

# FISHQCheQ –A Demerit Score-Based Mobile Application to Assess the Quality of Fish

Joshy C.G., S.K. Panda, Zynudheen A.A. and George Ninan

ICAR-Central Institute of Fisheries Technology, Kochi

\*joshy.cg@icar.gov.in

Fish is an important food item that ensures both food and nutritional security of the fish-eating population, but at the same time fish is considered a highly perishable commodity. The biochemical and biological changes that happen during different storage conditions affect the quality of the fish (Ashie *et al.*, 1996). Apparently, these changes directly affect the sensory characteristic of the fish before it reaches the consumer. Consumers do a primary assessment of the quality of fish on a certain tangible/sensory quality parameter before purchasing fish. The most commonly used method to assess the quality of fish is the quality index method (QIM) (Dalgaard, 2000). Joshy *et al.*, (2020) discussed the short comings of the commonly used QIM method and proposed a modified computational method to assess the quality of fish. The modified fish quality index (FQI) was ranged from 0 to 1, where FQI value of 0 indicates the quality of fish is excellent and 1 indicates the quality of fish is worse.

Now, the question was how to make the available modified FQI system to the consumer end-user to assess the quality of fish. India is promptly progressing towards the digital India platform and half of the total population will have internet access by 2023 (<https://digitalindia.gov.in>, 2020). This brought an idea to bring the new FQI system to a digital platform mode so that the consumer/end user can access the system. By keeping this in view, FISHQCheQ - a mobile app-based system was designed and developed to assess

the quality of fish. The system was designed using the computer language hypertext markup language (HTML) and a computational algorithm was developed in JavaScript. The designed system for both mobile and web applications, the same can access through mobile phones as it is responsive to different types of screens. The internet of things (IoT) plays an important role in accessing the system and assessing the quality of fish using the system. The user can get access to the system through the internet, which will communicate to the server and back to the user.

The home page of the mobile application contains three components viz: FQI home page, Instructions for FQI and Assessment of FQI (Fig. 1).

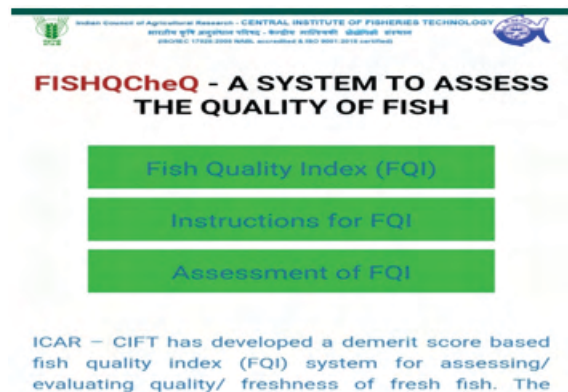
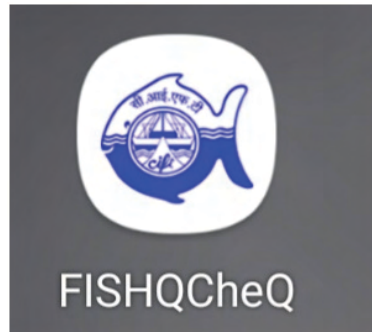


Fig.1 Home page of FISHQCheQ

A part of the FISHQCheQ provides instructions on performing the quality assessment of fish and the user can read to understand the procedure. Another important part of FISHQCheQ is the FQI page, where the user has to select the available demerit score as input for each quality attribute based on the quality evaluation of the fish. If any quality attribute was found to be irrelevant for a particular species of fish, the users always have to select 0 from the demerit score. Finally, the users have to click on 'compute FQI', then the system will communicate to the server through the internet, then



**Fig.2** The icon of FISHQCheQ in google play store

compute the FQI on the demerit score selected by the user and communicate back. The FQI score will have a quality description based on the score like fish quality is 'excellent', 'very good', 'good', 'moderate', 'moderate to bad' and 'bad to worse'. The user can take this as an indicator on quality of fish and decide whether to buy or not to buy fish.

The mobile application 'FISHQCHEQ' is available in the following link of google play store (Fig.1). <https://play.google.com/store/apps/details?id=com.cift.fishqcheq>

The link for the web application of the same is available in the institute website <https://www.cift.res.in/>. The advantage of the system is that it is available in the fingertips of the user with an active internet service provider and overcomes

the drawback of offline quality assessment of usual QIM methods. Ultimately, the system helps the consumers not to compromise on their need of quality fish.

### References:

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