

Proteins

Residual proteins in α chitin from shrimp and crab could be the possible reason for triggering shellfish allergies. The molluscan allergies are rare when compared, possibly due to the nature of residual protein from these organisms.

CIFT has initiated the studies in utilizing the Carotenoid-proteins extracted from squid pen in various fields like attractants, flavour compounds etc.

These resources from squid waste can be safely utilized especially for human medical applications.



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*An untapped
marine resource...*

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SQUID PEN

India is one of the largest global exporter of frozen squid items contributing more than 61 thousand MT valued earning nearly 2000 crores rupees (273 billion US \$) of foreign exchange. Industrial processing of the squid generate enormous quantity pen (more than 100 MT) as waste, which are actually an untapped resource of bioactive compounds .

Squid pen is an internalized shell (average weight of 0.2 g) with a unique composition of non-mineralized skeletal elements comprised of chitin (β -chitin) 25-49% and protein 43-75%.

CIFT has taken an effective management to further reveal its potency and utilize this resource in more profitable way through

Recovery and characterization of

- (1) **β chitin and chitosan** of high biocompatibility
- (2) **Carotenoidproteins** of high quality with the potential for use in medical supplies, cosmetics and food

β CHITIN

Chitin is a long chain polysaccharides consisting of β - (1-4 linked N-acetyl anhydroglucosamine units. The classification of α and β chitin is based on its crystalline structure. The occurrence of β chitin is rare and squid pen being a potential source needs to be exploited.

ICAR-CIFT has been extensively studied on the extraction of chitin and chitosan. The cold extraction method for chitin production has found to be more efficient in making high grade/ pharma grade chitin.

The low mineral composition unlike in other shrimps and crabs exoskeleton, can helped in removing the demineralization step and making the process more economic.

