

PART III

NOTES AND ABSTRACTS

NOTES:

METHIONINE CONTENT OF SOME OF THE IMPORTANT SPECIES OF INDIAN FISHES

Tsuchiya (1944) reported on the sulphur containing amino acids in fish and devoted a special study to methionine. Beveridge (1946) established that Lingcod, Halibut, Lemon sole and Spring salmon are excellent sources of methionine.

Very little work is reported on the methionine content of Indian fishes. This work was therefore undertaken to determine the methionine content of some of the important varieties of Indian fishes.

Freshly caught fish were beheaded, eviscerated and filleted. The muscle portion was dehydrated and defatted using acetone. After vacuum drying, the extracted and dried material was powdered. 1 gm. of the material was hydrolysed with 10 ml. of 2.5 N HCl in a sealed tube for 12 hours at 120°C. After closing 2 c.c. of 2.5 M Sodium acetate solution was added and the pH adjusted to 4.6 and filtered. The final volume of the solution was made up to 100 cc. The stock hydrolysate solution was suitably diluted and adjusted to pH 6.8 and used for microbiological assay (Barton Wright, 1954) of methionine using *Leuconostoc mesenteroides* P-60 as the test organism.

The results show that among the fresh water fishes, Rohu, Machalu, Mirror carp and Catla are very rich in methionine.

Among marine fishes, Silver bellies, Shrimp, Tuna and Oil-sardine contain methionine in appreciable quantity. The methionine content of the remaining varieties of fish is in the range of 3.0 per cent. The results on the whole show that fish is a rich source of methionine, and as such it could be used with great advantage to supplement the common diets deficient in this essential amino acids.

TABLE I: METHIONINE CONTENT OF SOME OF THE IMPORTANT VARIETIES OF INDIAN FISHES

	Methionine content/ 100 g. protein.
<i>River fishes</i>	
Cat (<i>Wallag attu</i>) ...	2.86
Rohu (<i>Labeo rohita</i>) ...	3.83
Kurva (<i>Ophiocephalus spp</i>)	3.04
Catla (<i>Catla Catla</i>) ...	3.30
Mirror carp (<i>Cyprinus Carpio specularis</i>) ...	3.70
Machalu (<i>Labeo spp.</i>) ...	3.85
Mirgal (<i>Cirrhina mrigala</i>)	2.76
Gende (<i>Barbus carnaticus</i>)	2.89
<i>Marine Fishes</i>	
White pomfret (<i>Stromateus cinereus</i>) ...	3.20
Lactarius lactarius (<i>Lactarius spp.</i>)	3.20

Methionine Content of Some of the Important Species of Indian Fishes

Seer (<i>Scomberomorus commersonii</i>) ...	2.90
Oil sardine (<i>Sardinella longiceps</i>)	3.30
Silver bellies (<i>Leiognathus spp</i>)	3.70
Pink fish (<i>Synaris spp</i>) ...	2.94
Shrimp (<i>Penaeus indicus</i>) ...	3.50
Tuna (white muscle) (<i>Thynnus spp</i>) ...	3.50
Mackerel (<i>Rastrelliger canagurta</i>)	3.10
White sardines (<i>Kowala thoracata</i>)	3.20

References

- Tsuchiya, Y. Sulphur containing amino acids and their derivatives VII. Methionine of fish proteins. *J. Agric. Chem. Soc., Japan.* 1944, **20**, 320.
- Beveridge, J. M. R. Sulphur distribution in fish flesh protein, *J. Fish Res. Bd. Can.*, 1946, **7**, 51-54.
- Barton-Wright, E. C. (1954) The microbiological assay of the vitamins of B-complex and amino acids, Pitman and Sons Ltd., London.

Central Food Technological
Research Institute,
Mysore-2A (India).

(Miss) V. Gowri
(Miss) M. S. Vasantha
K. S. Srinivasan
M. N. Moorjani