

# Diet composition of *Johnnieops sina* (Cuvier, 1830) from Cochin coast

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*Johnnieops sina* is one of the commonest species constituting the jew fish fishery of the Kerala coast. The food and feeding of fishes becomes difficult to observe in their natural environment and therefore accurate determination of prey choice by fish species is indeed difficult. Rearing of fish in artificial environment may not reflect the exact feeding habits of particular fish. However, analysis of gut content is proven to be the method for determining feeding habits of any fish species. Samples were collected from three major landing centres such as

Munambam, Kalamukku and Cochin Fisheries Harbour. A total of 1141 individuals of *J. sina* in different size groups ranging from 99-209 mm were sampled for the present study. In order to understand the seasonal variation in feeding habits, samples were collected in different seasons during the study period. However, samples were not collected during the month of July because of the annual ban on fishing along Kerala coast. All the individuals were segregated sex-wise after examining the gonad maturity stages. The stomachs were preserved in 5%

formalin for analysis. Gut with contents were weighed, recorded the degree of fullness of stomachs and then cut opened for analysing the gut contents.

### Diet composition

Qualitative analysis of stomach contents of *J. sina* exhibited its preference for larger organisms in shallow waters. Some of the most dominant prey organisms were teleosts, penaeid prawns, squilla and *Acetes* sp. A detailed list of the food components is given in Table 1. Crustaceans ranked first and were the major food items followed by fish food items. Crustacean diet of *J. sina* comprised of various species of penaeid and non-penaeid prawns and stomatopods. Among fish food items, major group was teleosts with *Saurida* sp. forming the major portion.

Table 1. Food components of *J. sina*

Group	Species
Penaeid prawn	<i>Parapenaeopsis styliifera</i> <i>Metapenaeus affinis</i> <i>Metapenaeus dobsoni</i> <i>Penaeus merguensis</i>
Teleosts	<i>Coilia dussumieri</i> , <i>Trichiurus lepturus</i> , <i>Cynoglossus bilineatus</i> , <i>Nemipterus</i> sp., <i>Saurida</i> sp. Sciaenids
Non-penaeid prawns	<i>Acetes indicus</i>
Stomatopod	Squilla: <i>Oratosquilla nepa</i>
Molluscs	<i>Loligo</i> sp.
Other crustaceans	Crabs

Length group between 100-109 mm and 140-149 mm preferred *Acetes* sp. Occurrence of *Acetes* sp. was high (90.40%) in smallest juvenile length group of 100-109 mm while low in adult length group

(180-189 mm). Prey preference varied as the size of the fish increased. While *Acetes* sp. formed major food item in diet of juvenile length group, in addition to crustaceans, fishes were also seen notably in the adult length group. Highest percentage of penaeid prawns was observed in 190-199 mm length group (51.78%). Fishes varied from lowest of 1.16% in 120-129 mm length group to highest of 59.61% in 160-169 mm length group. Molluscs were not found in the diet of juvenile length group, but recorded in adults ranging between 160 and 189 mm with maximum of 2.97 % in 170-179 mm length group and minimum of 0.15% in 160-169 mm length group. Similarly other crustaceans like *squilla* sp. and crab were observed in the diet of adult length group (160-219 mm). Crab was highest (0.99%) in 210-219 mm group. *Squilla* sp. were also recorded high (4.06%) in length group of 180-189 mm whereas, lowest (1.24%) in 170-179 mm length group. Digested matter ranged from 0.83% in 110-119 mm group to maximum of 22.34% in 120-129 mm group.

Stomach analysis indicates that food composition of *J. sina* consisted of two main groups such as crustaceans and teleost fishes. They are found to feed largely on crustaceans and month-wise preponderance indices exhibited crustaceans to be the most dominant and preferable food for *J. sina* during all the months. Penaeid prawns, *Acetes* sp., crab and *squilla* sp. are the main crustacean items in the diet of *J. sina* in Cochin waters. Among crustaceans, penaeid prawns formed substantial portion of crustaceans in the stomach contents, which was followed by *Acetes* sp., crab and *squilla* sp.