IN THE TEST OF FISH, A DASH OF COLOUR

SMITA NAIR
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AS it came to be recognised that unscrupulous traders were using the chemical preservative formalin (formaldehyde in water) to increase the shelf life of fish, the Kerala Fisheries Department, at a regional meeting of the Central Institute of Fisheries Technology of the Indian Council of Agricultural Research (ICAR-CIFT) in September 2017, mandated a team of scientists to develop a kit to detect the chemical.

Scientists Laly S J and Priya E R from the Kochi-headquartered ICAR-CIFT, working with institute director Ravishankar C N, have now developed cheap, handy kits that can detect the presence of both formalin and ammonia in fish. As a formalin-in-fish scare sweeps through several states, these kits are expected to hit the market by the end of the month.

The research

Priya told The Indian Express that an initial difficulty lay in the fact that in any stock of fish, toxic chemicals are not distributed uniformly, nor are they absorbed uniformly by different varieties. Priya, Laly, and their team spent time choosing the chemicals that would be used in the kit, given that they had to be safe as well as capable of detecting formalin and ammonia. Tests were conducted on over 70 varieties of marine, riverwater, and brackish water fish.

In the box

Each kit will have 25 strips of paper, a bottle of powder, a bottle of reagent solution, and a dropper. The strips are thin sheets of chemically treated paper, which the user will have to rub on the fish 3-4 times. A drop of the reagent solution will then have to be applied on the paper, using the dropper. If the fish has formaldehyde, the paper, which will be a light yellow to begin with, will change colour within 30 seconds. A low level of formaldehyde will turn it pale green, and a high level, an intense blue. The colour intensity will be of value for detection only for the first two minutes. Each kit will have a colour card, which will help the user match the colour of the strip. Each box will be good for 25 tests.

Cost, availability

The laboratory costs have come to Rs 2 per test, Priya said. However, by the time the kits actually arrive in the market, the price will have to factor in costs of labour and scale. Trial kits have been used in a few raids in Kerala, state Fisheries Department officials confirmed. A private firm has been contracted for mass production. “The whole country can use them once they are ready. They (the private manufacturer) have told us that distribution should begin by July 29. We have been told they will start with 1,000 kits a day. You can then take it with you to the market,” Priya said.

Important point: the kit will not work on Bombay duck, squid, and lizardfish, all of which produce formaldehyde naturally.

LALY S S AND PRIYA E R are scientists at the ICAR-CIFT, Kochi. Dr Ravishankar C N is the Director of ICAR-CIFT