

PART III
NOTES, ABSTRACTS AND NEWS

NOTE: I

PROXIMATE COMPOSITION OF 17 SPECIES OF INDIAN FISH

Miscellaneous fish from the catches of shrimp trawlers constitute a major portion of the marine fish catch in India, its quantity in annual landing being of the order of 50,000 tonnes. At present it is often not brought to the shore since it fetches only very low price. It consists of several species and is a cheap source of animal protein. Attempts are made in India in various centres (Anon. 1972-73) to utilise them effectively by formulating various speciality products acceptable to consumers.

An understanding of the proximate composition of these fish species is of paramount importance in the evaluation of their nutritional properties, particularly when the fish meat has to be processed and incorporated in various speciality products. This note reports the proximate composition of certain important species of miscellaneous fish, usually found as by catch in shrimp trawling.

The fish for analysis were collected from the catches of the shrimp trawlers of the Integrated Fisheries Project, Cochin. The whole fish, usually five to ten numbers, was blended in a waring blender and analysed.

Moisture, ash and crude protein were determined according to official methods

A. O. A. C. (1960). Calcium was estimated by titration with EDTA (Vogel, 1969), sodium and potassium were determined by flame photometry (Vogel, 1969) and phosphorous by colorimetry (Fiske and Subba Rao, 1925).

The results of the analyses are given in table I.

Moisture: The moisture content of the different fish species was found to vary from 71.85% (sole) to 78.08% (jew fish).

Ash: The highest ash content was seen in long rayed silver biddy (5.6%) and the lowest in jew fish (3.2%).

Protein: The highest protein content was seen for short jawed sea pike (20.77%) and the lowest for cat fish (16.02%).

Lipids: Cat fish recorded the maximum lipid content (5.31%) and anchovies the minimum (0.3%). Most of these fish species examined showed very low lipid content.

The distribution of the above four major constituents of the fish showed no uniform pattern. However, some varieties such as jew fish, cat fish, red coral, cod and barracuda with high moisture contents showed low protein contents. In most species where the lipid content was high

Proximate composition of 17 species of Indian miscellaneous fish (whole)
(Results of average of 5 estimates)

Sl. No.	Common name	Scientific name	Moisture g./100 g.*	Ash g./100 g.*	Protein g./100 g.*	Lipids g./100 g.*	Phosphorus g./100g.*	Calcium mg./100g.*	Sodium mg./100 g.*	Potassium mg./100g.*
1.	Kilimeen (whole)	<i>Nemipterus japonicus</i>	73.01	5.05	18.5	2.986	855.9	1663	260.8	260.8
2.	Cat fish	<i>Trachysurus</i> spp.	74.15	3.867	16.02	5.31	703	1373	281.3	273.5
3.	Jew fish	<i>Pseudosciaena</i> spp.	78.08	3.2	16.77	2.3	462	908	179.5	227.6
4.	Silver belly	<i>Leiognathus</i> spp.	73.4	5.58	17.39	4.02	1754	3384	173.4	107.4
5.	Sole fish	<i>Cynoglossus</i> spp.	71.85	3.54	19.27	4.8	552.9	1148	245.9	290.9
6.	Anchovie	<i>Anchoviella commersoni</i>	77.3	4.02	17.82	0.292	1095	1745	276.8	198.6
7.	Ribbon fish	<i>Trichiurus</i> spp.	74.7	3.427	19.33	2.06	319.8	780.3	255.1	315.2
8.	Long Finned herring	<i>Opisthopterus tardoore</i>	73.42	3.55	19.76	3.1	809	1470	211	343.9
9.	Short headed lizard fish	<i>Trachinocephalus myops</i>	74.34	4.7	18.92	2.01	890	1653	186.7	317.5
10.	Long rayed silver biddy	<i>Pertica filamentosa</i>	74.62	5.62	18.41	1.02	924.7	2482	336.5	189.2
11.	Short jawed sea pike	<i>Sphyraena langsar</i>	72.5	4.1	20.77	2.65	785	1545	619	259
12.	Silver whiting	<i>Sillago sihama</i>	73.61	4.10	17.66	4.01	1145.8	2250	468	138
13.	Red coral cod	<i>Emneacentrus sonnerati</i>	77.63	3.96	17.06	1.04	688	1590	333	107
14.	Red fish	<i>Nemipterus bleakeri</i>	75.56	5.17	19.91	1.27	841.8	1907	294.1	257.2
15.	Flat fish (Indian halibut)	<i>Psettodes erumei</i>	75.02	4.37	19.82	0.66	500	1247	224.4	207.1
16.	Barracuda	<i>Sphyraena jello</i>	77.8	4.29	16.4	1.4	719	1511	278	317.8
17.	White bait	<i>Stolephorus malabaricus</i>	72.21	5.02	18.74	3.9	1028	1844	382.4	395.5

*100 g. of whole minced wet fish.

a low value moisture content was observed.

Distribution of calcium, phosphorous, sodium and potassium:

It is seen that silver belly, which recorded the highest amount of phosphorous and calcium (1754 mg%, and 3384 mg%), showed the lowest amount of sodium and potassium (173.4mg% and 107.4 mg%). Incidentally this is the only species which recorded the maximum value for phosphorous and calcium, and minimum for sodium and potassium among the species examined. Apart from this, there was no significant correlation among the values of these metals in the species examined. But the relation between sodium and potassium was significant, a high content of potassium was usually associated with a low level of sodium and vice-versa.

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REFERENCES

- Anon. 1972-73. Annual Report of ICAR Co-ordinated Research Project on utilization of Trash fish. 1972-73, C. I. F. T., Cochin-682011.
- A. O. A. C. 1960. *Official Methods of Analysis*; Association of Official Agricultural Chemists Washington D. C.
- Bligh, E. G. and W. J. Dyer. 1959. *Can. J. Biochem. Physiol*; **37**: 911.
- Fiske, E. G. and T. Subba Rao. 1925. *J. Biol Chem*; **66**: 375.
- Vogel, A. I. 1969. *A Text Book of Quantitative Inorganic Analysis*. ELBS Edition; Lowe and Brydore Ltd., London.

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