

RAFT kits revolutionizing food testing scenario

FSSAI has made a quick progress towards the use of advanced technologies for food testing since 2019. These new food testing kits for detection of food-borne pathogens and toxins ensure “faster, better, cheaper” testing of food. There is a need to popularize these Rapid Tool kits to ensure they are widely used.



Arun Singhal,
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New Delhi

One of the most promising visions of our Prime Minister, Narendra Modi is to support an ‘AatmaNirbhar Bharat Abhiyan’. The Food Safety and Standards Authority of India (FSSAI) is committed to support and promote this ambitious campaign and has introduced a policy for approval of indigenously developed rapid food testing kits/equipment/methods. Such quick and easy-to-use testing kits have the potential to revolutionize the food testing landscape by increasing the outreach of testing at the ground-level and reducing time taken to test food items.

Many research and scientific institutions are actively engaged in development of rapid kits/equipment across fields in different parts of the world. Very recently, Department of Science and Technology (DST) has supported promotion and implementation of various appropriate technologies (including rapid ones) in India for addressing the issue of COVID-19. A lot of aspiring minds have come forward to develop simple testing kits and solutions for Corona Virus. DST has played a key role in scouting for solutions that are relevant to the country and can help in preparing for exigencies arising out of COVID-19 pandemic. This hasn't only showcased the enormous talent of bright minds in our country, but also given an impetus for implementation of the mission ‘AatmaNirbhar Bharat Abhiyan’ and the Vocal for Local mission by promoting innovation.

FSSAI has published a Regulation in the Gazette, namely “Food Safety and Standards (Laboratory and sample Analysis) First Amendment Regulations, 2020”. This step will ensure that indigenously developed kits/equipment for food testing are validated and approved under the FSSAI regulations on a fast track basis. Further, to facilitate ease of business in the food testing ecosystem. The validation/ verification criteria for these kits/ equipment is being developed by domain experts in the field.



Origin of Thought!

In the past few years, the food processing industry has witnessed an array of new or improved rapid kits/equipment/methods for the detection of foodborne pathogens, toxins and other contaminants etc. As the use of the Hazard Analysis & Critical Control Points (HACCP) model and other food safety systems have become firmly entrenched in quality assurance/quality control (QA/QC) programmes, the industry's need for “faster, better, cheaper” real-time test results, has also increased multi-fold.

Several recent rapid and automated kits/equipment/methods are commercially available to close the gap between rapid detection of foodborne contaminants etc. and instantaneous, on-line monitoring to ensure the safety of food products. Considering the above analytical advancements and further to reduce the screening

“Mostly, it has been noticed that a lot of weightage is given to the health diagnostic kits and equipment.

While it is important from the perspective of curative healthcare, more recently, it has been noticed that a lot of food borne illnesses can be reduced if some efforts can be made towards food diagnostic kits and equipment (including rapid ones). This will not only access the quality of food in real-time but will also ensure preventive healthcare”.



- Dr. Dinesh Kumar,

Member RAFT Committee and Assistant Director (Tech), Quality Assurance, FSSAI, New Delhi

time of food products by Food Safety Officers (FSO) and surveillance activities in the States/UTs, FSSAI has decided to frame a policy for fast track approval of rapid food testing kits/devices. The ultimate goal for these rapid testing devices and equipment is to provide results within a few hours, if not in “real time.”

Execution of Thought!

FSSAI has constituted a committee for scrutinization of Rapid Analytical Food Testing (RAFT) Kits/ Equipment/ Methods for various applications received by FSSAI under its RAFT Scheme. The RAFT Committee scrutinizes the application in two stages: Final Approval and Provisional Approval.

The Committee recommends those rapid kits/ equipment/methods for final approval, without any verification from identified laboratories that meet the requirements of the Food Safety and Standard Regulations and are validated against International Standards. Provisional approval is recommended for those rapid kit/equipment/method, which need verification from identified laboratories. Any rapid kit/ equipment/method which does not meet any criteria and does not have relevant documentation in place etc. is rejected by the Committee. Conformance certificate with a validity of three years is issued to approved rapid kits/ equipment/devices and provisional conformance certificate with a validity of one year is issued to provisionally approved rapid kit/ equipment.

As on January 12, 2021, a total of 124 Applications have been scrutinized by the RAFT Committee. Out of these, status of 109 applications was placed before the Food Authority in its last meeting. Out of these 109 applications, 53 rapid food testing kits/equipment/



“We have been conducting validations of various rapid kits and screening kits under

RAFT approval process as per National and International guidelines for the projects recommended by FSSAI. These validations and verifications are very important for recommending a suitable product in India to safeguard the interests of food business operators, consumers and regulatory bodies. These rapid kits are the need of the hour to ensure quick and accurate screening of incoming raw material and finished products at the manufacturer/ supply chain level”.



- Dr Rajesh R Nair,

Director, (CALF), National Dairy Development Board, Anand, Gujarat

methods have been approved, 12 rapid food testing kits/ equipment/methods have been provisionally approved and 44 rapid food testing kits/equipment/methods were not approved.

The rapid food testing kits/equipment approved by FSSAI are to be used for screening and surveillance purposes only. For enforcement purpose, the method as described in the FSSAI Manuals of Methods of Analysis of Foods and/ or the method as described in tables of Appendix B of Food Safety and Standards (Food Products



“Food safety is one of the major concern of a country regardless of its economic and social development. Food safety analysis is of paramount importance considering the deleterious effects of compromised food safety and quality on human health. Conventional and sophisticated techniques traditionally utilized for the detection of food contaminants, are relatively expensive, time-consuming and labor intensive, impeding their use as point-of-care-test. In addition, accessibility to such high-end analysis is limited in developing countries where food-related illnesses are prevalent.”



- Dr Lalitha Ramakrishna Gowda,
Chairman RAFT Committee and

Chief Scientist (Retd) - Central Food
Technological Research Institute (CFTRI), Mysore.

Standards and Food Additives) Regulations, 2011 shall be used. The RAFT kits are most advanced, easy to use, portable hand-held devices. They don't require any sophisticated equipment and reagents to run the tests. The tests can be performed anywhere by anyone without any specific training requirements. The typical time period taken by the conventional methods to analyze samples for chemical parameters like antibiotics in milk is about 2-3 days. With RAFT approved kits, the time can be considerably reduced to about 10-15 minutes.

What companies are to say?

“In today's world, when advanced technology is at the tip of our fingers in all segments, why not Food Safety? Rapid diagnosis of food safety and a high level of standards is the need of the hour. FSSAI has identified this void and taken the initiative to approve the rapid methods through RAFT scheme. FSSAI's RAFT scheme for approval of indigenous kits is truly a well-thought-out structural approach for adapting new technologies in the food testing space. FSSAI has been evaluating each technology in great depth with the help of their expert scientific panel with profound knowledge in the subject. Right from scrutinizing, by understanding the technology and accumulating adequate data for supporting the use, suitability & preparing a process for easy adoption by all levels of users, every point is considered in detail”.

- NEOGEN, USA

“We are very proud of Food safety and healthy nutrition drive initiative by FSSAI. It is an excellent move towards creating awareness among consumers and also channelizing the industry towards one objective by introducing the RAFT scheme. Our experience with the RAFT scheme has been extremely wonderful as the process was very clear and fast, making it very friendly for the relevant stakeholders. Apart from the process, what we see the approach of ensuring compliance and due diligence is well acknowledged. Fostering such integrated approach is a stepping stone towards building a Healthy Nation. We are thankful to FSSAI for initiating the RAFT scheme and supporting the industry”.

- Chr. Hansen, Denmark

FSSAI has made a quick progress towards the use of advanced technologies for food testing since the year 2019. These new food testing kits/equipment for detection of food-borne pathogens and toxins ensure “faster, better, cheaper” testing of food. There is a need to popularize these Rapid Tool kits to ensure they are widely used. More importantly, there is a need to promote our startups who are working in the area of food testing so that our local innovations can be mainstreamed. **NS**