



USO6DZOO26 (FRESH WATER FISH)

Family	Species	Info	Occurrence	Common names	Abundance	Max length	Maturity	Remark	Photo
Nemacheilidae	<i>Aborichthys cataracta</i>	Fr	native			9.26 cm SL male/unsexed		Found only in a pool at the base of an unnamed waterfall near Hong village in Upper Subanshri district, Arunachal Pradesh (Ref. 95164).	No picture yet.
Nemacheilidae	<i>Aborichthys elongatus</i>	Fr	endemic			7.40 cm SL male/unsexed		Occurs in Darjeeling, West Bengal (Ref. 41236). Also Ref. 4832, 45255.	
Nemacheilidae	<i>Aborichthys garoensis</i>	Fr	endemic			8.95 cm SL male/unsexed		Known from Garo Hills of Meghalaya. Also Ref. 41236, 45255.	No picture yet.
Nemacheilidae	<i>Aborichthys kempfi</i>	Fr	native			8.10 cm SL male/unsexed		Known from Abor and Garo Hills (Meghalaya) and Arunachal Pradesh. Also Ref. 39226, 41236, 45255.	
Nemacheilidae	<i>Aborichthys rosammai</i>	Fr	native					Type locality, Pabomukh, Subansiri River, Dhemaji District, Assam (Ref. 84883).	No picture yet.
Nemacheilidae	<i>Aborichthys tikaderi</i>	Fr	endemic			10.90 cm SL male/unsexed		Known from Namdapha Wildlife Sanctuary in Arunachal Pradesh. Also Ref. 41236, 45255.	No picture yet.
Nemacheilidae	<i>Aborichthys verticauda</i>	Fr	native			7.75 cm SL male/unsexed		Known from a stream that confluences with the Ranga River in the Lower Subanshri district, Arunachal Pradesh (Ref. 95164).	No picture yet.
Nemacheilidae	<i>Aborichthys waikhomi</i>	Fr	native			6.80 cm SL male/unsexed		Found in the streams of Noa-Dihing River, upper	No picture yet.




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								Brahmaputra basin in the Namdapha National Park and Tiger Reserve in Changlang district, Arunachal Pradesh (Ref. 95217).	
Nemacheilidae	<i>Acanthocobitis botia</i>	Fr, Thr	native	Gadera (Hindi), Chitai (Hindi), गदीरा (Hindi), चिटाइ (Hindi), Chikli (Marathi)		14.87 cm TL male/unsexed		Known from Northern India in Brahmaputra, Ganges and Indus basins (Ref. 41236) and Western Ghats Rivers, Maharashtra (Ref. 43634), Nainital Lake (Ref. 89721). Also Ref. 4832, 45255. Status of threat: Low risk in Western Ghats (Ref. 50614).	
Nemacheilidae	<i>Acanthocobitis mooreh</i>	Fr	endemic	Murangi (Kannada)		4.40 cm SL male/unsexed		Known from Peninsular India: Poona in Maharashtra, Araku Valley in Andhra Pradesh and Nilgiris in Tamil Nadu (Ref. 41236). Also Ref. 4832, 43638.	
Nemacheilidae	<i>Acanthocobitis pavonacea</i>	Fr	endemic		scarce (very unlikely)	8.00 cm SL male/unsexed		Known from Brahmaputra basin in Assam (Ref. 4832). Also Ref. 41236, 45255, 93346.	No picture yet.
Nemacheilidae	<i>Acanthocobitis rubidipinnis</i>	Fr	native	Murangi (Kannada)		10.00 cm NG male/unsexed			




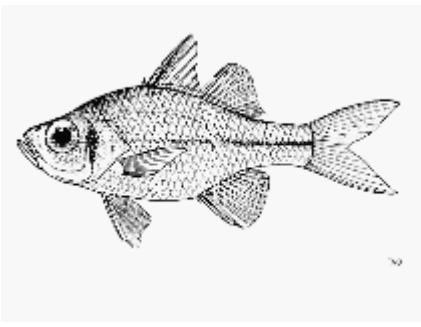
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Cobitidae	<i>Acantopsis dialuzona</i>	Fr	native	Banana fish (English)		25.00 cm SL male/unsexed		Known from Assam (Ref. 4832). Found in clear streams with sandy bottom (Ref. 45255).	
Cobitidae	<i>Acantopsis multistigmatus</i>	Fr	native					Known from the Lokchao River, a tributary of the Yu river in Manipur (Ref. 57614).	No picture yet.
Gobiidae	<i>Acentrogobius griseus</i>	Fr, Br, M	endemic	Grey goby (English), Phursandi (Konkani)		8.00 cm SL male/unsexed		Known from Andhra Pradesh and Tamil Nadu coast (Ref. 45255). Also found in Chilka Lake (Ref. 29108). Common in the Ennur backwaters in Tamil Nadu (Ref. 4833).	No picture yet.
Ailiidae	<i>Ailia coila</i>	Fr, Br, Fi	native	Gangetic ailia (English), Kajuli (Assamese), पतंगा (Nepali), पतासी (Nepali), పుట్టులి (Telugu), బుంస్ పుట్ట (Telugu), వెల్ల కలాద (Telugu)		30.00 cm TL male/unsexed		Known from Krishna, Yamuna, Ganga, Brahmaputra, Mahanadi and rivers of North India, Darjeeling, Assam, Orissa, Madhya Pradesh (Ref. 45255) and Maharashtra (Ref. 43634). Found in Chilka Lake (Ref. 29108). Present in Buxa, Adma and Jayanti rivers (Ref. 89719). Also Ref. 41236.	
Ailiidae	<i>Aillichthys punctata</i>	Fr	native	Jamuna ailia (English)		10.08 cm TL male/unsexed		Known from Ganga and Yamuna drainage systems (Ref. 45255).	
Akysidae	<i>Akysis manipurensis</i>	Fr	native					Known from Manipur (Ref. 57846). Type locality, Lairaok Maru stream near Moreh, 110 km from Imphal City, Yu	No picture yet.

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Family	Species	Info	Occurrence	Common names	Abundance	Max length	Maturity	Remark	Photo
								R.System, Manipur (Ref. 46206).	
Ambassidae	<i>Ambassis ambassis</i>	Fr, Br, M	native	Commerson's glassy perchlet (English), അറിഞ്ഞില് (Malayalam), Kachki (Marathi), काचकी (Marathi), Selanthaan (Tamil), அரிஞ்சில் (Tamil), செளந்தான் (Tamil), ைலன்தான் (Tamil)		15.00 cm TL male/unsexed		Occurs in Chilka Lake (Ref. 29108) and Western Ghat (Ref. 43640). Inhabits coastal waters (Ref. 45255). Materials examined, MNHN 9164 (4:51-94 mm SL, syntypes of <i>Ambassis commersonii</i>) (Ref. 50956). Also Ref. 4833.	
Ambassidae	<i>Ambassis buton</i>	Fr, Br	native	Buton glassy perchlet (English)		5.00 cm SL male/unsexed		Known from Great Nicobar Islands.	No picture yet.
Ambassidae	<i>Ambassis dussumieri</i>	Fr, Br, M	native	Malabar glassy perchlet (English), Aringil (Malayalam), അറിഞ്ഞില് (Malayalam)		10.00 cm TL male/unsexed		Known from southern India and Andaman Islands (Ref. 4833). Also Ref. 43640, 45255.	
Ambassidae	<i>Ambassis gymnocephalus</i>	Fr, Br, M, Fi, Thr	native	Bald glassy perchlet (English), Naked-head glassy perchlet (English), Aringil (Malayalam), Nanthan (Malayalam), അറിഞ്ഞില് (Malayalam), നന്താൻ (Malayalam), നന്ദൻ (Malayalam), Chandee (Oriya), Mullu-tharu (Telugu), మల్లు ధరు (Telugu)		16.00 cm TL male/unsexed		Occurs in coastal waters (Ref. 45255); common in backwaters and lagoons, particularly in the Vembanad and Pulicat lakes (Ref. 4833). Also found in Chilka Lake (Ref. 29108). Also Ref. 33390, 46340. Status of threat: Data deficient in Western Ghats (Ref. 50614).	

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Ambassidae	<i>Ambassis interrupta</i>	Fr, Br, M	native	Interrupta glassy perchlet (English)	scarce (very unlikely)	12.00 cm TL male/unsexed		Found in Goa, Madras and Andaman Islands (Ref. 4833). Also Ref. 45255.	
Ambassidae	<i>Ambassis miops</i>	Fr, Br, M	native	Myops glassy perchlet (English)		10.30 cm TL male/unsexed		Found in coastal waters (Ref. 45255). Common in estuaries and freshwater ditches of Madras and Kerala (Ref. 4833). Also Ref. 7050.	
Ambassidae	<i>Ambassis nalua</i>	Fr, Br, M, Thr	native	Nalua-chanda (English), Aringil (Malayalam), അറിഞ്ഞിലി (Malayalam)		12.50 cm TL male/unsexed		Occurs in coastal waters (Ref. 45255). Also Ref. 7050, 43640. Status of threat: Data deficient in Western Ghats (Ref. 50614).	
Ambassidae	<i>Ambassis urotaenia</i>	Fr, Br, M	native	Banded-tail glassy perchlet (English)	fairly common (chances are about 50%)	14.00 cm TL male/unsexed		Restricted to the Andaman and Nicobar Islands.	
Amblycipitidae	<i>Amblyceps accari</i>	Fr	endemic	Nikhil's torrent catfish (English)		4.70 cm SL male/unsexed		Currently only known from its type locality, the Tunga River at Kudremukh, a tributary	No picture yet.





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Family	Species	Info	Occurrence	Common names	Abundance	Max length	Maturity	Remark	Photo
								of the Krishna River System in Karnataka State (Ref. 112632).	
Amblycipitidae	<i>Amblyceps apangi</i>	Fr	native			15.90 cm TL male/unsexed ;14.70 cm TL female		Known from Dikrong River, a tributary of the Brahmaputra River (Ref. 56932). Also Ref. 31808.	
Amblycipitidae	<i>Amblyceps arunchalensis</i>	Fr	native			13.20 cm TL male/unsexed		Found in rivers draining Arunachal Pradesh (Ref. 58032). Recorded from Brahmaputra river system and Dikrong river in Arunachal Pradesh (Ref. 45255).	
Amblycipitidae	<i>Amblyceps cerinum</i>	Fr	native			9.73 cm SL male/unsexed		Type locality, West Bengal, Raidak I River at Shipra, just outside Buxa Tiger Reserve approx. 8 km toward Barobisha on Siliguri-Guwahati road, UMMZ 248850 (holotype of <i>Amblyceps cerinum</i> , 7.28 cm SL). Known only from the Brahmaputra River drainage, northern West Bengal (Ref. 85525).	
Amblycipitidae	<i>Amblyceps laticeps</i>	Fr	native			4.21 cm SL male/unsexed		Known from Assam (Ref. 45255). Type locality, Assam, Khasi Hills (Ref. 37785). Vulnerable (Ref. 41236).	No picture yet.
Amblycipitidae	<i>Amblyceps mangois</i>	Fr	native	Indian torrent catfish (English), Tayek (Assamese), Chikka (Kannada), Tayek (Khasi)		12.50 cm SL male/unsexed		Occurs along the foothills of the Himalaya from Kangra Valley in Himachal Pradesh, Punjab to Assam and Krishna system (Ref. 45255). Found in Gumti river near Udaipur (Ref.	




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Family	Species	Info	Occurrence	Common names	Abundance	Max length	Maturity	Remark	Photo
								97593). Also Ref. 4833, 36654.	
Amblycipitidae	<i>Amblyceps tenuispinis</i>	Fr	native			6.61 cm SL male/unsexed		Found in Himachal Pradesh, Uttar Pradesh and Himalayas (Ref. 41275). Type locality, Ghazipur (Ref. 37785).	No picture yet.
Amblycipitidae	<i>Amblyceps torrentis</i>	Fr	native			9.55 cm SL male/unsexed		Type locality, Jessami village, Manipur-Nagaland state border, Chindwin drainage, Laniye River, Ukhrul District, Manipur, MUMF 6170 (holotype of <i>Amblyceps torrentis</i> , 8.5 cm SL). Known from Challow, Wanze, Momo and Laniye rivers, all in Chindwin drainage, Manipur (Ref. 78721).	No picture yet.
Amblycipitidae	<i>Amblyceps tuberculatum</i>	Fr	native			9.72 cm SL male/unsexed		Type locality, Moreh town at Indo-Myanmar border, Chindwin drainage, Lokchao River, Chandel District, Manipur, MUMF 6184 (holotype of <i>Amblyceps tuberculatum</i> , 9.72 cm SL). Known from Lokchao, Challou, Wanze, Maklang, Namyia, and Chatrickong rivers, all Chindwin basins at Manipur (Ref. 78721).	No picture yet.
Amblycipitidae	<i>Amblyceps waikhomi</i>	Fr	native			4.47 cm SL male/unsexed		Currently known only from Nongkon stream draining to Noa Dehing River (Brahmaputra basin) in Namsai District, Arunachal Pradesh (Ref. 118109).	No picture yet.


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Cyprinidae	<i>Amblypharyngodon atkinsonii</i>	Fr	native	Burmese carplet (English)		15.00 cm TL male/unsexed		Known from northern India (Ref. 4832). Also Ref. 45255.	
Cyprinidae	<i>Amblypharyngodon melettinus</i>	Fr, Thr	native	Attentive carplet (English), Veli Lake carplet (English), Enapu-pakke (Kannada), Vayambu (Malayalam), Vayambu (Malayalam), വയമ്പ് (Malayalam), Oolares (Tamil), Pachaitalai kendai (Tamil), Pachathalai kendai (Tamil), ஊலர்ஸ் (Tamil), பச்சை தலைக் கென்டை (Tamil), பச்சைதலைக் கென்டை (Tamil)		8.00 cm TL male/unsexed		Known from Bombay in Western Ghats to Manavalakurichi, Kanyakumari District, Tamil Nadu (Ref. 41236). Found in Veli lake in Trivandrum district, Kerala. Probably endemic to Western Ghats (Ref. 43640). Also Ref. 6028, 40976, 43641, 45255. Status of Threat: IUCN Status is critically endangered (Ref. 43640). Status of threat: Low risk in Western Ghats (Ref. 50614).	
Cyprinidae	<i>Amblypharyngodon microlepis</i>	Fr, Or, Thr	native	Indian carplet (English), Enapu-pakke (Kannada), Oolari (Malayalam), ഊലൂരി (Malayalam), Oori (Tamil), ஊரி (Tamil)		10.00 cm TL male/unsexed		Known from Uttar Pradesh, Bihar, West Bengal, Orissa, Andhra Pradesh, Tamil Nadu and Kerala. Also Ref. 41236, 43640, 45255, 87807. Status of threat: Data deficient in Western Ghats (Ref. 50614).	
Cyprinidae	<i>Amblypharyngodon mola</i>	Fr, Thr	native	Mourala (Bengali), Mola carplet (English), Mowka (Bengali), Pale carplet (English), Enapu (Kannada), Enapu-pakke (Kannada)		20.00 cm TL male/unsexed	5 TL	Occurs throughout India (Ref. 4832), except Kerala, Jharia river Saran in Bihar and Gadigarh in Jammu (Ref. 45255). Present in Buxa and Adma rivers (Ref. 89719). Recorded	




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								as having been or being farmed in rice fields (Ref. 119549). Also Ref. 43634, 43638, 97593. Status of threat: Low risk in Western Ghats (Ref. 50614).	
Gobiidae	<i>Amoya madraspatensis</i>	Fr, Br, M	native			7.00 cm SL male/unsexed		Type locality, Madras, BMNH 1868.4.15.5-8 (holotype of <i>Gobius madraspatensis</i> (Ref. 75154). Known from Madras in Tamil Nadu and Andhra Pradesh (Ref. 4833) and Chilka Lake (Ref. 29108). Fairly common in the Ennur backwaters in Tamil Nadu. Also Ref. 34530, 45255.	
Anabantidae	<i>Anabas cobojjus</i>	Fr, Br, Fi	native	Gangetic koi (English)		30.00 cm TL male/unsexed		Known from West Bengal, Orissa and Andhra Pradesh (Ref. 4833). Found in Chilka Lake (Ref. 29108) and west Godavary (Ref. 45255). Also Ref. 41236.	
Anabantidae	<i>Anabas testudineus</i>	Fr, Br, Fi, Aq, Thr	native	Climbing perch (English), Kai (Assamese), Kawai (Assamese), Koi (Assamese), Kai (Bengali), Kawai (Bengali), Koi (Bengali), Kobai (Hindi), Khakoi (Khasi), Antikallai (Malayalam), Kallemutti (Malayalam), Karippidi (Malayalam), Karooppu (Malayalam), Undecollee (Malayalam), കരീപ്പിടി (Malayalam),		25.00 cm TL male/unsexed		Known throughout India (Ref. 43640). Recorded from Western Ghats rivers, Maharashtra (Ref. 43634) and Chilka Lake (Ref. 29108). Present in Buxa, Adma and Jayanti rivers (Ref. 89719). Also Ref. 36654, 41236 45255, 87807, 97593. Status of threat: Vulnerable in Western Ghats (Ref. 50614).	

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				കരിപ്പിടി (Malayalam), കറുപ്പ് (Malayalam), കല്ലേമുട്ടി (Malayalam), Okabi (Meitei), Ukabi (Meitei), Kou (Oriya), Panaiyeri kendai (Tamil), Paunieyri (Tamil), Sennal (Tamil), പനയേരിക് കെന്തൈ (Tamil), പനയേരിക് കെന്തൈ (Tamil), Kavaiyan (Telugu)					
Anguillidae	<i>Anguilla bengalensis</i>	Fr, Br, M, Fi, Ft, Lf, Thr	native	Indian longfin eel (English), Starry moray (English), Hanchu mennu (Kannada), Hanchumeenu (Kannada), Harimeenu (Kannada), Aarel (Malayalam), Aerel (Malayalam), Gnalu (Malayalam), Maniungal (Malayalam), Mlangil (Malayalam), Vilangu (Malayalam), അരളി (Malayalam), മലഞ്ഞില് (Malayalam), മലിഞ്ഞില് (Malayalam), വിളങ്ങ (Malayalam), Aheer (Marathi), Ahir (Marathi), Naprum (Meitei), रज बाम (Nepali), Thumbi (Oriya), Porivelangu (Tamil), Porivilangu (Tamil), Seram pambu (Tamil), Serampamboo	common (usually seen)	200 cm TL male/unsexed		Known throughout India (Ref. 43638): in Maharashtra (Ref. 43634); Bhavani, Moyar, Tamil Nadu; Karimpuzha, Kunthipuzha; Arikayam puzha, Kerala (Ref. 44148); Andamans (Ref. 45255). There is a good live export market for both the elvers and the adults (Ref. 4832). Utilized as food by the tribal people, "Kanis" of Kanyakumari District (Ref. 45217). Highly prized as food fish because of its nutritional value. Fish mucous from live fish mixed with rice or wheat flour is used as medicine for arthritis. Also Ref. 43640. Status of threat: Endangered (Ref. 44150).	

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				(Tamil), Vellango (Tamil), Vilangu (Tamil), சேரம் பாம்பு (Tamil), பொரி விலாங்கு (Tamil), விலாங்கு (Tamil), Malangulu (Telugu), Malugu (Telugu)					
Anguillidae	<i>Anguilla bicolor</i>	Fr, Br, M, Thr	native	Shortfin eel (English), Hanchu (Kannada), Hanchumeenu (Kannada), Mlangil (Malayalam), മലഞ്ഞില് (Malayalam), മലിഞ്ഞില് (Malayalam), Valuveng (Maldivian), Vilangu (Tamil), விலாங்கு (Tamil)		123 cm TL male/unsexed		Known from Western Ghats (Ref. 50614). Also Ref. 3971, 4832, 29108, 33390, 43640, 45255. Status of threat: Endangered (Ref. 50614).	
Aplocheilidae	<i>Aplocheilus blockii</i>	Fr, Br, Thr	native	Green panchax (English), മാനത്തുകണ്ണി (Malayalam), Pachaimundakenni (Tamil), பச்சைக் முண்டக்கண்ணி (Tamil), பச்சைமுண்டக் கண்ணி (Tamil)	abundant (always seen in some numbers)	6.00 cm TL male/unsexed		Known from Kutch southward to south Kerala (Ref. 41236) and Tamil Nadu (Ref. 45255). Recorded from Madras (Ref. 31272) and Tamil Nadu west coast and Coromandal coast (Ref. 43641). Also Ref. 4833. Status of threat: Data deficient in Western Ghats (Ref. 50614).	
Aplocheilidae	<i>Aplocheilus dayi</i>	Fr	questionable	Day's panchax (English), Ceylon panchax (English)		9.00 cm TL male/unsexed		Occurs throughout India. Outside distributional range, occurrence needs further confirmation.	

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Aplocheilidae	<i>Aplocheilus kirchmayeri</i>	Fr	endemic			5.00 cm TL male/unsexed			 Photograph by Tony Terceira © 2004
Aplocheilidae	<i>Aplocheilus lineatus</i>	Fr, Br, Or, Thr	native	Malabar killie (English), Dindiya (Gujarati), Kudian (Kannada), Moogumalli (Kannada), Choottan (Malayalam), Manattukanni (Malayalam), Varayan poonjan (Malayalam), ചുട്ടന് (Malayalam), മാനന്ത കണ്ണി (Malayalam), വരയന് പൂഞ്ഞാൻ (Malayalam), Pikoo (Marathi), Piku (Marathi), Poochatie (Marathi), Tic (Marathi), Manankanni (Tamil), Mundakanni (Tamil), Vanampartha meen (Tamil), முண்டக் கண்ணி (Tamil)		10.00 cm TL male/unsexed		Occurs in western (Coorg, Wayanad, Kerala) and south eastern regions. Found in Western Ghats (Ref. 43640). Widely distributed in Peninsular India (Ref. 41236). Also Ref. 45204, 87807. Status of threat: Low risk in Western Ghats (Ref. 50614).	
Aplocheilidae	<i>Aplocheilus panchax</i>	Fr, Br, Thr	native	Blue panchax (English), Charbeki (Assamese), Kanpona (Assamese), Khanpona (Assamese), Charbeki (Bengali), Dhenochune (Bengali), Panchoke (Bengali), Pangchax (Bengali), Trichoke (Bengali), Estuarine ricefish (English), Panchax minnow (English), Dindiya (Gujarati), Dendula (Hindi),		9.00 cm TL male/unsexed		Known from northern India (Ref. 41236). Found in Western Ghats Rivers, Maharashtra (Ref. 43634); Kerala, Coromandel, Laccadive, Andaman Islands (Ref. 45255) and Tripura (Ref. 97593). Recorded from Chilka Lake (Ref. 29108). An excellent larvivorous fish and its use for mosquito control has been established	

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				Jhingra (Hindi), Lal (Hindi), Kudabaddu (Kannada), Kudian (Kannada), Saslu (Kannada), Manathakannan (Malayalam), Poochhutti (Malayalam), പുഞ്ഞാന (Malayalam), Inchamas (Maldivian), Pikoo (Marathi), ितकुली (Nepali), Chotodah (Not specified), Borruguddi (Oriya), Gunjar (Oriya), Kanakuri (Oriya), Jhingra (Punjabi), Lal (Punjabi), Munda kanni (Tamil), Mundakanni (Tamil), முண்டக் கண்ணி (Tamil), Chukku-chepa (Telugu), Ilisha (Telugu)				(Ref. 4833). Also Ref. 27139, 36654, 43638. Status of threat: Data deficient in Western Ghats (Ref. 50614).	

Major Fish Products of India

Some of the major fish product of India are as follows:

Fishes, besides being used as edible material, also gives some important substances in the form of fish products which are listed below:

1. Fish Oil:

Perhaps it is the most important fish product as it has an important medicinal value.

Oils can be extracted both from whole fish as body oil and from liver as liver oil. Body oil is used for both edible and industrial purposes whereas liver oil, being a rich source of vitamin A is exclusively of medicinal values, Fish oil contains cholesterol, other alcohols in the unsaponifiable matter include pigments, vitamin A and D, glycerol ethers and fatty alcohols. Vitamin E may be present in small form. Sardine, salmon, herring, mackerel, anchovy, white fish and cat fishes are important for fish oil.

Fish liver oil is very rich in Vitamin A and Vitamin D. The percentage of two main constituents of liver i.e., oil and Vitamin A varies in different fishes. For example cod, halibut and hammer-headed shark yield oil 60-75%; 4-28% and 25-75% respectively and vitamin A potencies varies from 500—20,000 iu/g; 25,000—6,00,000 iu/g and 3,00,000 iu/g respectively. Besides vitamin A and oil, Vitamin D, Vitamin E, hydrocarbons, cholesterol, pigments, fatty alcohols and glycerol ethers are found in liver.

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For extraction of liver oil, healthy and undiseased liver is cut into small pieces and boiled with sufficient quantity of water. The oil which accumulates on the surface is decanted off. This oil is further boiled with water and filtered. The filtered material is dehydrated with anhydrous sodium sulphate. Later on, the pharmaceutical establishment puts them under refining and standardisation before they are brought to market. Besides this, several other techniques are also employed for the extraction.

For extraction of body oil from oil rich fishes, the flesh is crushed to a pulp and cooked with steam in a continuous vertical and cylindrical cooker. The cooked material is regularly pressed to extract the oil. The oil which along with other body materials comes to the surface is decanted and later on centrifuged to separate the oil.

2. Fish Meal and Fish Guano:

The waste materials left after extraction of oil and the flesh of non-oily fishes are dried in sun or inflame driers at high temperature. This is used for feeding cattle, pigs, poultry birds and also used as manure in coffee, tea and tobacco plantation. Horse mackerels, mackerel and sardines which are unfit as food are good as fish meal.

3. Fish Flour:

It is similarly prepared as fish meal but here the fishes used are of high nutritive value and are fit for human consumption. Fish flour is rich in protein and easily digestible. It is to be used along with wheat or maize flour. Addition of more than 10% fish flour with other edible flour may not be acceptable to all due to its disagreeable taste, but a lesser amount does not bring any change to the taste.

4. Fish Silage:

By treating the flesh of fish with hydrochloric acid and fuming acid a semi-solid material is formed which is called fish silage. It is used as fish meal with better nutritional values as most of the vitamin constituents are retained here.

5. Fish Soluble:

The residual part of the liquid which comes out during extraction process of fish oil is known as fish soluble and is used as animal diet. It is rich in protein and vitamin B complex.

6. Shark's Fin:

In China and Philippines the sharks fin except the caudal one are used in soup.

7. Fish Roes:

Due to the presence of a large number of amino acids and Vitamin A, B, C etc., the roes of several fishes are used as food. They are also used in manufacturing of glue and synthetic fibres.

8. Fish Glue:

It is a water soluble strong, flexible, adhesive substance required for court plaster stamps, for book binding and for repairing of shoes. It is prepared by grinding the fish bone and skin and later on treating them in steam jackets for 6—12 hours along with certain amount of water and acetic acid. The liquid is separated out and changed to concentrated forms.

9. Isinglass:

It is obtained from swim or air bladder of different fishes by scraping the outer portion and sun drying the inner part. Isinglass as a gelatinous substance is used for clarification of wine, beer and vinegar. It is also used for the preparation of special grade cement and plaster.

10. Fish Skin:

Skin of large sized fishes such as shark and rays, after tanning, are used for the manufacture of shoes, handbags etc.

Present Position:

USO6DZOO26 (FRESH WATER FISH)

India has an abundant marine and inland resource, perhaps one of the richest in the world. Japan tops the list of fish producing countries of the world, seconded by Peru. India stands between seventh and ninth position. India's total annual production in 1950 was 0.817 million tones which reached the highest in 1970 at 1.845 million tones. Although it is difficult to estimate the inland fish production, the rough idea given by different states and by the reports on the marketing of fish in India shows that 1951 annual production of 218.0 thousand tones had reached its height in 1969 with 693.2 thousand tones.

It, however, declined slightly as the annual production of 1972 was 665.8 thousand tones. State wise data shows that West Bengal is at the top of the list in both annual production and the average production of ten years followed by Tamil Nadu and Andhra Pradesh. Bihar is trailing at fifth-sixth position. The Indian Council of Agricultural Research has established the Central Inland Fisheries Research Institute (CIFRI) with several pilot projects in different parts of India.

India exports the preserved fish and fish products to several countries like U.K., U.S.A, Mauritius, West Germany, Ceylon, Singapore and Burma. The annual return in the form of foreign exchange exceeds six crores in term of rupees. Certain fish products especially cod liver oil has been imported from U.K, Norway, U.S.A, Italy and West Germany.

(Courtesy by google)