

## Following sale of fish laced with formalin, FSSAI issues guidance note

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FSSAI and the ICAR-Central Institute of Fisheries Technology (CIFT), Kochi, have taken cognisance of the rampant sale of formalin-laced fish in India and issued a guidance note on the handling of fish. It contains the best practices to detect and restrict the use of formalin as a fish adulterant and avoid its further sale, and serves as a guide to food testing laboratories, traders and consumers.

In addition to formaldehyde (which, when present in water, is known as formalin), the referral laboratory of the country's apex food regulator, which is monitoring the rampant adulteration of fish, has found the presence of residues of other chemicals such as ammonia and additives such as sodium benzoate in freshly-marketed fish, inter-state fish consignments and even in the ice used during its transportation.

Formalin is a common fish adulterant. Traders and suppliers use to extend the shelf life of both fresh and frozen fish, as well as to artificially improve its sensory attributes. Of late, a number of cases of its use to adulterate fish have been reported across India. The latest of these was from Odisha.

### **Hazardous**

However, the International Agency for Research on Cancer (IARC) of the United Nations' (UN) World Health Organization (WHO) has confirmed that formaldehyde is carcinogenic in nature. It causes nasopharyngeal cancer in humans.

And if it is present on larger quantities in food, it can lead to severe abdominal pain, vomiting, coma, renal injury, and in some cases, even death. In case of food handlers, it is a cause of sensory irritation of the eyes and lungs, dermatitis and asthma.

Thus, as per the Food Safety and Standards Regulations, 2011, it is not permitted for use in foods.

### **Operation Sagar Rani**

Meanwhile, the Government of Kerala has been working extensively to curb the adulteration of fish in the state. In June 2017, state fisheries minister J Mercykutty Amma met the Kerala government, resulting in the implementation of Operation Sagar Rani, whose objective is to

seize adulterated fish in the southern state. CIFT was present at the meeting.

Under the operation, fishing was banned in Kerala for a month in June. During this period, fish was exported by the neighbouring states from Andhra Pradesh, Tamil Nadu and Odisha. About 9,600kg of fish preserved with the toxic chemical was seized at the border check post of Arayankavu in Kollam district, while 6,000kg was seized from the check post at Walayar in northern Palakkad district. This resulted in chaos among the locals.

So far, 21,600 kg of formalin-laced fish has been seized in the state under Operation Sagar Rani. The raids were carried out by a squad of food safety officials from Kozhikode and Palakkad, led by Kerala's food safety commissioner.

### **Rapid detection kit**

Analysing the scenario, the state fisheries minister requested CIFT to develop a detection kit, which will help to detect the presence of chemical preservatives formalin and ammonia in fish.

Meanwhile, upon request, ICAR-CIFT, Kochi, has developed a rapid detection kit named CIFTtest, which includes strips to detect the presence of chemical preservatives such as formalin and ammonia in fish. It is set for commercial production.

Sharing the details, Rakesh Raghavan, technical assistant, ICAR-CIFT, said, "The initiative was taken a year ago. With extensive research done by scientists and with the help of advanced technology, the kit was developed. The technology has been licensed to Mumbai-based HiMedia Laboratories Pvt Ltd, and the formal exchange of the Memorandum of Understanding (MoU) was held at a simple function at ICAR-CIFT, Kochi, earlier this month."

"The rapid detection kit would act as a preliminary test, which will consist of two separate paper strip methods. Of these, one will be for formalin, while the other will be for ammonia. It will also contain 25 strips and a bottle of solution. There will be two colour indicators (viz white for safe and dark blue for contaminated fish), which would notify the contamination of fish. The samples would be sent to the labs for further investigation," Raghavan said.

The kit developed by ICAR-CIFT will ensure the safety and quality aspects of fish available in the market. This, in turn, will indirectly discourage the adulteration by the traders in the sector. The technology has also been validated through some sample testing at different places.

Ravishankar C N, director, ICAR-CIFT, said that the institute was at the forefront of technology development for the harvest and post-harvest fisheries sectors. The development of the detection kit was in response to the need of ordinary fish consumers to detect contaminants and it would allay their apprehensions.

Vishnu Warke, director, HiMedia Laboratories, said that the company, which has its presence in over 175 countries, had the wherewithal to produce sufficient quantities of the product that will be made available to public very soon at affordable rates.

He reiterated the commitment of the company to provide their products to the Indian and export market at affordable prices usually for Food and Drug Administrations (FDA), government authorities and units which are engaged in the export of fish.

He also stated that even a layman would be able to use it and check whether the fish is healthy to consume or not.