lighter; a mid-lateral, silvery, longitudinal stripe normally present; dorsal fins dusky terminally with or without rows of dark brown spots on the second dorsal fin membrane; caudal fin dusky terminally; no dark blotch at the base of the pectoral fin; other fins hyaline; the anal fin frequently with a whitish margin.

## PROFILE

### GEOGRAPHICAL DISTRIBUTION

It is one of the most widely distributed fish in the family Sillaginidae, but mostly confined to Indian and western Pacific Oceans. It extends from north of South Africa along the west coast of Africa and into the Red Sea and Persian Gulf. It is common along the Indian and Asian coast, extending from Taiwan, Japan, Indonesian Archipelago, Philippines to as far south as northern Australia. In India, it occurs along both east and west coasts. It is reported from Kakinada, Chennai, Mandapam, Cochin, Karwar, Goa, Hooghly River, Chilika Lake, Pulicat Lake and Netravathy and Gangolli estuaries.

### HABITAT AND BIOLOGY

This species inhabits shallow sandy bottoms of shores and bays, creeks, estuaries and coastal waters. It is commonly found in marine and estuarine environments and may even ascend rivers. It is very rarely captured by bottom trawling at depths of 0 to 20 m, as it buries itself in the sand when danger approaches. It is omnivorous, feeding on polychaete worms (*Marphysa* sp., *Perinereis* sp. and *Nereis* sp.), small

prawns (*Penaeus* spp.) other crustaceans (*Ocypoda* sp., *Alpheus* sp. and *Gonodactylus* sp.) and amphipods. Smaller ones often feed on filamentous algae and copepods. The spawning season is from June to February with a peak during June-November in India. Length at first maturity of female and male are 179 and 159 mm. Fecundity varies from 6,956 to 48,373, showing positive correlation with length, body weight and ovary weight. Growth is rapid, attaining a length of 13 to 14 cm in about 1 year, 16 to 20 cm in 2 years, 20 to 24 cm in 3 years and 24 to 28 cm in 4 years.

## PRODUCTION SYSTEMS

### BREEDING IN CAPTIVE CONDITIONS

Breeding, seed production and larval rearing has been attempted in different countries. In 2013, spawning and larval rearing was achieved in Aquaculture and Marine Studies Centre (AMSC), Abu Al Abyad Island, UAE. However detailed information about breeding and seed production is lacking.

### LARVAL REARING

Information not available

### NURSERY REARING

Information not available

### GROW-OUT

Culture tried in most Asian countries is still in its infancy. Culture in India was initiated 3-4 decades ago by CMFRI. Culture trials conducted in coastal ponds and pens indicate that it can be successfully cultured along with milk fish, grey mullets, pearl spot and prawns. Polyculture with shrimps and other brackish water species is a feasible option for enhancing the production in future.

### FOOD AND FEEDING

The young one feed on filamentous algae and copepod. The adult feeds on polychaete worms (*Marphysa* sp., *Perinereis* sp. and *Nereis* sp.), small prawns (*Penaeus* sp.), other crustaceans (*Ocypoda* sp., *Alpheus* sp. and *Gonodactylus* sp.) and amphipods. In culture trials, fishes are fed with low value fish.

### GROWTH RATE

Culture in different environments like salt water ponds, cages and net pens at Mandapam, India shows an average monthly growth of 11.4 mm (1.9 g), 10 mm (1.6 g) and 16.8 mm (8.1 g) respectively.

## DISEASES AND CONTROL MEASURES

Observed disease and their controlling measures are given below.

Disease	Agent	Body parts infected	Measure
Torticaecum infestation	<i>Torticaecum nipponicum</i>	Musculature and intestine	Good prophylaxis and good husbandry measures
Rhipidocotyle infestation	<i>Rhipidocotyle eggletoni</i>	Musculature	Good prophylaxis and good husbandry measures
Procamallanus infestation	<i>Procamallanus philippinensis</i>	Stomach and intestine	Good prophylaxis and good husbandry measures
Parasitic infestation	<i>Parabrachiella jarai</i>	-	Good prophylaxis and good husbandry measures

## PRODUCTION, MARKET AND TRADE

### PRODUCTION

The total world production increased from 24 t in 2000 to 1,069 t in 2011. In India it constitutes a minor fishery with considerable economic importance.

### MARKET AND TRADE

In China and Vietnam, it has a very good market. Dried fishes ranging in size from 5-11 cm are marketed from Vietnam, with a supply of 0.2 t/day. It commands a high price (₹ 300-400/kg) in different states of India, especially in coastal Karnataka. The demand is high throughout the year with a peak during the south-west monsoon, when fishing is suspended in the coastal waters because of turbulent weather.

## CHALLENGES TO MARICULTURE

Fishery is on the decline due to improper fishing activities coupled with pollution and mangrove deforestation in coastal areas. A concentrated effort is required to conserve the species. Though captive seed production has been achieved elsewhere, it has not succeeded in India. Hence a concerted effort needs to be put forth for developing and standardizing protocols for broodstock development, breeding in captivity and larval rearing in India.

## FUTURE PROSPECTS

It is an important brackishwater fish with potential for domestication and farming. In India, vast underutilized brackishwater areas are available, additionally protected bays, lagoons, estuaries

could be effectively used for culture. Polyculture with shrimps and other brackish water species is a feasible option for enhancing the production and income in future. As market demand is high in Karnataka, hence fish cultured in other regions could be marketed there.

## SUGGESTED READING

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