

CMFRI claims decoding genome of oil sardine

TRIVANDRUM: Scientists at the Central Marine Fisheries Institute (CMFRI) in the Kerala port city of Kochi on Thursday said they had decoded the whole genome of the Indian oil sardine.

The team involved in the invention termed it a milestone and breakthrough in Indian marine fisheries research.

The popular food fish is considered an excellent source of protein, omega-3 fatty acids that protect the heart, vitamins B12 and D, calcium, phosphorus and selenium.

In a statement, the premier research institute said it was the first time that the genome of a marine fish species from the Indian subcontinent was decoded.

CMFRI director Dr A Gopalakrishnan said the decoded genome would be a valuable resource for understanding the biology, ecology and evolution of the oil sardine.

"This critical genome data could be used to improve the management strategies for the conservation and sustainable utilisation of this fish," it quoted him as saying.

"The decoded genome is 1.077 Gb in size and contains a total of 46316 protein-coding genes."

The researchers led by Dr Sandhya Sukumaran used cutting-edge next-generation sequencing technology for the landmark "research accomplishment"

They identified the genes involved in the biosynthesis of polyunsaturated fatty acids offering insights into the genomic mechanisms behind their high nutritional quality.

The researchers say their findings could provide critical leads to scientists in nutritional research and develop new dietary supplements or fortified foods high in PUFAs.

"Oil sardines are a good source of PUFA, which plays a crucial role in maintaining human health," the principal scientist at CMFRI's marine biotechnology division said.

"Further, it supports studies on synthesising PUFAs through transgenesis or gene editing techniques in organisms of choice to improve the nutritional quality," she said.

The research has been published in the high-impact journal Scientific Data of Nature group.

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