



FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA

(A statutory body under the Ministry of Health and Family Welfare, Government of India)



Food Safety & Standards Act, 2006
Commemorating a Decade

Inspiring Trust
Assuring Safe and Nutritious Food











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India's Food Regulator

INDIA'S FOOD SAFETY FRAMEWORK

5 Pillars of Trust  7 Key Processes



India's Food Regulator

Inspiring Trust - Assuring Safe and Nutritious Food



GLOBAL TRUST

Standards and practices harmonized to global benchmarks.



SCIENTISTS

Set science-based standards to ensure food is safe.



CITIZENS

Trust that the food they get in the market is safe.



FOOD BUSINESSES

Comply with standards in manufacturing, storage, transportation and retail of food.



LOCAL TRUST

Objective and transparent standards for effective compliance.

Set standards of food products

Develop safe food practices

License food businesses

Ensure compliance through inspections

Test food for standards

Train and build capacity

Citizens Outreach





सत्यमेव जयते

प्रधान मंत्री

Prime Minister

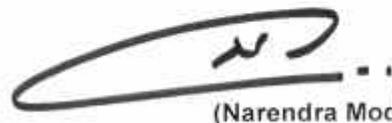
MESSAGE

The Food Safety and Standards Act, 2006 was enacted a decade ago in August 2006. This Act is an important milestone to ensure safe and wholesome food to our citizens. Safe food is a prerequisite to good health and is necessary for the all round growth and prosperity of the country.

The Food Safety and Standards Authority of India (FSSAI) deals with the core need of every human being. FSSAI has the responsibility for ensuring the manufacture and consumption of wholesome, nutritious and safe food. The Authority has taken several new initiatives in respect of its regulatory functions and now needs to focus on empowering the consumers so that the manufacturers and suppliers of food products become responsive to consumer needs, demands and expectations.

Safe, wholesome and hygienic food will create a 'Swasth Bharat'. This has to be the cornerstone of the efforts of FSSAI. The completion of a decade is a good opportunity for FSSAI to take stock of the past work and strategize the way for the future with greater effort, passion and dedication.

I wish the FSSAI success in all its efforts and initiatives.

A handwritten signature in black ink, appearing to be 'N. Modi'.

(Narendra Modi)

New Delhi
August 13, 2016





जगत प्रकाश नड्डा
Jagat Prakash Nadda



स्वास्थ्य एवं परिवार कल्याण मंत्री
भारत सरकार
Minister of Health & Family Welfare
Government of India



Message

It is heartening to learn that the Food Safety & Standards Act, 2006 is completing a decade of its enactment. It was under this Act that the Food Safety and Standards Authority of India (FSSAI) was established to lay down scientific standards and regulate the manufacture, storage, distribution, sale and import of food items, and ensure availability of safe and wholesome food for all.

2. During the last 10 years, considerable ground has been covered in terms of achieving the goals set under the Act. To begin with, the focus shifted from adulteration to a more holistic approach to ensuring food safety, which necessitated the establishment of a robust food testing ecosystem. This ecosystem today comprises a strong network of food testing laboratories across the Country.

3. FSSAI is committed to making it easy for the industry to do business. Use of technology has ensured that a single window is used for all licensing, registration & imports, making it a simplified process. On the international front too, FSSAI has actively participated in Codex Committee meetings, initiating new work proposals in Codex Committees and playing a leadership role in eight Electronic Working Groups under the Codex Alimentarius Commission.

4. The largest stakeholder is the consumer, and consumer empowerment is the way of the future. Consumers benefitted tremendously through projects like 'Delhi Clean Street Food', where street food vendors were trained to give safe & hygienic food. Project 'Bhog' ensured that the *prasad* was safe & hygienic. New & upcoming projects, like food safety in schools will send the message to all children, who are the future of the Country. Needless to say, the Food Authority has the responsibility of ensuring that the food we consume, be it at home, in restaurants or at the wayside kiosks, is of acceptable standards. It is the responsibility of food industry and FSSAI to take all necessary steps and initiatives to empower the consumer to the fullest extent, so that the manufacturers and the suppliers become responsive to the expectations of consumers. This can only be achieved through a collaborative approach to food safety by the industry and FSSAI.

5. This book, with a compendium of articles by experts on various aspects of food safety, will not only provide an account of the progress achieved in the last 10 years, but also illuminate the discourse with a number of valuable ideas and suggestions for the future.

6. We expect FSSAI to stand for Trust – Trust in regulations, systems & compliance. Synergy between the industry and the authority will ensure that this trust is well placed. I have no doubt that FSSAI will go from strength to strength in the decades ahead.



(Jagat Prakash Nadda)

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फगगन सिंह कुलस्ते
FAGGAN SINGH KULASTE



स्वास्थ्य एवं परिवार कल्याण राज्य मंत्री
भारत सरकार

MINISTER OF STATE FOR
HEALTH & FAMILY WELFARE
GOVERNMENT OF INDIA

Dated 12.08.2016

Message

It was a decade ago that India embarked on a systematic and scientific approach to food safety and standards. The objective was to create a sound foundation for a food safety regime in the country and also to harmonize it with global standards so that a climate of trust is created both globally and locally on as vital an issue as food produced, sold and distributed in the country.

The completion of 10 years of the FSS Act, 2006 is a very important milestone as these are the foundation years of our endeavour towards a more enlightened and scientific approach to food safety.

I wish to express my deepest appreciation towards all those who have worked tirelessly and contributed to strengthening food safety standards for the benefit of millions of our fellow citizens. The publication of a commemorative edition presenting a historical perspective, covering all the relevant issues and concerns for the future, will undoubtedly help enhance the discourse on food safety in the country.

I congratulate the FSSAI on this initiative and extend my heartiest compliments on this momentous occasion.


(Faggan Singh-Kulaste)

New Delhi



सी.के. मिश्रा
सचिव
C.K. Mishra
Secretary



भारत सरकार
स्वास्थ्य एवं परिवार कल्याण विभाग
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
Government of India
Department of Health and Family Welfare
Ministry of Health and Family Welfare

MESSAGE

The Food Safety and Standards Act has completed 10 successful years. I am glad that Food Safety and Standards Authority of India has undertaken to document its decade long journey and publish a comprehensive collection of articles from experts and stakeholders on food safety on the 10th anniversary of the Food Safety and Standards Act, 2006.

Established under the Ministry of Health and Family Welfare, the FSSAI works closely with as many as 16 Ministries ranging from Agriculture, Micro, Small and Medium Enterprises to Railways and Civil Aviation. As such, it has a very large canvas of influence as its functions and decisions affect every individual in India. Therefore, the significance, role and responsibility of the FSSAI cannot be emphasized enough.

The two commemorative editions, I am sure, will provide us with deep insights into the various issues, complexities and challenges associated with creating a robust food safety ecosystem in the country. The experiences and lessons from the past are extremely valuable in preparing for the future and undertaking course corrections wherever required. There is a lot that has to be learnt and unlearned in a fast-changing, modern world. To keep pace with all these changes, multiple perspectives and points-of-view are sought. The compendium published by the FSSAI has a rich content, and therefore valuable as a reference book for everyone associated with food safety issues in India.

All efforts are taken to ensure that the Food Authority grows from strength to strength in the years to come and reaches yet another high point as a model institution over the next decade.

I wish the FSSAI the very best in all of its endeavours.


(C.K. Mishra)

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Food Safety and Standards Act: A co-operative, collaborative and inclusive regulation



Ashish Bahuguna
Chairperson, FSSAI

It has been ten years since the Food Safety and Standards Act was enacted. However, the implementation of the Act in full earnest only commenced in 2011, after the notification of several major regulations. Nonetheless, the time is now ripe for analysing the experiences gained during implementation of this legislation over the past few years to determine whether it is sufficient to meet the challenge of ensuring the availability of safe and wholesome food to meet the needs of a diverse food economy, as exists in India.

The challenge of balancing the interests of various sections of the food economy cannot be over-emphasised. While the need for food safety to protect the life and health of consumers has to be paramount, it has to be tempered with inadequacy of information and knowledge of risks leading to scientific uncertainty, regard to technical and economic feasibility, and take into account the prevailing practices and conditions in the country. Determining the point at which such balance should be struck becomes a highly subjective exercise, depending upon the prism through which this issue is viewed. How to make this subjective exercise more objective in the interests of transparency, consistency and practicability is a challenge that the Food Authority has to constantly address in consultation with all stakeholders.

The Food Safety and Standards Act marks a paradigm shift from a focus on adulteration to the assessment and management of risks. This requires a change in the mindset of all stakeholders who have to move away from an adversarial approach to one based on co-operation and partnerships. The food industry and the regulatory machinery have to work together with consumer groups and reach out to all constituents of the food chain - from

the farmer to the consumer - to instill processes, protocols and standards that ensure food safety.

It is not easy to change age-old notions, practices and rites. The food sector, too, has not been able to fully shake off its preconceived prejudices, biases and mistrust amongst its constituents. However, signs of a breakthrough are already visible and will become more manifest as each sector codifies its respective set of procedures, practices and protocols. The Food Authority would need to play a leading role by adopting a pluralist approach to the development of standards, including process standards that are simple, straightforward and easy to implement. These standards would need to be disseminated extensively across stakeholders in all parts of the country, and be wholeheartedly adopted by the industry. Support, by way of advice, technology and other resources, would also need to be provided to the food industry, especially the unorganised sections, to enable them to meet the challenge of providing safe food. Finally, consumer organisations, media and judiciary would have to remain ever alert to prevent abuse, misuse and circumvention of the law so as to protect the interests of the consumers.

Food safety is particularly important for India, where an inordinately high percentage of our citizenry suffers from malnutrition and food borne diseases. We all have to step up to ensure that we remove this scourge from our mindset by adopting scientific standards, processes and protocols for ensuring safe and wholesome food to all sections of the society.



Vision Statement

FSSAI ready with roadmap for the future



Pawan Agarwal
CEO, FSSAI

Mahatma Gandhi had once said, “It is health that is real wealth and not pieces of gold and silver.” And safe and nutritious food is the foundation of good health. Food affects us all in myriad ways. Food, in its varied forms, is not just a means of sustenance – it is a central, defining aspect of cultures across the world. Apart from nutrition and taste, a less glamorous but perhaps more important part of food is the safety standards that people adhere to while preparing, selling, serving and eating food. Let us consider this figure to get a perspective: 5.82 crore cases of food-borne disease were reported in 2010, in addition to 3.51 lakh food-related deaths. Unsafe food is being perceived as a growing global threat today.

In India, Food Safety and Standards Authority of India (FSSAI) is mandated under Food Safety and Standards Act 2006 to protect people from this threat. In its role of a food regulator, FSSAI is proud that it touches the lives of each of the 128 crore people in the country. More than just reaching the people, it is assuring them that under the watchful eye of FSSAI, the food they get in any form, raw or processed, is safe to consume.

India took an important step towards building a safe food culture a decade ago by enacting the FSS Act. In one stroke, it brought about a paradigm shift in the way we look at food safety regulations.

The act did not merely repeal the pre-existing nine acts and many scattered orders governed by different ministries, it did not just unify them into a single act, but it marked a change in the basic thinking about the process of implementing food safety - from detecting adulteration and punishing the culprit,

to promoting self-regulation and setting science based standards for the same. In doing this, it took a cue from developed nations. In these nations, too, the entire space of food safety was first highly fragmented; but consolidation had started by the mid-1990s to produce a more cohesive and well documented regulatory system.

Since its inception in 2008 upto now, FSSAI concentrated on creating a robust regulatory environment in terms of rules, standards and regulations. Much of this task is now complete; a small part remains as a work in progress. In all probability, there will always be some regulatory areas that remain incomplete, as standards are not static. New challenges, new scientific knowledge and changing environment make the formulation of standards a continuous process.

I am confident that with the regulatory environment becoming clearer, our food businesses will embrace the responsibility of complying with the new norms. To encourage and accelerate the process, FSSAI is organising training and capacity building exercises, particularly for small FBOs. The focus will be on training, disseminating information on good manufacturing practices, hygienic practices, hazard analysis and critical control points in food processing units.

Now that a majority of the standards are in place in India, the next goal is to bring behavioural and cultural change in the way food is manufactured and brought to the consumers' plates. For this, FSSAI needs to work with all stakeholders - reaching all the lakhs of FBOs, from roadside tea vendors to big corporates; it must also reach the people, and teach them to recognise and demand safe food. It is a gigantic task.

FSSAI will have to focus its energies on proper implementation and reaching out to each and every FBO and consumer to create awareness, build confidence and win trust. It is important that FSSAI is trusted by food businesses and consumers. Trust can be won by ensuring that the FSSAI symbol is printed on every food packet and displayed at every food business and retail outlet. When the consumers see the symbol, they must understand the entire eco-system, the process, initiatives that have gone into putting this mark on the package.

In line with its all-encompassing mandate, FSSAI is now working with different stakeholders to ensure that the food is safe at home, in school, at workplaces, in trains and flights and even in temples to ensure safe 'prasad'. It has plans to look into packaging, e-commerce and advertisements. FSSAI intervention in the advertisement space becomes necessary as food producers make health and nutrition claims that need to be reviewed. FSSAI regulates labelling, but not packaging. Since migration of toxins can take place because of packaging, this exclusion needs to be rethought. Routes by which food reaches the consumers are also changing fast. E-commerce firms are emerging as an important food distributor. As they expand their footprint, they cannot remain outside the ambit of food safety regulations.

FSSAI is ready with a roadmap for the future. It has factored in an exponential growth of the food sector, both in size and form. It expects that there will be more international food trade, requiring more movement of food products across the world. Many new food products and maybe new product categories, like nutraceuticals and other health foods, will hit the market.

FSSAI has three groups of stake holders – the enforcement machinery in each state, food business operators (FBOs) and consumers. The third one is the most important, as it is for them that this entire effort is made. Every actor in the food business must remember that the consumers have a right to safe food. Consumers also need to understand what their rights are; they have to be vigilant. They can become our inspectors and check points.

They can give us feedback and we will align our enforcement based on that. As a last recourse, we should look at enforcement machinery. We do not need to have large manpower for regulatory compliance. It is more important to have unambiguous and clear standards.

We at FSSAI are giving priority to simplifying regulations so that they can be easily understood by all, with the expectation that FBOs can easily follow them.

Completing a decade is, for us, definitely an occasion to celebrate. But more than that, it is also an opportunity to look back, review, and course correct. When we commemorate the completion of a decade of the FSS Act, it is the right moment to also plan the future course of FSSAI.

FSSAI is ready with a roadmap for the future. It has factored in an exponential growth of the food sector, both in size and form. It expects that there will be more international food trade, requiring more movement of food products across the world. Many new food products and maybe new product categories, like nutraceuticals and other health foods, will hit the market.

There will be new food making processes, testing processes, new high-tech machines and equipment, more automation, state-of-the-art logistic facilities. Knowing that change is the only constant even in the food industry, FSSAI is prepared to tackle each of these developments as per the demands of the day, always keeping its core objective in sight: ensuring that food is safe across the value chain, from harvest to the plate.

It is, of course, only possible if this is seen as shared responsibility by all and in the spirit of true partnership based on mutual trust.



Reach out to every FBO in the country



Milind Kokje

Chief Editor, Nuffoods Spectrum

The goal of a food safety professional should be to create a food safety culture, not a food safety programme,” said Walmart’s food safety expert and vice president Frank Yiannas.

As stated by Yiannas, India took the first step towards developing the country’s food safety culture 10 years back, when the Parliament passed the Food Safety and Standards bill to make it into an act. In doing so, it also repealed a number of existing regulatory acts and orders that were mostly broad-based subject wise and commodity wise. The nine different acts related to food items included Prevention of Food Adulteration Act, 1954, Fruit Products Order, 1955, Meat Food Products Order, 1973, Vegetable Oil Products (Control) Order, 1947, etc. These acts, NuFFooDS Spectrum notices, dealt with adulteration and contamination issues and were governed by different ministries, thereby creating regulatory confusion.

As India started becoming an important part of the USD 200 billion global food trade, the need for a new act was felt for various reasons, the first important reason being harmonising with international law to facilitate food trade without compromising safety and bringing innovation in foods. Another important reason was framing regulatory requirements based on science and risk analysis. In addition to these objectives, NuFFooDS Spectrum observes, one more important objective of the act is encouraging and promoting self-regulation.

NuFFooDS Spectrum feels that the major differences between the previous food-related acts and the FSS Act 2006 are in approach and scope: of shifting from regulatory regime to self-compliance through food safety management, and not referring to any specific type of commodity like vegetable oils, meat, fruit etc. Instead, the act is applicable to foods defined in the act. It is worth noting that all types of foods like proprietary foods, GM foods, novel foods, dietary supplements,

nutraceuticals and traditional foods have been brought under the act.

The objective of the FSS Act 2006 is to have a single authority for everything related to food safety and standards. It does not define just adulteration and contamination, but defines food in terms of safety and quality. It lays down a very detailed procedure for evolving standards, to be accepted by all the stakeholders.

“ A lot happened prior to its enactment. Discussions, debates and interactions were held at different levels, generating many suggestions and recommendations for the enactment of a new food law that would introduce a new food culture. ”

The act has graded penalties and it separates serious offences and light offences. Very serious offences, like in previous acts, will go to court. But there is an adjudicating mechanism to take care of smaller and light offences. Every district has an adjudicating officer to decide small cases, wherein there is even a provision for only giving a warning to the offending party. The aim is to encourage self-regulation. One more objective of the act is to ensure the traceability of the food from farm to fork, and in case something goes wrong, to catch the right culprit in the chain.

But such comprehensive and far reaching act, with completely new thinking that would revolutionise the food sector, was not enacted without due care and deliberation. A lot happened prior to its enactment. Discussions, debates and interactions were held at different levels, generating many suggestions and recommendations for the enactment of a new food law that would introduce a new food culture. On the basis of these consultations, the government drafted and introduced the Food Safety and Standards bill 2005 in the Lok Sabha. The then minister of state for food processing industries Subodh Kant Sahay introduced the bill in the Lok Sabha on August 25, 2005. The bill had 12 chapters containing 101 clauses briefly, and two schedules.

The bill was sent to the 31-member standing committee of agriculture (2005-06) of the 14th Lok Sabha, which was headed by Ram Gopal Yadav and consisted of members from both the houses. The committee heard the views of All India Food Processors Association (AIFPA), New Delhi (ii) Centre for Science and Environment (CSE), New Delhi (iii) Shetkari Sangthan, Maharashtra (iv) Confederation of Indian Industry, (CII), New Delhi (v) Gandhi Peace Foundation, (GPF), Kottayam; (vi) Voluntary Organisation in Interest of Consumer Education (VOICE), New Delhi; (vii) Consumer Coordination Council; (viii) All India Retailers Federation (AIRF). After due deliberation, the committee submitted its report in February 2006, expressing its views on various matters including the name of the proposed authority, under which ministry it should work and whether water supplied by civic authorities should be included in the definition of food.

During the discussion on the bill in the house, members praised the intention, raised pertinent questions, expressed apprehensions and made suggestions. Some of the statements of the members were -

“I am happy that you provided checks and counterchecks at different stages. It is very good.”

“The key issue, to which I would like to draw the attention of the Hon. Minister, is the organised as well as unorganised sector. About organised sector many Hon. Members have mentioned. For organised sector this is all right. But there is a large section in the society that is in the unorganised sector and unorganised food sections are required to follow this food law.”

“In this legislation, there may be some lacuna, but the endeavour made by this Government deserves to be praised lavishly.”

“As we are moving to that world where food safety and standard is the imperative need, scientific development of food processing is sin qua non for the development of this industry.”

“Already, the Ministry has adopted 45 amendments before the

passing of this Bill. As such, it is a voluminous bill consisting of 101 clauses whereby it has encompassed all the necessary aspects in compliance with the potentially contradictory concept of sovereign discretion, trade liberalisation and scientific objectivity.”

“The main objective of the Bill, as stated, is to provide for 'a systematic and scientific development of the food processing industry'. It is all right. It further says that 'however, the duties of the Food Safety and Standards Authority (FSSA) appear to be mainly to ensure compliance of safety standards.' In this context, my question is, should there be a greater thrust towards development of the food processing industry? For instance, if a manufacturer or distributor falls short of specified standards, should the FSSA attempt to improve his systems to achieve the requisite level before initiating penal action? It is a very important question. I hope the Minister would respond to it.”

After debates in both the houses, the bill was passed in the Lok Sabha on July 26, 2006 and in Rajya Sabha on August 2, 2006. It received the assent of the President on August 23, 2006 and the act was published on August 24, 2006.

Thereafter, however, it took about three to four years to draft the rules, regulations etc. Of course, passing the act and creating an authority for its enforcement is not an end in itself. It is only the beginning, of interpretations, new challenges, learning and solutions - a continuous journey towards the destination. It is a roller coaster ride. FSSAI too experienced this ride as it passed through such challenges as some of rules were legally challenged or criticised. When needed, some corrective steps were also taken, as in 2014 when the act was amended. NuFFooDS Spectrum feels that the most important challenge for the regulator now is for the regulations to reach each and every FBO in every nook and corner of the country-whose numbers are in lakhs - to register them as prescribed in the law, to strengthen the culture of food safety. At the same time, it must educate every citizen to expect and demand safe food. The task is difficult in a price-sensitive country like India, where people give more importance to price than quality due to varied reasons. FSSAI will have to work hard and struggle to meet both the challenges - to introduce the food safety culture fully and to revolutionise the food sector of the country in near future.

This entire process is very well described by one of the founders of the United States, Benjamin Franklin, “An ounce of prevention is worth a pound of cure.” The FSS Act is just an example of the implementation of this wisdom.





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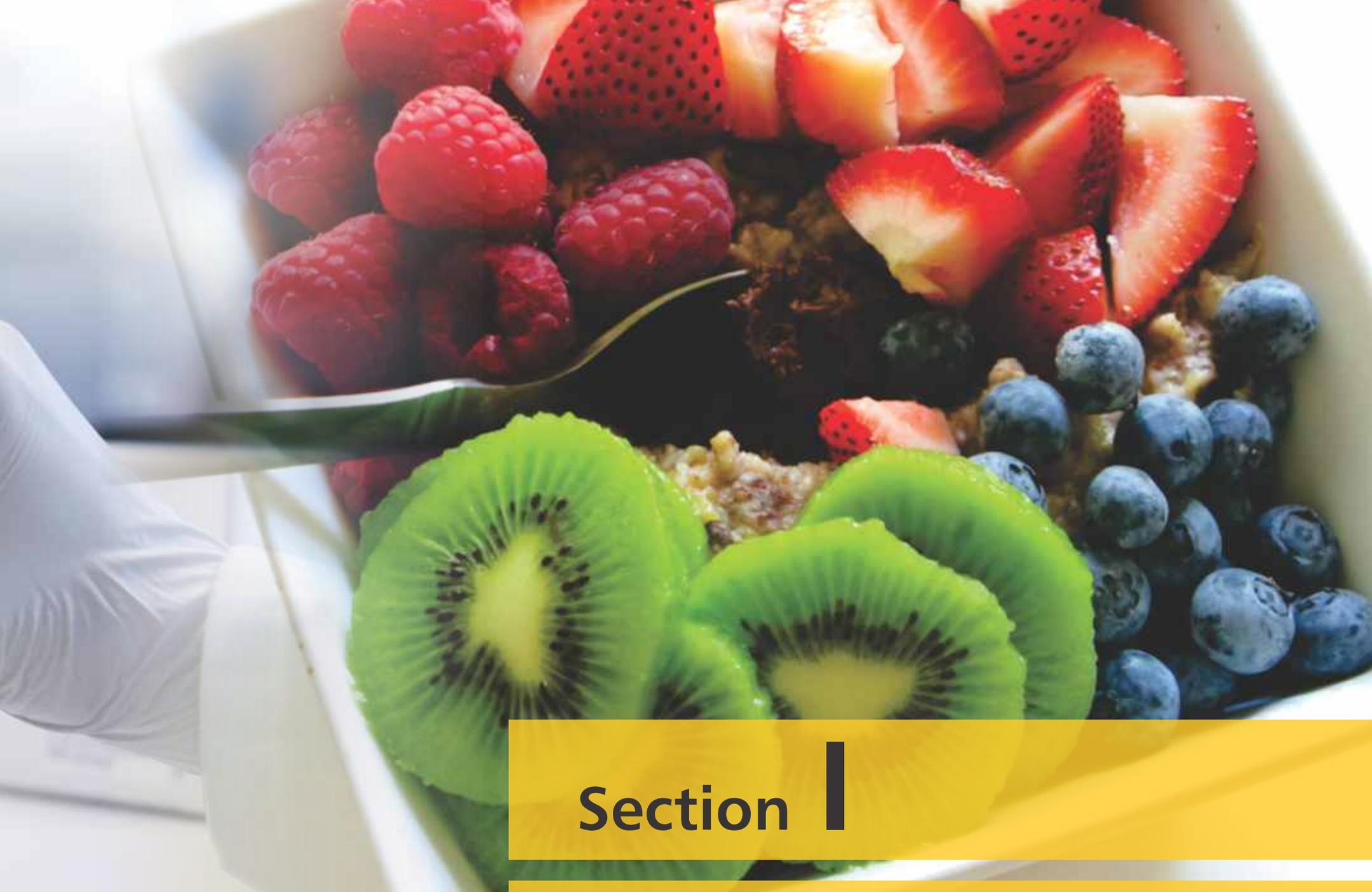
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Section |

FSSAI: Regulatory & Legislative Framework



With law in place, FSSAI must now re-invent itself



P. I. Suvrathan
First Chairperson, FSSAI

The enactment of a law is no guarantee that it will be effectively implemented. As food safety regulation gets implemented, unforeseen developments call for creative interpretation of the provisions keeping in view the spirit of the law. It is natural in a sector characterised by fast pace of technological change for the regulator to find himself without clear tools to manage and respond to events. This calls for development of new ideas and options, some of which may even require amendment of the law. Therefore, it may be useful to periodically reiterate the original intentions of the law and review the emerging scenario so as to rededicate the organization to its basic objectives.

Background of the Integrated Food Law

The statement of Objects and Reasons appended to the Food Safety and Standards Bill 2006 refers to a multiplicity of food laws, standard setting and enforcement agencies, and the need for modernisation of laws which are non-responsive to technological developments, all of which hinder the growth of a modern food processing sector and fixation of safety standards. It was in 1998 that the Prime Minister's Council on Trade and Industry recommended comprehensive legislation on food, with a regulatory authority as a means to modernise the food sector and ensure safety of food.

In 2004, the Joint Parliamentary Committee on Pesticide Residues emphasised the need to converge all present food laws and to have a single regulatory body. The high level committee under the chairmanship of former Supreme Court Chief Justice Venkatchaliah recommended the introduction of an integrated food law based on risk assessment, principles of modern food technology and associating the stakeholders, rather than through an adversarial approach and criminal

action in all cases. The Standing Committee of Parliament, in its 12th Report submitted in 2005, urged that the much needed legislation on Integrated Food Law should be expedited.

Apart from this, several policy statements by the President of India and the budget speeches of the Finance Minister promised such an integrated food law in a time bound manner as a means to modernise the food sector, increase employment and ensure consumer safety. Many international assurances were also given by the government regarding the integrated food law. The Member Secretary of the Law Commission was asked to make a comprehensive study of the food safety laws in various countries and he recommended replacing the Prevention of Food Adulteration Act 1954 (PFA) with an integrated food law incorporating modern science and technology, responsibility of manufacturers to ensure safety, scientific determination of standards and a risk-based approach to food safety. Finally, the Group of Ministers appointed by the Government of India recommended enactment of the FSSA bill 2005 after extensive discussions, consultations with stake holders and forging a consensus on various contentious issues.

Change in Approach to Food Safety

The main issue raised against the PFA was its adversarial approach to food safety, considering all cases through the prism of adulteration, when the technology and regulatory practices worldwide have moved on to risk-based determination of standards, holding the food manufacturer responsible for safety through documented safety practices rather than solely by taking samples from the market and prosecuting.

Modern food safety regulation recognises that safety can be compromised not only at the stage of manufacture but at any

link in the food chain, starting from the farm, ingredients, processing, packaging, transport, storage and sale. Each link in the food chain has to be held responsible for following safety practices and this can only be done through a risk-based approach identifying the critical points where contamination can occur and specifying the parameters to be kept in mind to ensure safety. Neglect of this basic fact resulted in the number of PFA cases in courts going up to more than one lakh in number, most of which could not be proven beyond any reasonable doubt.

Modern legal principles advocate discrimination in the prosecution of food safety cases, rather than seeking the highest jail punishment. Decriminalisation is suggested by modern jurists while drafting laws as a means to achieve effective implementation. The consensus was that the potential of the food processing sector and Indian agriculture cannot be utilised fully within the framework of the PFA, which discouraged innovation and value addition.

Each food manufacturer has to be fully involved in the safety of his product rather than depending only on food inspectors to establish safety.

In the new act, contamination is defined so as to differentiate between deliberate and unintentional acts or as part of the normal process of manufacture or migration from ingredients so that responsibility can be fixed accordingly. It incorporates a graded penalty depending on the severity of the crime and awards the highest penalty only where life is threatened. The emphasis is on monetary penalties in the majority of cases, to be quickly adjudicated and imposed. Jail sentences are to be awarded only when the crime results in death or severe injury to consumers.

When India is hoping to achieve the position of a food basket to the world, exporting a wide range of food products based on its widely diverse climatic conditions, the essential requirement is the modernisation of the food industry and assurance of safety and quality of food to the consumer, both within the country and abroad. Each food manufacturer has to be fully involved in

the safety of his product rather than depending only on food inspectors to establish safety. When we are looking for means to expand the number of people employed in the food sector, only a safe, modern food industry in which safety is well established and entry and exit are easy can meet the requirements of a changing market. There is no other sector of industry, either organised or unorganised, that can bring such a large number of unskilled and semi-skilled population into gainful employment. These were some of the factors that weighed in favour of an integrated food law rather than cosmetic changes to the PFA as was suggested by some quarters.

Points of Departure from PFA Act

The following are the critical areas where the FSSA departs from the PFA Act:

- Food safety is primarily the responsibility of the Food Business Operator (FBO). He knows best how the food is manufactured and how safety can be compromised. The moment a manufacturer decides to place the product in the market, he should be held squarely responsible for its safety.
- Contamination can occur at any point in the food chain starting from the quality of ingredients, processing, technology, storage, transport, sale, and even at the consumer end. Each stage is required to follow specific safety practices for which the concerned entity can be held accountable. Certification of safety processes thus becomes an essential part of manufacture so that the FBO can ensure that by following such practices which are certified, he can protect himself from prosecution. The law, in fact, makes a specific provision that the courts will take note of the fact that the FBO has undergone a safety audit and taken necessary steps to ensure safety of his product. This is in line with safety practices in advanced countries where it is only after the FBO defaults after warnings that prosecution is resorted to. This is also in recognition of the fact that no regulator can inspect 100 per cent of the industries being regulated.
- The law also recognises that food safety can only be ensured in collaboration with the various agencies in the field such as panchayats, health departments, homes, industry, agriculture, protection of water sources, waste management etc, all of which contribute to food being rendered unsafe. The task of the regulator, then, would be to monitor safety levels in various sectors and identify critical bottlenecks and agencies responsible for meeting them.

- Risk assessment is the internationally established methodology to address food safety issues. The issues affecting food safety are so numerous and difficult to monitor that the regulator has to prioritise the safety issues and identify those which require immediate attention. Many issues are best left to be handled by the agencies directly responsible by giving appropriate guidance to them. The resources and skills available to the regulator put a limit on the number of safety issues which can be successfully handled.
- The food safety regulator is specifically required to monitor the latest scientific developments in the food sector, emerging safety issues across the world and anticipate safety risks before they actually hit the country. With large scale movement of people and goods across borders, the food safety crisis in one country can reach another country in no time.
- Transparency becomes an essential requirement in the development of standards, with stakeholders being well apprised of proposed regulations and given reasonable time to give their suggestions. Hastily drafted and announced measures can equally quickly collapse, raising unexpected problems in execution and issues coming up which were not anticipated. Science itself can come up with discoveries and research findings which contradict current regulatory measures.
- The FBO is now given a clear means to contest the findings of government food safety labs by appealing to certified labs that need to confirm the original findings. This provision was introduced on the basis of the widespread feeling that many laboratory results are unreliable, not based on scientific procedures and cannot be the basis of successful prosecution.
- Determination of food safety standards will be initiated and finalised by FSSAI, the food safety regulator, so that there is no duplication of work or parallel determination of standards for the same items and there is some degree of harmonisation with international safety standards. The fate of Indian food exports is directly linked with such harmonisation across borders.
- Uniform application of safety standards across the country is sought to be achieved by making FSSAI the sole agency to coordinate determination of such standards. The training and skilling of food safety employees will also be made uniform across the country to ensure professionalism, efficiency and predictability.

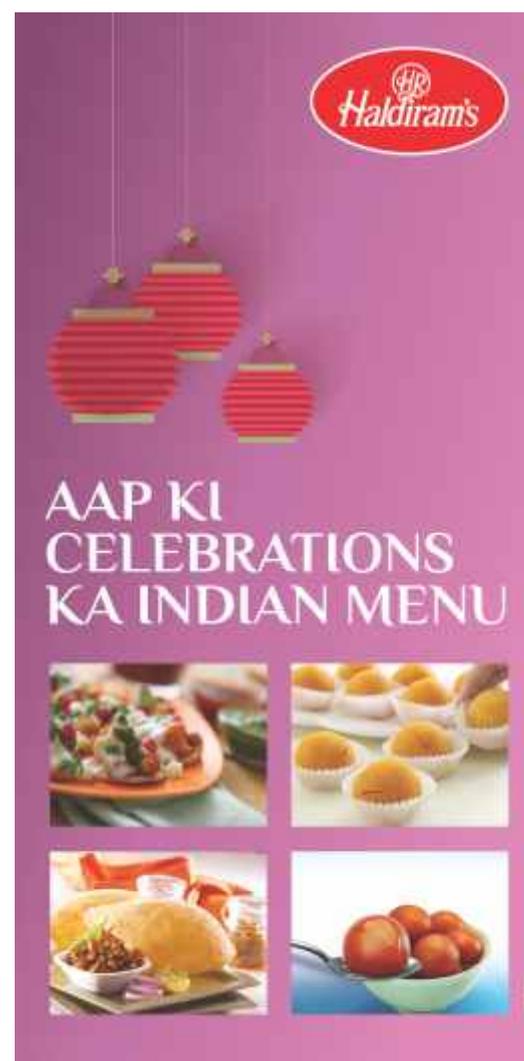
FSSAI seeks to achieve a light-handed regulation of a fast changing sector in which technology plays an important role and the regulator does not need to second guess the FBO. A similar approach to the software industry has yielded intended results.

A Responsive Regulatory System

In a sector where technology moves at a pace that the regulator cannot hope to match, and which provides employment to millions without being tied down by bureaucracy, India has a lot to gain by adopting a light-handed regulatory system that holds the food manufacturer squarely responsible for food safety,

and also provides the means to demonstrate compliance with such safety through simple, easily understood standards. The objective should be to build food safety as an integral part of how food is manufactured, processed, handled and sold as well as eaten, rather than being imposed by an external regulatory system.

It may be interesting to recall that during discussion in Parliament of the food bill, the view was strongly expressed that food manufacture in India is the only occupation where, for example, a widow with young



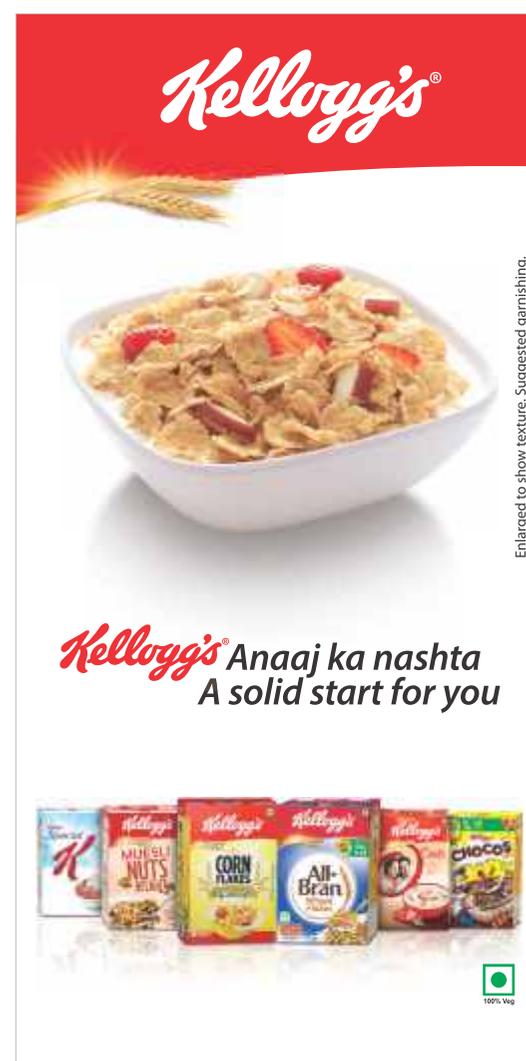
children to support, without any means, can decide one day to start a business to sell idli or poha and launch the venture the next day without a license, inspection, payment of fees or any other formality. Which other regular employment can the state offer to a citizen struggling to make both ends meet?

The Way Forward

Keeping in view the original intentions of the FSSA and the experience till date, the most critical steps which FSSAI should put in place are:

- Build up its capability to undertake risk analysis and development of standards and professionalism among its cadres.
- Lay down and implement clear processes for utilising scientific advice while formulating regulations.
- Undertake regular food safety surveys to estimate and quantify the level of food safety across the country so that the impact of food regulation and its success or otherwise can be established.
- Train the food safety personnel in the states to high professional levels and establish networks with centres of excellence in various fields where FSSAI does not have specific expertise.
- Establish a wide network of accreditation and certification agencies to audit and certify food safety.
- Put in place a risk based mechanism for import of food.
- Upgrade the skills and reliability of food testing laboratories as the basis for estimating food safety levels.

Historically, regulatory systems have gone through phases of dormancy and activism, with the state, the consumer as well as science pushing for regulatory innovation to meet the emerging trends and crises in the sector. It is perhaps time for FSSAI to reinvent itself keeping in view the expectations of the nation.

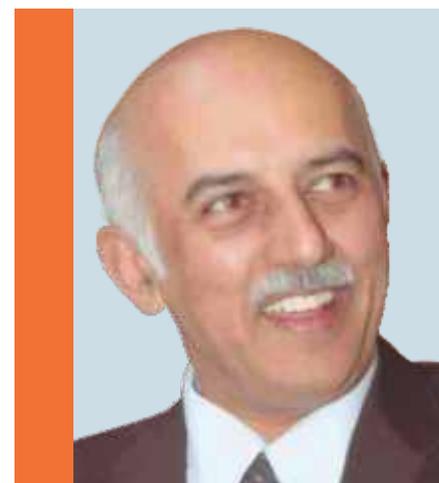
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The birth, journey and the way forward for FSSAI



V. Prakash, FRSC

Distinguished Scientist, CSIR-India
Hon. Vice President,
International Union of
Nutritional Sciences (IUNS)

It is a great pleasure for me to congratulate the Food Safety and Standards Authority of India, (FSSAI) on the completion of the first decade of the Food Safety and Standards Act, 2006. Ten years is not a long period for the implementation of a comprehensive legislation on food standards and safety from scratch. Having witnessed the journey of the FSSAI since its inception, I offer some thoughts on its evolution and future path...

When the beverage pesticide problem first became a matter for public concern in India, I was a part of the technical committee that was entrusted with the task of addressing the contamination issue in association with the Joint Parliamentary Committee. One of our recommendations was that the country should have a Food Safety Authority similar to the regulatory authorities that exist in other countries. With the approval of the Parliament and the Government of India, FSSAI was born! From starting its operation to building it to its current level of operation, the success of FSSAI was due to a huge collaborative effort by many people - the Chairman, the CEOs and scientists, among others.

Today, FSSAI is in a position to issue many gazette notifications for proper implementation of food safety, both at the regulatory level and at the implementation level (including state level implementation). Whether it is imports or exports, it ensures that the quality of India's Food Safety Seal is adorned by FSSAI's professional approach. FSSAI's top management, middle

management and staff are all to be complimented for their hard work leading this accomplishment. I hope their task will be eased in the near future by an expansion of their technical team!

It is important to remember that the regulator must always be driven by a science-based approach and perfect and immediate implementation. The regulations framed by FSSAI must be emphasised with clarity on the product label, which is the point of contact with the consumer. We must also acknowledge that industry has a major role to play, and we must tap their knowledge while formulating standards. The brand equity of FSSAI may take some time to become established and be understood as a 'seal of safety'.

Safe Food and FSSAI

Food safety becomes very important when we think of health and foods. From this angle, nutraceuticals, nutritionals, functional foods and dietetic foods become a part of FSSAI; specialty foods, including foods for special medical purposes and foods for special dietary allowances, also come under its ambit. It took the scientific panel quite a while to make this draft notification of the gazette, and FSSAI can now say that we can use many of these Nutra ingredients in many foods based on the gazette notification. It is one of the first of its kind of documents globally on nutraceuticals and nutritionals, and I wouldn't be surprised if CODEX, EFSA and FDA take it as a model to formulate their own rules and guidelines for nutraceuticals and nutritionals.

Processed Foods and FSSAI

It is not only packaged foods but also street foods, restaurant foods, airline foods, railway catered foods, community catered foods, and food served in hostels and hospitals that will all eventually come under the ambit of FSSAI regulations. If the infrastructural needs of the FSSAI are addressed by making available more technical assistance and adequate scientists, we can look forward to a healthier India through safe foods. Therefore, along with this agenda, I strongly feel FSSAI can make phenomenal contribution towards Swastha Bharat through Swachha Ahaar.

New Food Standards for India and FSSAI

When we talk of food safety, we should also look at standards, which are vital for a regulatory body. Whatever is done on paper should be applicable in the field; the right analytical methods should be available to conduct the analysis to the level to which the standards demand. Many of the analytical labs today are with FSSAI, and FSSAI is providing greater accreditation to laboratories in the country to enable them to present their analytical results in a format that is recognised globally. This makes the analysis of foods reflect what FSSAI is looking for in terms of contaminants such as chemicals, pesticides, pathogens and heavy metals, etc, for food safety for the consumer at national and global level.

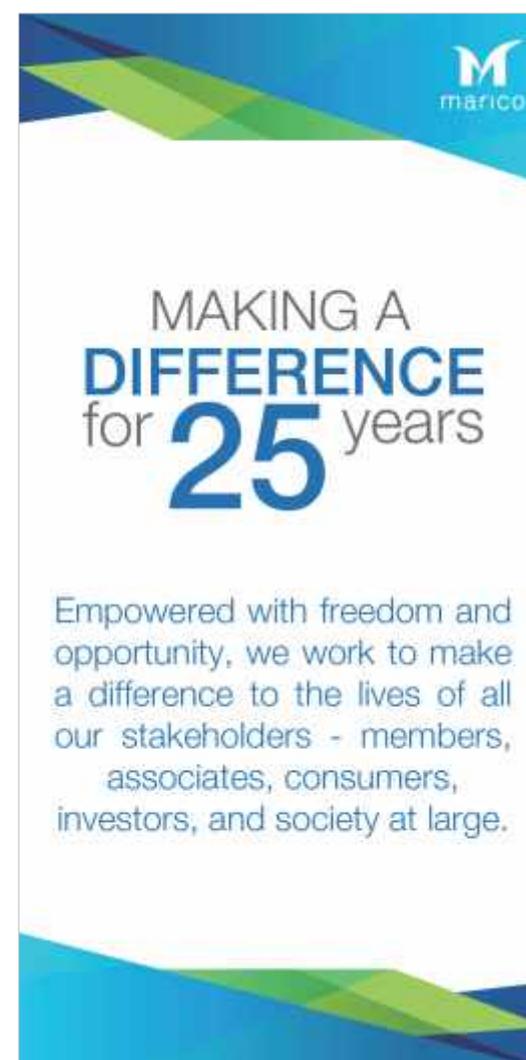
The Consumer, Industry and Policies of FSSAI

Let us look at food safety as an agenda for the consumer. The consumer looks at a package and checks whether there is a FSSAI seal on it; the presence of one is taken to mean that the food inside is safe. The confidence that the FSSAI seal inspires reflects the consumers' belief that strong science, reliable technologies in packaging and interfacing the latest of science has been employed in implementation of food safety certification for the country. It is this consumers' confidence that FSSAI should nurture and retain. After all, it takes just one packet of a wrongly approved and unsafe food item for the media to create a massive public outcry!

The Way Forward

Going forward, let India strive to establish a benchmark for the world to serve as a role model on safe food in the larger arena. It is important analyse how FSSAI can be strengthened effectively against wrong doers. Today, when one looks at guidelines and many other mandatory policies of food safety, one quotes CODEX, EFSA, FDA and many other documentations. FSSAI would do well not to adopt a 'cut and paste' approach towards any of these or any other country's regulations. Our standards should address India's environment and consumption patterns and agricultural economy. It may take a while, but it will ensure that the standards and regulations are tailored to formulate the best safety standards for our citizens, the inheritors of a 6000-year heritage of food knowledge. I am confident that FSSAI, with its efficient think tank and hard working teams, will serve perhaps with more documentation, and evolve into a reference organization for CODEX (JECFA) or EFSA or FDA. In the next 15 years,

as the Food Safety Act enters the silver jubilee year, I hope some of us will be around to help build a strong and robust FSSAI that is science friendly, industry friendly, consumer friendly and government policy friendly. May FSSAI shine as a model regulatory body on a global stage.



Food labeling and claims: Truth versus hype



Dr. B. Sesikeran

Chairperson
Scientific Panel on food labeling
and claims FSSAI

Before packaged food arrived on the scene, consumers would choose their food by seeing, touching, feeling and tasting to ensure that the product was of the desired quality. This examination became impossible when the consumer started getting packed foods. Food regulation then brought in a consumer friendly requirement that all the essential information about the food that lay within should be presented on the label of the product.

A label became a window to the product. Traditionally, a label has the name of the product, the category, quantity or net weight, details of the manufacturer, place and date of packaging, use before/ best before/ expiry date, maximum retail price, serving size or portion size and serving instruction or suggestions, etc.

With time, the consumer wanted more product details to help him make an informed choice. For example, vegetarian and non-vegetarian food items were represented by a green dot in a green square and a brown dot in a brown square respectively. Other mandatory requirements like a contact number or a website for more information and complaints was also added to the label. The consumer now also gets directions for storage and usage of the product.

Information regarding the final product is supplemented by details about what has gone into the preparation of the product - not only the major constituents, but also the additives, flavours, colours, micro-nutrients, preservatives etc.

With increasing awareness of nutrition and nutrients, the consumer is also interested in the nutrient content in the product. This information is given on the back of every pack. It mentions the major macro- and micronutrients, quantity present in 100 gm/ 100 ml, quantity per serving. .

Label Claims

If a manufacturer wants to put on the label any unique attribute of the product due to the presence or absence of an ingredient, for example 'High protein' or 'No MSG', or the presence of a beneficial ingredient in significant quantities such as 'Rich in DHA- good for brain development', he should follow the appropriate regulation before making such a nutrient content claim.

It is the regulator's responsibility to approve of this only when there is enough scientific evidence for it. Some nutrient-to-function claims could be pre-approved and available to more than one product to use on labels if they fit into the criteria. E.g. 'Rich in calcium- makes bones stronger'. In a structure-function claim the outcome should not indicate a cure or treatment or mitigation of a disease, since it would get categorised as a drug. Health claims or product specific claims need sufficient scientific evidence to demonstrate that the product or its components have been proven to give a health advantage over a specific time period.

What is adequate scientific evidence?

To substantiate the claims on the labels, only certain types of evidence are admissible. For example,

- Data from large reviews or evidence generated from meta-analysis of several peer-reviewed publications
- Well designed double blind placebo controlled randomised clinical trials in appropriate population
- Cohort studies where groups of people using a product have been followed up and have measurable health benefits

Regulation of claims also includes the advertisements and other media campaigns in order to avoid unsubstantiated and misleading claims in the mass media.

Label as a risk communicator

Non-communicable diseases like obesity, diabetes, hypertension and cardiovascular diseases have been found to be related to certain food components. Given the connection of food with lifestyle disease, food labels all over the world have to highlight the following aspects:

Total calories, total sugar including free sugar, total fat, per cent of saturated fat and salt / sodium content. While there may be several ingredients in a product, these are to be highlighted in terms of the quantity present per serving and per 100 gm/

100 ml, what per cent of the daily requirement of each of these is present in a serving. If the number of servings is more than one, then the total intake per day of all these vis-a-vis the required daily allowance needs to be mentioned. These are to be shown on the front of the pack and also in the nutrients table. Based on scientific evidence of risks associated with the consumption of these common ingredients beyond a certain level, permissible limits have been defined by international scientific bodies and regulators in other countries.

In UK, for example, regulation for a 100 gm quantity of a food states that fat less than or equal to 3 gms is low fat; between 3 and 17.5 gms is medium fat; greater than or equal to 17.5 gms is high fat. In UK, the low, medium and high are also color coded as green, yellow and red respectively for greater impact.

A similar method is followed for the remaining components like saturated fat, total sugars, total calories and salt. The label would also indicate the percentage of the recommended daily allowance of each of these, giving an option to the consumer to choose products having less of these high risk ingredients. Several European nations have opted for the single indicator

label 'Healthy Choice' if the food falls into predetermined safe limits that are based on scientific evidence and are different for different categories.

India needs to adopt a labeling method most appropriate to its diversity of population, languages, regions and a huge variation in the foods available. The ultimate goal is to keep the consumer adequately informed and help him make a choice of a healthy food.



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Setting the Standard for Analytical Protocols



Prof. Ram Rajshekharan
Director, CFTRI

Consumers have the right to choose and to expect that the food they purchase is safe. The foremost reason for analysing food is to ensure that it is of right quality and safe to consume. Safe food supply can only be achieved with effective surveillance and monitoring programmes of food products for compliance with existing food standards. Food testing laboratories play a vital role in this regard.

CSIR-CFTRI and its Contribution to Food Testing

Right from its inception in 1950, the CSIR-Central Food Technological Research Institute (CFTRI), Mysore, (a constituent laboratory of Council of Scientific and Industrial Research, New Delhi), has played a key role in using science-based systems of food analysis and quality control for improving the quality and safety of foods

The institute is currently functioning as a FSSAI notified referral food laboratory, Mysore, under the provisions of the Food Safety and Standards Act (FSSA) 2006 and Rules and Regulations 2011. As an appellate laboratory, it contributes in development and implementation of national food standards and regulations for domestic food business as well as imports.

Today, CSIR-CFTRI is a leading laboratory for scientific investigation related to food analysis, serving small, medium and large food industries, regulatory and academic organizations and society at large.

Future of Food Testing in the Next Decade

Demands of analysis and quantum of analysis to be done is set to increase in leaps and bounds in the years to come.

From the Indian perspective, we need to develop analytical protocols that will be applicable to traditional foods, specialty foods as well as specific geographically confined agri-produce that is indigenous to India. With the indigenous food industry growing fast, there is a vast array of food products laced with nutraceuticals, different food additives and products fortified with vitamins and minerals, which make health claims. These developments call for a strict regimen of validated analytical protocols using state-of-the-art instruments.

With a spate of health and wellness food products making their foray in the global market, there is a need for a science based approach toward food analysis to verify the nutrient and health claims. CSIR-CFTRI contributes in strengthening food safety evaluation by developing and refining methodologies and providing expertise to meet regulatory requirements.

Though molecular biology tools have been in vogue for quite some time, in the Indian scenario we can expect advanced molecular biology techniques being extensively used for real time detection of food borne pathogens and genetically modified organisms for food control purposes. Miniaturised equipment with facilities for multiplexing and automation

without compromising on the sensitivity, precision and accuracy of the analytical data are expected to provide manufacturers faster means of online monitoring of their processes for contaminants, pathogens, adulterants and allergens.

Importance of Laboratory Accreditation

A laboratory must be able to perform competently at the international level too. Accreditation is a hallmark of competence and quality assurance. When a laboratory is accredited, it means that it has demonstrated technical competence in a specific area of testing and the analytical data generated from the laboratory is accurate, traceable as well as reproducible. This is of paramount importance when critical decisions have to be taken by regulatory agencies.

With testing methods adopting the most cutting edge technologies and systems, regulators will have confidence in the data from an accredited laboratory and can take informed decisions. Another important beneficiary of accreditation is the manufacturer himself. When a manufacturer gets his food product analysed from an accredited laboratory, he is assured that the data generated is reliable, enabling him to comply with national and international food standards. It prevents retesting of samples and enables access to international markets.

Over the years, CSIR-CFTRI has been certified by ISO systems of 9001, 14000 and 17025:2005. The Institute is accredited with the National Accreditation Board for Testing and Calibration Laboratories (NABL), New Delhi, and there are more than 300 chemical and biological tests for foods and food products under the scope of accreditation.

Taking Stock and Looking Ahead

As we commemorate a decade of enactment of the FSSA, 2006, we need to ask ourselves, are our laboratories ready to cope up with demand during time of crises? Do we have the capability to meet future challenges in food analysis? Keeping abreast of the latest developments in the food industry and the ever-increasing array of food products is indeed a daunting analytical challenge.

To bring about uniformity and reliability in food analysis there is a need for networking amongst referral laboratories in India. CSIR-CFTRI, with more than 65 years of expertise, has the capability to link up food analysis with high science in order to bridge other laboratories to form a network of mutually co-operating laboratories.

We must work in a mission mode to bring about upgradation of infrastructural facilities and human resource development for putting India on the top of the global scenario in the area of food analysis. Support from FSSAI in terms of finance, creating capital assets and funding recurring expenditure is essential to bring ourselves to global standards.

In February 2017, CSIR-CFTRI will complete 40 years of service to the nation as a

referral laboratory. As we commemorate the 10th anniversary of the enactment of FSSA 2006 and move into the second decade, the time is ripe for CSIR-CFTRI and FSSAI to renew our partnership with greater vigor so as to achieve the ultimate aim of wholesome and safe food for all.



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OUR ETHICS
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We use it, wear it, talk it.

OUR ATTITUDE
We make it fun, simple and magical.

Codex and global consensus on food safety



Dilip Ghosh

Ambassador,
Global Harmonization Initiative

With global economic liberalisation and several free trade agreements being signed around the world, the growing international trade in agricultural commodities requires the harmonisation of quality and safety provisions to ensure safety of the consumers. The maximum permissible concentrations of chemicals in various food and feed commodities are elaborated by the Codex Committee on Pesticide Residues (CCPR) and have become voluntary international standards after adoption by the Codex Alimentarius Commission (CAC) (Kenny, 1998 FAO) based on the evaluation report of FAO/WHO Joint Meeting on Pesticide Residues (JMPR).

In addition to the elaboration of Codex maximum residue limits (MRLs), the FAO and the WHO carry out a wide range of activities including the training on evaluation and safety assessment of pesticide residues, analysis of pesticide residues and quality control of pesticide products, code of conduct in the use of pesticides, and principles of good agricultural practice (Ambrus, 2015). The International Union of Pure and Applied Chemistry (IUPAC), Commission on Pesticide Chemistry and its successors as well as the Organisation for Economic Cooperation and Development (OECD) Working Party on Chemicals, Pesticides and Biotechnology have contributed significantly to the international harmonisation of the use and safety evaluation of pesticides.

Globalisation and Food Safety

The globalisation of trade has increased food availability and diversification throughout the world, but has, at the same time, increased the health concerns due to the movement of food across continents (Kojima and Tritscher, 2015). In the last few decades, we have experienced changes in human behaviour or food production and consumption practices, which have led to changes in the occurrence of food pathogens as well as mycotoxins, and have also raised emerging problems of food safety and nutrition as well as food security.

As a result, global actions across borders to ensure food safety as integral to food and nutrition security have become more important than ever before (Global Harmonization Initiative (GHI), 2010). Recently, GHI demonstrated that the levels of world hunger, malnutrition, and food and waterborne disease are among the most critical global public health issues facing the international community (Bricher, 2010). The WHO report also supported the theory that the rapid globalisation of food trade as a worldwide trend has introduced an increased potential for contaminated food to adversely affect greater numbers of people (WHO, 2004).

Experts (GHI book) are working together to promote an integrated international food safety regulatory system and have proposed a system that must include:

- Advancement of risk analysis and resource management
- Development of scientific basis for international food safety action
- Implementation of 'horizontal' rulings among nations and reduction in barriers to trade
- Development, optimisation and ensuring easy availability of new food safety technologies, and testing and prevention strategies that reduce the public health risks of food borne disease around the globe

Role of Codex in International Food Regulation

Codex Alimentarius is, literally translated from the Latin word, a food code. It comprises a series of general and specific food safety standards that have been formulated with the objective of protecting consumer health and ensuring fair practices in the food trade. In addition, it specifies that food should not carry disease-causing organisms that could harm animals or plants in importing countries. Codex is the principal body of the Joint FAO/WHO Food Standards Programme. Currently, the Commission has 186 members (185 member countries and 1 member organization-EU), which covers 99 per cent of the world's population, and over 200 observers (international governmental organizations, non-governmental organizations and United Nations agencies).

Codex in Major Markets

Although the standards adopted by Codex are not legally binding, they carry much weight and are recognised as being based on sound science. Where appropriate, the WTO refers to Codex standards when trying to settle trade disputes involving foodstuffs or food products. The EC and USFDA are seen to be the key players in global regulation. This perception rests on the EU and US's formidable regulatory capability – its large markets, stringent regulations and substantial regulatory capacity – and numerous instances of the EU and US exercising regulatory influence beyond its borders. Two other big and stringent markets are Japan and Australia. A systematic analysis of the Imported Food Systems in these four major markets are summarised in Table 1, at the end of the article.

Conclusion

Despite substantial progress towards harmonisation of food safety regulations, rapid globalisation of the food supply, changing demographics and consumer preferences, emerging threats and new scientific developments persistently expose weaknesses and exacerbate shortcomings in a less-than-cohesive international framework. There are few global initiatives to eliminate hurdles and impediments to scientific advancement in food technology, and to promote worldwide harmonisation of food safety regulations and legislation. GHI strongly believes that developing scientific consensus on key food safety matters is imperative to sustaining the integrity of the global food supply. There is an urgent need to facilitate discussion, globally, on the scientific issues that buttress

the decisions made by individual governments and international regulatory bodies. GHI global network is working on this line of action.



Table 1. Analysis of the Imported Food Systems in 4 major markets¹

Countries	Competent authority	Legal System	Measurement of imported food control	Comments
USA	The US Food and Drug Administration (FDA), an agency of the Department of Health and Human Services, and the Food Safety Inspection Service (FSIS), an agency of the Department of Agriculture	The regulations for imported food are stated in detail in the Code of Federal Regulations, Title 21 Part 1—General Enforcement Regulations.	<ul style="list-style-type: none"> • File 'Entry Notice' • Notify FDA • Food facility to be registered • FDA reviews 'Entry Notice' 	The FDA has established a system for the recognition of accreditation bodies that accredit third-party auditors to issue certifications relating to the voluntary qualified importer program and certification for the high-risk food
EU	The Directorate General for Health and Consumers (DG SANCO) in the EC	Regulation (EC) No. 178/2002 (general food law), Regulation (EC) No. 852/2004 (food hygiene), Regulation (EC) No. 853/2004 (food hygiene on animal-originated food), Regulation (EC) No. 854/2004 (official controls on animal-originated food), Council Directive 97/78/EC (veterinary checks on imported food from third countries)	<ul style="list-style-type: none"> • Inspection based on animal and non-animal origin • Facility must be approved • The FVO conducts a prior approval process • Increasing level of inspection for certain high-risk foods 	Specially conditioned food should be imported via designated points of entry and importers should pay inspection fees, as with higher risk food not of animal origin. It should also be accompanied by the results of sampling and analysis and a health certificate signed and verified by the government of the exporting country
Japan	The Ministry of Health, Labour, and Welfare (MHLW) along with the Department of Food Safety	The Food Sanitation Law (FSL), the main legislation for controlling imported food safety	<ul style="list-style-type: none"> • Importer must report to MHLW • Inspections are conducted by designated inspection laboratory • Facility to be registered • Repeatedly imported foodstuffs can be exempted from notifications 	The MHLW's quarantine stations at ports inspect food imports along with quarantine services for humans, whereas the MAFF quarantines imported livestock and fishery products, as necessary, in order to prevent animal diseases spreading from foreign countries
Australia ²	FSANZ takes Codex standards into account with Codex Australia and APVMA	The Australian New Zealand Food Standards Code is enforced by state and territory governments and the Department of Agriculture for imported food	<ul style="list-style-type: none"> • Food entering Australia is subject to the Imported Food Control Act 1992 and the Imported Food Control Regulations 1993. • Imported food is inspected and controlled using a risk-based border inspection program by the Department of Agriculture and Water Resources. 	APVMA sets maximum residue limits (MRLs) for agricultural and veterinary chemicals, in some cases, these limits may differ from those set by Codex because Australian pests, diseases and environmental factors are different

Imported food and food safety



Arun K Bansal

Director, Innovation Technology & Quality
General Mills India Pvt. Ltd.

We are witnessing a rapid pace of globalisation, with economies becoming increasingly intertwined. People, goods and machinery are moving across countries in ever larger quantities – including a variety of food items. International food trade is currently valued at USD 200 billion a year. Importing of food into India benefits consumers by giving them more choices in cuisine, taste and nutrition – but they need to feel secure that their purchases are high quality and safe. We must encourage and support this trade, while at the same time ensuring that food safety and public health are never compromised.

Since the operationalisation of the Food Safety and Standards Act (FSSA) 2006, the food import clearance process has seen significant evolution for the benefit of trade while also ensuring food safety. Initially, the label declaration area was challenging. Importers struggled to understand and interpret the FSSAI label requirements and shipments were held up. Expert help was frequently needed. There has since been education in this regard. There is more understanding within trade and shipments are getting cleared. Our own Custom House Agent (CHA) received good training from the local food safety official. When FSSAI brought the application and clearance process online, there was considerable saving of time, effort and money for all parties. This was further streamlined by custom's single window clearance system, currently in operation in Delhi and Mumbai. The goal is to extend this to other ports.

In January 2016, FSSAI took two big steps forward. First was the publication of new Food Safety and Standards (Food Import) Regulations, 2016. The new food import regulations provided much needed clarity and detail on the various steps of the clearance process, plus provisions for rectifying some common labeling deficiencies in the customs bonded warehouse regarding name and address of importer, FSSAI logo and license number, vegetarian/non-vegetarian logo. These regulations also provided speedier clearance without the need of lab testing for some special types of imports, namely

- Food imported by diplomatic missions
- Food for the purposes of R & D
- Food for the purposes of exhibition and tasting
- Food for international sports events

It is possible to gain further efficiencies in this area. To support the government's 'Made in India' efforts, many multinational companies are doing a large amount of core R&D work in India. These efforts require us to import some material for research. Clearer guidelines on permissible quantities for testing and greater understanding on scale-up and iterative testing needs will help smooth the import process and provide further impetus for making India an even stronger hub of R&D work.

The second step forward was operationalising the concept of Pre-Arrival of Document Scrutiny (PADS). In the past, importers

were found importing non-standardised food products with labeling deficiencies. This caused rejection with financial cost to importers, loss of foreign exchange for the country, clogging of valuable space at ports and unnecessary litigation.

FSSAI took cognizance of the situation, heard the importers and enacted the PADS concept in the interest of ease of doing business in the country. Now, importers can file clearance applications with appropriate documents before the goods arrive in the country. Importers can now ship their consignment after getting clearance on the documents. This helps them avoid shipping non-standardised products, thereby saving a lot of hassles for both the importer and the regulatory body. Upon arrival of a shipment at port, clearance is quicker – an important aspect, since food is perishable and 60 per cent of the shelf-life still needs to remain in hand at the time of release of consignment from the port.

In June 2016, Food Safety and Standards (Food Products Standards and Food Additives) Amendment Regulations were operationalised. These provided enhanced clarity on permissible additives and their levels in various product categories. This will be helpful in allowing importers to ascertain which products can be imported and which cannot.

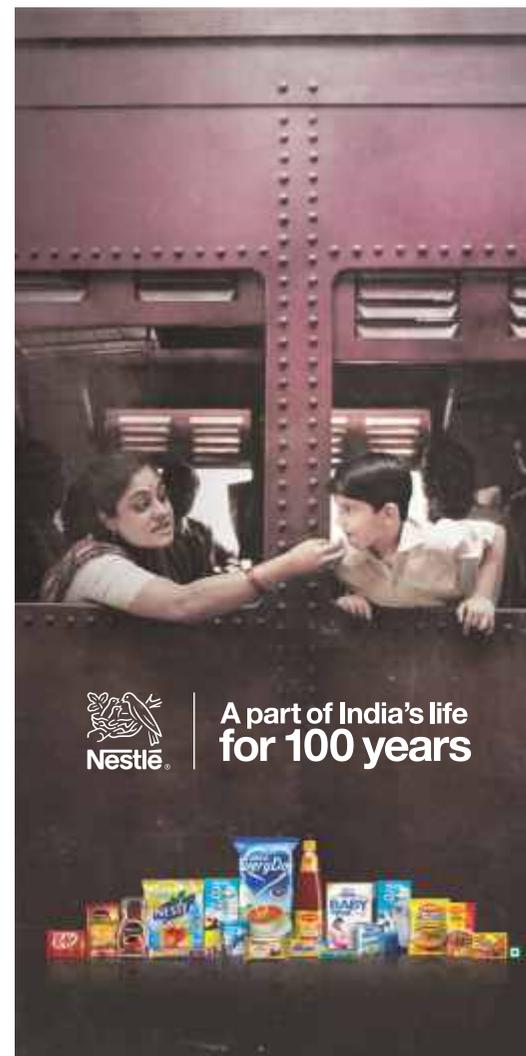
Fast Forward

Looking ahead, we could take steps to further harmonise our regulations with the Codex Alimentarius established by FAO and the World Health Organization in 1963 to develop harmonised international food standards. This will ensure protection of public health while making trade even easier.

I am delighted to see that the food authority may adopt a risk based framework and risk based inspection process for clearance of imported food articles. For this purpose, FSSAI shall profile the importer, CHAs, imported product, manufacturer of the imported product, country of origin, source country of the consignment, port of entry, compliance history and any other parameters deemed fit for profiling the risk associated with the commodity. This is already being done in other countries and will aid in promoting trade efficiency for our country. Another good option under consideration is the testing of food in qualified labs in the export countries, which will also expedite clearance from the port.

There are still plenty of opportunities for the food authority to further facilitate and streamline imports. Currently, novel foods, foods for special dietary uses, functional foods, nutraceutical and health supplements cannot be imported since there are no guidelines on how these are to be handled. Providing these guidelines will initiate trade in these commodities.

In conclusion, we can say that we have made a lot of progress in the past few years and in the spirit of continuous improvement, we can do a lot more to make it a successful initiative for all three - consumer, regulator and the importer.



Challenges before the Indian food processing industry



Sagar Kurade

CMD,
Suman Project Consultants Pvt. Ltd.
President,
All India Food Processors' Association

It is every country's duty to ensure that its citizens get safe, nutritious food. Towards this purpose, the Indian food processing industry is extensively regulated under the Food Safety and Standards Act (FSSA) 2006, through FSSAI and its state mechanism. While state FDAs have an active role in overseeing food processing businesses within their respective states, their role is in collaboration with and as per guidance provided by FSSAI at the centre. One has to consider the following to understand the need for enforcement of food regulations:

Structure of Food Industry in India

The Indian food processing Industry ranges from sophisticated state-of-art facilities to small enterprise operations producing traditional foods for the local community. In fact, the size and scalability of these processing units is also variable. While there are many large plants, the fact is that the Indian food processing sector is largely driven by small and cottage scale units with very limited resources. Although the rules and regulations of the FSSA are equally applicable for all, there will be some exceptions that deviate from quality to cut costs. Enforcement on part of FSSAI, therefore, ensures that such situations are avoided.

Street Food

There are millions of families in India who spend a substantial portion of their income on street food. Yet, street food in India

remains a major concern for food safety. Street food is often prepared and sold under unhygienic conditions with limited access to safe water, sanitary services, or garbage disposal facilities. There is a high risk of food poisoning due to microbial contamination, as well as improper use of food additives, adulteration, hygiene and environmental contamination which makes enforcement of hygiene norms imperative.

Middlemen Environment

The Indian food processing industry faces the challenge of excessive presence of middle men both in terms of sourcing of commodities as well as when it comes to distribution of finished goods. Problems occur when food passes through poor handling and storage infrastructure, including electrical outages as well as transport facilities.

India's Obligation towards World Trade

India is a signatory of the WTO as well as the Agreement on Sanitary and Phytosanitary Measures (SPS). The objective of these agreements is to facilitate trade among countries and not impose restrictive trade measures. While the need for enforcement of regulations in the food processing industry is clearly established, there are a few challenges in its path, such as:

Need for trained and knowledgeable Inspectors: India is a

very large country and proper regulations alone will not achieve the goals of the law. Since inspection and enforcement is a dependable method to prevent malpractices within the food industry, there is a need for knowledgeable and trained inspectors. The challenge lies in addressing the specific training needs of food inspectors and laboratory analysts as a high priority. After all, the reputation and integrity of the food control system depends, to a very large extent, on their interpretation, and integrity and skills of its food inspectors on ground.

Enforcement at all stages of food chain: It is impossible to provide adequate protection to the consumer by merely sampling and analysing the final product. The introduction of preventive measures at all stages of the food production and distribution chain, rather than only inspection and rejection at the final stage, makes better economic sense. This helps in identifying and preventing unsuitable products earlier along the chain. The fact is that there is an unabated use of fertilizers and pesticides at the farm level. Moreover, there is no control on the quality of irrigated water being used by farmers. Holding the processed food industry responsible without any liability on part of commodity cultivators and suppliers will make it difficult to enforce the regulation, especially among the SME sector.

Self regulation: Encouraging voluntary compliance is an accepted practice in most western countries. Steps taken for introduction of industry self regulation and joint regulation with industry bodies would certainly help in reducing litigation, faster approvals, as well as better compliance of part of food processing industry. Many among the food industry are concerned about the time and money invested towards product development. Self regulation will not only enable better intellectual property protection but will also incentivise companies to introduce innovative food products.

Funds: FSSAI currently looks to implement the FSSA through its state FDAs as well as through its four or five offices. It should be noted state FDA's budgets are under the control of state governments. For many state governments this may not be a priority in terms of budgetary allocation. Considering that there are approximately five crore food business operators in the country, it certainly becomes an uphill task to enforce the FSSA with the limited funds and manpower at the disposal of FSSAI.

Simplification and communication: Food quality enforcement is a widely shared responsibility which requires positive interaction between all stakeholders. While FSSAI has taken several steps such as online updates on its website and industry interaction prior to notifications, it is also important to ensure simplification of food laws. India is a vast country with a number of regional languages. Communication through English language may lead to mis-interpretation, especially among the less educated entrepreneurs. Communication in regional language would help create better awareness at the grassroot level.





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Food safety in the next decade: Automation holds the key



Rajesh Rathi
 Managing Director,
 Control Infotech Pvt. Ltd

With the rapid urbanisation of our populations and increasing popularity of processed food due to changing lifestyles, the challenge before us is to keep mass produced food free from a plethora of pathogens and allergens at any point in the supply chain. With more than 1.2 billion people to feed, food manufacturers in India and food regulator FSSAI face a monumental challenge to keep the food supply safe. Automation can help to a large extent by effectively solving safety related pain points not only at each stage of production, from processing to palletising, but also along the entire supply and distribution chains.

In this context, it is important to examine a few notable automation technologies for food safety that are already in practice and will progressively gather steam over the next 10 years.

Convergence of Technology

Today, Information technologies (IT) are inseparable from modern automation. Perhaps the most significant step in the direction of safe food manufacturing involves the integration of Operations Technology (OT) and Information Technology (IT) systems into unified network architecture in a food processing enterprise. This lays the foundation for seamless connectivity and greater collaboration among the many people, processes and technologies that impact product safety and quality.

With IT-OT integration, plant operators can identify opportunities to use enabling technologies, such as mobile platforms, cloud computing and Ethernet. While the IT-OT convergence provides the foundation for greater connectivity, these technologies enable easier viewing and sharing of that information across the enterprise.

Robots to the Rescue

A decade ago, 90 per cent of all manufactured robots were used in the automotive industry. Today, the food processing industry uses nearly eight per cent of all robots manufactured. Robots are in this industry not just for increasing productivity and performing repetitive tasks in difficult environmental conditions, but also in enhancing food safety. Human contact is often a source of contamination in the food processing industry, which is a prime reason for manufacturers to invest in robotics. "Robots do not sneeze or get colds. Reducing people in food plants reduces the propagation of germs and bacteria there," says an expert.

The environmental conditions in food production are often complex: both food and machinery can be the source of corrosive properties (water, acid, salt), while the ambient temperature can range from extremely hot to well below freezing. These conditions justify the use of robots in the food and beverage industry, and make it a sensible choice for improvement of food safety.

Food processing industries are also adopting new non-destructive, fast, and accurate techniques for quality and safety inspection of their products. Optical sensing and spectroscopic techniques have high potential for automated real-time quality and safety inspection of agricultural and food products.

Automated Data Logging

Increasingly, major food retailers are requiring their suppliers to be certified under one of the recognised food safety programs. Food processors have many choices regarding the food safety certification program they adopt, but they all involve manually recording information on paper, and manual analysis and reporting. Manual processes are inherently prone to human error. Automated data logging, on the other hand, provides higher sampling rates, avoids human error and eliminates data fudging.

Tracking and Tracing Technology

A Track and Trace system is a mass serialisation solution, typically for pharmaceutical and food companies, that prints a unique identifying code onto each product after it has been packaged. This enables individual products to be tracked throughout the supply chain, from production to the end consumer, and helps manufacturers significantly reduce counterfeiting by ensuring that products can be easily identified.

Radio-frequency identification (RFID) and barcodes are two common technologies used to deliver traceability. RFID has a critical role to play in supply chains. Barcoding is a cost-effective method for implementing traceability at both the item and case level. Variable data in a barcode or a numeric or alphanumeric code format can be applied to the packaging or label. The secure data can then be used as a pointer to traceability information.

Generally, track and trace systems are come along with high speed cameras mounted on production lines to inspect the printed codes on the packages, aggregate the data and upload it to the regulatory frame work in the internet cloud.

The Next Big Leap

Industry analysts predict that the Internet of Things (IoT) will be the next big technology trend, changing how everyday objects around us interact with us and each other. Essentially, the IoT provides previously 'dumb' objects the ability to monitor, communicate and interact with other technological devices (such as smart phones and PCs), and ourselves. For this, each 'thing' has a tiny sensor, microprocessor and the ability to send and receive messages wirelessly.

The IoT has the potential to dramatically improve automated monitoring and real-time control for food businesses of all sizes. It will transform the ability of managers and owners to see what is happening in their food processing plants, quickly take remedial action and deliver a full audit trail for regulators. This will boost food safety while increasing efficiency – a winning recipe for the future.



E-testing and e-tasting: the frontiers of food safety



Deepa Bhajekar
Director, d technology

The world seems to be going virtual and digital! As science progresses, researchers have been able to translate the five basic human senses into electrical signals and use this amazing technology in the area of food sensory evaluation. Apart from knowing that the food tastes fresh and good, one can simultaneously evaluate its safety for consumption. The day is not far where the common man could carry a smart sense pocket device and in an instant evaluate the quality, freshness and safety of food.

The electronic eye, electronic tongue, electronic nose, electronic fork, and food scanners are the exciting new technologies with the potential to revolutionise our relationship with food. This article explains what these electronic senses are all about, and how they can be employed in the food safety area.

Electronic eye

Computer vision is a process that includes acquisition, processing, and analysis of images. The computer system associated with computer vision consists of five elements - lighting, a camera, a computer with software, and a high-resolution monitor.

The application of an image analysis system is very broad, particularly in the food industry. It is a fast, precise, and non-invasive way of evaluating the product quality at the production step. The system enables detection of imperfections, for example, in meat structure, and the onset of food deterioration,

which are both invisible to the human eye.

Part of the image analysis system is a still camera, movie camera, or scanner; its purpose is to record a photograph of a given object. The visual aspect of products, and especially food products, is strongly linked with quality in the consumers' mind. Therefore, colour and appearance are crucial sensory parameters for products' success and need to be reliably and consistently monitored.

Applications in food industry:

- An electronic eye can evaluate the freshness of different meat types, its medical condition and the influence of storage conditions on quality to determine an expiration date based on colour and shape.
- Electronic eye helps for testing of visual quality changes in the course of time, like monitoring of best-by date, product ageing (meat greying), and storage conditions (green patches/solanine, where potatoes are stored incorrectly). It helps in monitoring/checking for presence of specific contents/foreign substances, checking the colour stability of natural colouring substances by comparison with synthetic colouring substances during time and temperature changes, and checking of colour changes in processing steps, for example, cooking, frying, deep-freezing, baking (browning of bread).

- Electronic eye can identify the presence of unwanted objects, for example, twigs and leaves to establish the relationship between storage time and product condition on the basis of colour analysis; and to identify bruising.
- Possible health risks are related to grain diseases, which often go unnoticed because they are not visible to the naked eye. Mycotoxin contamination of grain, which also includes contamination with aflatoxins, and various diseases caused by fungi and bacteria are such risks that can be detected by this device.
- Beverages are analysed by means of an electronic eye to determine the quality of orange juice on the basis of its colour and colour saturation.

Electronic tongue

The electronic tongue measures and compares tastes. It was invented by Professor Fredrik Winquist of Linköping University, Sweden. The electronic tongue not only assesses basic tastes (sweet, bitter, sour, salty, umami) but also all other gustatory components (metallic, pungent, astringent, etc). It can be used to identify, classify, and analyse multi-component mixtures in a qualitative and quantitative way by applying a fingerprint method, that is, by comparing the mixture profiles with those of standards. An electronic tongue consists of three elements - the sample-dispensing chamber, an array of sensors of different selectivities, and software for data processing. An artificial tongue is most commonly used to evaluate food and pharmaceutical products.

Applications in food industry:

- Electronic tongue has been mostly used to classify cultivars (like discrimination between onion and shallot), tomatoes on the basis of various parameters, apples, and apricots, the latter being also discriminated on the basis of storage duration.
- It was used to discriminate between freshwater and marine fish species.
- Electronic nose and tongue have been used to monitor fermentation in milk and cheese.
- It has been applied to discriminate honey on the basis of geographical and botanical origin.
- Milk from different sources, and thus also of different quality, can be mutually separated. Thus, the possibility of monitoring off-flavours in the incoming milk has been opened, helping to prevent economic loss.

- Potentiometric sensor array is very useful in the classification of different types of probiotic fermented milk during the entire shelf-life. The sensor array successfully reports changes in composition that occurred during the storage of probiotic fermented milk and is capable of tracking different rates of degradation of such milk stored at two different temperatures.

Electronic nose

An electronic nose is the analytical device used for the fast detection and identification of mixtures of odorants, which mimics the principles of operation of human smell. Specific chemical sensors are used in the device, which generates a characteristic odour profile, a so-called fingerprint, in response to the interaction with a gaseous mixture; identification of the mixture components is made by comparing the obtained odour profile with odour standards. The volatile components in the investigated sample are analysed by chemical sensors that mimic olfactory cells present in the nose. Then the signal is sent to the data recognition system, which simulates brain functions.

The electronic nose was developed in order to mimic human olfaction whose functions are a non-separate mechanism, that is, the smell or flavour is perceived as a global finger print. The instrument consists of sensor array, pattern reorganisation modules, and headspace sampling, to generate signal patterns that are used for characterising smells. The electronic nose consists of three major parts, which are the detecting system, computing system, and sample delivery system.

Applications in food industry

- The electronic senses are employed in the fish-processing industry to mainly evaluate the freshness of fish and shellfish. The electronic nose has been used to perform such analysis in sardines, shrimp and cod roe, and Atlantic salmon.
- The determination of age, geographical origin, type, and maturation level in cheeses has been done by means of an electronic nose.
- The e-nose can be used for monitoring diseases in cucumbers, paprika, and tomatoes.
- The electronic tongue and nose were both used to discriminate among olive oils on the basis of oil geographic origin and type and quality. In the case of olive oil, the conducted studies were also aimed at determining rancidity and the relationship between storage time and oil quality.
- There are over 100 different volatile organic compounds, or VOCs, detectable in decomposing fish, poultry, beef and

pork. PERES, which claims to be the world's first portable electronic nose, utilises four different sensors to detect VOCs and ammonia levels, then adjusts the data according to temperature and humidity levels in order to provide accurate feedback.

- Electronic noses have been used in monitoring of the milk microbial count, its quality and shelf-life. Some bacteria produce volatile compounds such as 3-methyl-1-butanol, ethyl butyrate, ethyl-3-methylbutanoate, ethyl hexanoate, acetaldehyde, acetic acid and ethanol, which can be used for an early detection of microbial milk spoilage and the differentiation of spoilage-causing microbial species.
- An electronic nose composed of 14 conducting polymer sensors is capable of discriminating between unspoiled milk and milk containing spoilage bacteria such as *Bacillus cereus* or *Staphylococcus aureus*, or yeasts like *Kluyveromyces lactis* or *Candida pseudotropicalis* in different concentrations.

Electrical fork

Researchers have built a device that imparts the food a salty taste, but without actually adding the salt. A battery-powered fork electrically shocks taste buds to stimulate the taste of salt, as well as sourness and different food textures! "It's a technology that allows electricity to be used as seasoning," says Hiromi Nakamura, a researcher at the University of Tokyo, who is part of the 'No Salt Restaurant'.

The handle of the fork houses a rechargeable battery and electric circuit. Users put the prongs in their mouth with food on it, while pushing a button on the handle. A soft electrical current is then sent to the tongue. Researchers warn that if you push too far with the fork, it will create an unpleasant metallic taste in the mouth. People with diabetes might be able to use the taste synthesiser to simulate sweet sensations without harming their actual blood sugar levels.

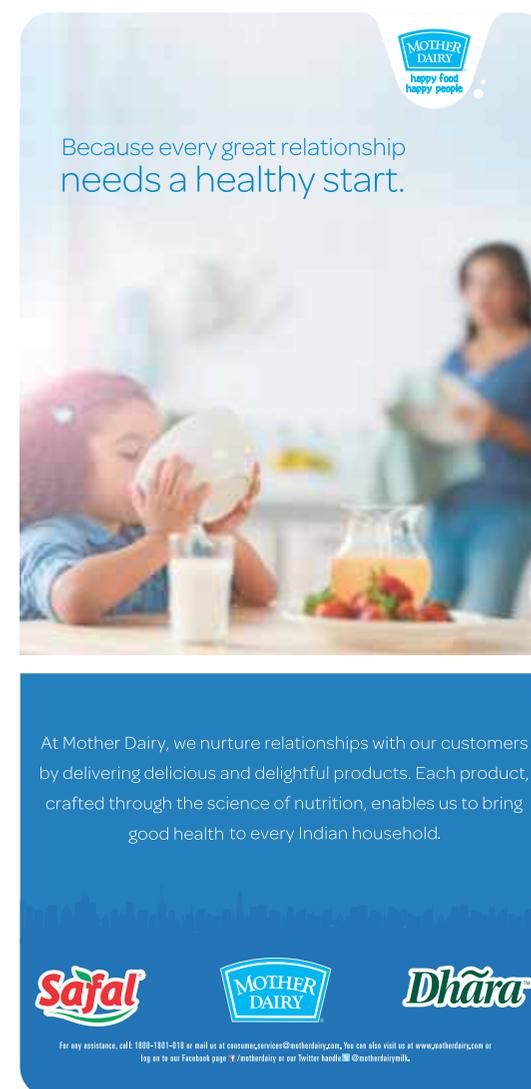
Food scanner

Food enthusiasts have created a device about the size of a car clicker to tell you what is in your food. The scanner harnesses the power of physics and chemistry to figure out everything from the sugar content of a given apple to whether or not that drink you left on the bar has been drugged. The device, called SCiO, actually uses a technology similar to the one that helps astronomers figure out the make-up of the stars - called spectroscopy.

SCiO detects the molecular signature of your food and then sends the details to your smartphone through its Bluetooth connection. SCiO's database translates that signature into nutritional content.

The device still comes with a few footnotes, though. Since the only part of the food analysed by SCiO is the illuminated part (about half an inch in diameter and 1/10th of an inch deep), it is not analysing the food as a whole and is therefore not fool proof as an allergy detective. It also does not reveal food components with concentrations less than one per cent.

The frontiers of electronic sense are just beginning to be explored. A new area that is exciting scientists is virtual satiation – do people crave food, or only the sensation that results from it? Virtual satiation could well become a reality for people finding it difficult to go on diet. Research opportunity lies in the area of developing small hand-held personal devices to deliver information about food safety, and other applications that await discovery. And we thought technology was just about smartphones!



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India's Food Regulator

FOOD SAFETY STAKEHOLDERS

Food Labs
Testing & Analysis

FBOs
Training &
Capacity Building



Centre
Standards, Risk,
Assessment,
Imports

Consumers
Awareness
Building

States
Enforcement
& Surveillance

REGULATORY STRUCTURE

NATIONAL LEVEL

Scientific Panels:

16 Panels. Scientific experts to provide inputs for vertical & horizontal standards setting.

Horizontal (8): Panels for functional foods, nutraceuticals, dietetic products and other similar products • Method of sampling and analysis • Food additives, flavourings, processing aids and materials in contact with food

- Contaminants in the food chain
- Biological hazards • Pesticides and antibiotic residues • Labelling and claims/Advertisements and genetically modified organisms and foods.

Vertical (8): Panels for fish and fisheries products • Milk & milk products • Meat & meat products, including poultry • Cereals, Pulses & Legume and their products (including Bakery) • Fruits & Vegetables and their products (including dried fruits and nuts salt, spices and condiments)

- Oils & Fats • Sweets, Confectionery, Sweeteners Sugar & Honey and Water (including flavoured water) & Beverages (alcoholic, non-alcoholic).

Authority:

- Chairperson and 22 other members.
- CEO FSSAI – Member Secretary of the Authority.

Scientific Committee:

To provide scientific opinion on multi – sectoral cross cutting issues, to food Authority.

Technical Panels:

9 for various categories of FBOs / Food categories under FSMS.

Milk & Milk Products, Slaughtering units meat processing & retail meat shops, Fruits and Vegetables products; Edible oils and fats; Cereals, pulses, bakery products; Sweets & confectionery; Ready-to-eat meals and packaged water; Food catering; Transport, storage and distribution.

Central Advisory Committee:

To ensure close cooperation between Food Authority, state level enforcement agencies & other organisations in the field of food.

- Commissioner of Food Safety from States / UT's
- Independent Members
- Ministries / Departments

Advisory Committees:

5 (Information Technology, Food Labs, Consumer Connect, Training & Certification Organisations Strengthening).

STATE LEVEL

- Food Safety Commissioner (FSC)
- Adjudicating Officers (DO) at District Level
- Designated Officers (AO) at District Level
- Food Safety Officers (FSO) at local Level.

LEGAL AND SIX PRINCIPAL REGULATIONS FRAMEWORK



India's Food Regulator

FSS Act, 2006

Consolidated all existing Acts/Orders (PFA Act, 1954; Fruit Product Order 1955; Meat Food Product Order 1973; Vegetable Oil Product (Control) Order 1947; Edible Oils Packaging (Regulation) Order 1998; Solvent Extracted Oil 1967; Milk & Milk Products Order 1992; Essential Commodities Act 1955 related to food.



Regulations notified under the FSS Act, 2006

6 Regulations in 2011: Food Products Standards and Food Additives; Prohibition and Restriction for Sale; Contaminants, Toxins and Residues; Licensing and registration; Packaging and Labeling; Referral Laboratories and Sampling.

Under Publication 2016: Food for Health Supplements, Nutraceuticals, Food for Special Dietary Uses, Foods for Special Medical Purpose, Functional Foods and Novel Food.

Standards – Vertical and Horizontal

Food Product Standards: Dairy products and analogues; Fats, Oils and Fat emulsions; Fruit & vegetables product; Cereals and cereal product; Meat and meat product; Fish and fish products; Sweets & Confectionery; Sweetening agents including Honey; Salt; Spices; Condiments and related products; Beverages (Other than Dairy and Fruits & Vegetables based) other food products and ingredients; Proprietary food; Irradiation of Food).

Substances added to food: Food Additives; Standards of Additives.

Other Key Regulations under Publication

REGULATORY MECHANISM



India's Food Regulator

1. Mandatory Licensing / Registration of all FBOs

2. Setting Standards

- i) **Product Standards** – Expert inputs from Scientific Panels & Scientific Committee

Vertical Standards – Quality Standards –Relate to Individual Products

Horizontal Standards – Safety Standards –
Apply across product categories.

- ii) **Process Standards** – Expert inputs from Technical Panels

Based on FSMS (Food Safety and Management System). Define processes to ensure food safety & hygiene for different product categories and different categories of FBO's

3. Compliance Framework

- Testing of Food Samples
- Monitoring and Surveillance
- Inspection & Audit
- Training and Awareness Generation





India's Food Regulator

REGISTRATION & LICENSING



All Food Business operators across the value chain (Manufacturer, Processing, Storage, Transport, Distribution, Import, Catering, Sale) need to be registered / licensed by FSSAI.

Licensing and Registration Authorities

- Central Licensing Authority – Designated Officer appointed by CEO, FSSAI
- State Licensing Authority - Designated Officer appointed by Commissioner of Food Safety
- Registering Authority – FSO or any official in Panchayat as notified by Commissioner of Food Safety

Licensing/ Registration Procedure

- i) Online through FLRS
- ii) Manually Through Designated Officer

Licenses issued & FBO registrations as of May 31, 2016:

- Central licenses: 26,014
- States/UTs: 7,17,999
- FBOs Registrations: 28,46,132

Fees per annum

- i) For Registration Rs.100/-
- ii) For License issued by CLA Rs. 7500/-
- iii) For License issued by State Licenses Authority Rs.5000, Rs.3000 and Rs.2000



India's Food Regulator

MONITORING FOOD IMPORTS

Online (FICS) Operational

(At Mumbai, Chennai, Kochi,
Kolkata, Tuticorin, Delhi).

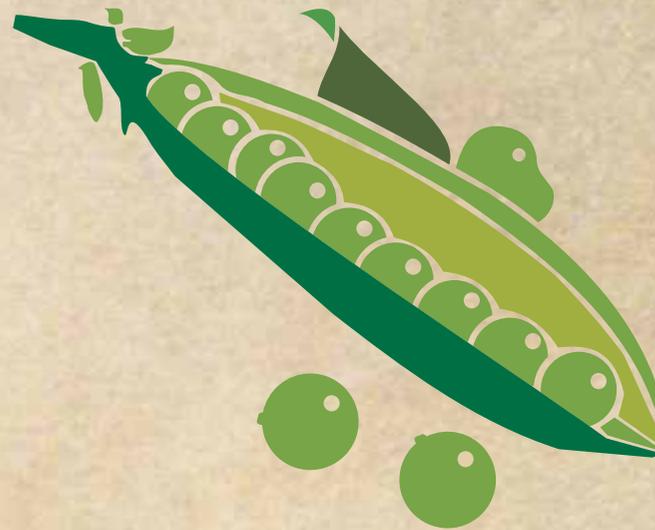
**September,
2010:**

Online FICS (Food Import
Clearance System)
Started.

**At 135 Port
Locations**

Customs officials notified as
authorised officers by FSSAI.

**A Risk Based
Import Clearing
System Introduced**

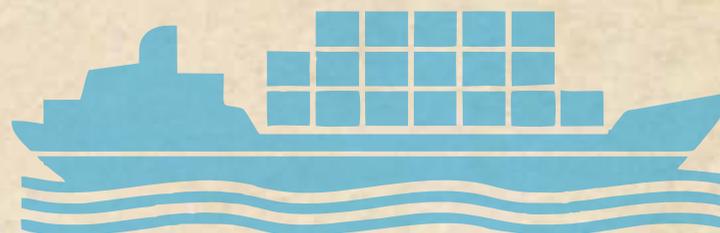


**Procedure for
Food Imports**

Simplified and aligned with the
government initiative, "Ease of
doing Business" through ICE gate
portal.

SWIFT Single Window Import Clearance

Introduced SWIFT - Single Window
Integration for Facilitation of Trade
in April 2016.





India's Food Regulator

- Risk Assessment Cell set up in FSSAI.
- FSMS Division set up in FSSAI.

2016

5th August: FSSAI established to lay down science based standards and regulate their manufacture, storage, distribution, sale and import and ensure availability of safe and wholesome food for human consumption.

FSSAI Rules and 6 major Regulations notified under the FSS Act.

2011

2008

23rd August: Food Safety and Standards (FSS) Act 2006 approved. Focus shifts from adulteration to a more holistic approach of ensuring food safety.

2006

Joint Parliamentary Committee on Pesticides Residues and Standing Committee of Parliament on Agriculture call for integrated Food law.

2004

Essential Commodities Act – Special control orders related to foodstuffs.
• PFA rules framed

1955

Prevention of Food Adulteration (PFA) Act - focus was on preventing adulteration.

1954

12th April: Government of India considers a legislations to deal with adulteration of food and drugs. Debates if legislation should be at Imperial or Provincial Level.

1916

fssai
History & Evolution

The logo for FSSAI (Food Safety and Standards Authority of India) is positioned above the title. It features the word 'fssai' in a blue, lowercase, serif font. A horizontal line is drawn above the letters 's' and 's'. A small green leaf icon is placed above the final 'i'. To the right of the text, a stylized ribbon in the Indian national flag's colors (saffron, white, and green) curves upwards and then downwards.

fssai

Milestones



FOUR ACTIONS OF COURAGE

The Indian EXPRESS

April 6, 2011

In the offing: Stringent Act to clamp down on food adulteration

The Delhi government is all set to replace the archaic Prevention of Food Adulteration (PFA) Act with the Union Food Safety and Standards Act, passed by the Parliament in 2006.

The new Act provides for a maximum punishment of life imprisonment and penalty of up to Rs 10 lakh for those involved in such illegal activities.

Sources said prosecution was rare under the PFA Act, and it reduced the government to being a mute spectator in

most cases. We will implement the law in the city. A formal decision in this regard, however, will be taken by the Cabinet soon, said Health Minister A K Walia. As per the provisions of the law, adulterers may face six months to life imprisonment depending on the nature of offence. When the new Act is implemented, adulteration will meet heavy

THE HINDU

INDIA'S NATIONAL NEWSPAPER SINCE 1878

05.08.2011

Food Safety Act takes effect from today

Initiating a new era in food safety, the Food Safety and Standards Act of 2006 will come into force across the country

making it at par with the standards. It will ensure quality of food for the consumer and prevent the sale of adulterated and mislabeled food items. The Act will also penalise misleading advertisement by those in

the food and beverage industry. The Food Safety and Standards Authority of India (FSSAI), established

under the overarching legislation, will lay down science based standards for food items and regulate their manufacture, storage, distribution, sale and import to ensure safety, wholesomeness and wholesome consumption. As per the Act, the Union Territory Administrators and Commissioners will be empowered to do so by the

THE TIMES OF INDIA

December 29, 2006

Government takes on food adulteration menace

MUMBAI: Dinner parties, even at reputed restaurants, are known to go horribly wrong, landing revellers in hospitals with upset stomachs.

According to a source in the Maharashtra Food and Drug Administration, the new Food Safety and Standards Act, 2006, hopes to change this. The Act will include "heavy punishment to the tune of lakhs" for defaulting restaurants. AM Khan, principal secretary, medical education and

drugs department, Maharashtra, adds: "The approach of the new Act is to try and differentiate between serious and less-serious offences."

But it will be while before the Act comes into effect. "That's because while we have piloted and drafted the bill, it is not yet decided which ministry will implement it," says Surendra Singh, assistant director at Central ministry of food processing industries. Besides, Food Authority has to be established for the purpose.

The Telegraph

OUR CORRESPONDENT

Bid to step up food safety measures

April 15, 2013

New Delhi, April 14 2013: The Food Safety and Standards Authority of India (FSSAI) plans to register and issue licences to 55 million food and beverage companies, manufacturers and vendors, including those in the unorganised sector, by February 2014.

"The exercise is part of the organisation's efforts to harmonise food safety standards," FSSAI chairman K Chandramouli said on the sidelines of an Indian Beverage Association (IBA) seminar.

The FSSAI has also sought Rs 5,000 crore from the government in the Twelfth Five-Year Plan (2012-17) to set up food safety laboratories. The proposal is awaiting clearance.

"We do not have food and safety standards in the country which deal with food products across the spectrum. For this, we need to get the state governments and other stakeholders on board," he added.

The first meeting of the FSSAI was held at its headquarters at FDA Bhavan, New Delhi, on December 19, 2008. It was addressed by FSSAI's first Chairperson, Mr. P.I. Suvrathan, and attended by CEO and Member Secretary Mr. G. Balachandran and 17 members of the Authority.



FSSAI's First Brochure presenting highlights of the Food Safety and Standards Act, 2006 and the role and responsibility of the Authority.





The first meeting of the FSSAI's CAC (Central Advisory Committee) was held on January 19, 2010.



Launch of Food Licensing and Registration System: The FSSAI's Food Licensing & Registration System (FBO - LRS) was launched on December 28, 2011.



State Awareness Programme, Tamil Nadu: A Mass Contact Awareness Campaign was undertaken by Consumer Association of India, Chennai, on behalf of FSSAI in five districts of Tamil Nadu during 2012-13 as a pilot project to make consumers, Food Business Operators and other stakeholders aware about the FSS Act, rules and regulations, practices on food safety and hygiene. The campaign touched upon the common adulterants in food and methods to detect them.





In February, 2014, India hosted and chaired the first session of Committee on Spices and Culinary Herbs (CCSCH) at Kochi. The meeting was attended by 101 delegates from 40 member countries affiliated to CODEX, six international organisations, the World Health Organisation (WHO) and one member organisation.



A Mass Contact Activation Programme (MCAP) was inaugurated in eight districts of Uttar Pradesh on January 12, 2015 at the DDU State Institute of Rural Development (SIRD), Lucknow. This programme was conducted by the Deen Dayal Upadhyaya State Institute of Rural Development, Govt. of Uttar Pradesh on behalf of the FSSAI.



USFDA Technical Session:

Mr. Bimal Kumar Dubey, Director (Imports / IC / Vigilance), addressed a Technical Symposium organised by FSSAI's International Cooperation (IC) Division in collaboration with the U.S. Food and Drug Administration (USFDA) in September, 2015. The objective of the symposium was to deepen the mutual understanding on the science side of food safety through dialogue, trust and cooperation.





MoU with Germany: On October 5, 2015, a Joint Statement of Intent (JSI) was signed between FSSAI and the Federal Office of Consumer Protection and Food Safety (BVL) and Federal Institute for Risk Assessment (BfR), Germany on Cooperation in Food Safety.



An Orientation Training Programme of 37 Designated Officers (DOs) from Bihar, Mizoram, Manipur, Telangana and Chhattisgarh was held during June 9-11, 2016, at the **State Health Society Bihar Campus, Patna.**



A Training Programme of Food Safety Officers was held during June 20-24, 2016, at the Zonal Railway Training Institute, **Udaipur.**





Stringing along with CHIFSS: On June 24, 2016, FSSAI's CEO, Mr. Pawan Agarwal signed an MOU with CHIFSS (CII-HUL Initiative on Food Safety Sciences) to promote science-based food safety. The objective was to strengthen consumer safety and enable a science-based innovation environment.



MOU WITH ASCI: The FSSAI signed an MOU with the Advertisement Standards Council of India (ASCI) on June 28, 2016, to increase monitoring on misleading advertisements in the food and beverages sector. This was done to safeguard the health and well being of millions of consumers.





FSSAI CEO, Mr. Pawan Agarwal addressing the **Workshop on Scientific Cooperation - Framework for Food Safety** at New Delhi on July 12, 2016 attended by more than 100 scientists and researchers across the country



On July 14, 2016, FSSAI launched its new initiative, **FSKAN (Food Safety Knowledge Assimilation Network)**, which would serve as a framework for scientific cooperation in the area of food safety and nutrition. FSKAN was launched during the Workshop on Scientific Cooperation - Framework for Food Safety.



Message from Japan



India's Laudable Move towards Harmonisation with Codex

It is my great pleasure to express my views on the current and future evolution of food laws and food industry development on the occasion of commemorating the 10th anniversary of the Food Safety and Standards Act.

Needless to say, ensuring safety is one of the most pivotal issues in India as well as other countries, and this importance would further increase with future economic and social development in this country.

In September 2014, India's Prime Minister Narendra Modi and Japan's Prime Minister Shinzo Abe signed a joint statement in which, among other things, the importance of the two countries' cooperation in the area of agriculture and food was highlighted. This cooperation envisages establishing a food value chain through public and private partnership of the two countries, and ensuring food safety can be an imperative part of this bilateral cooperation. As an example of this collaboration, Japan is, based on its experience, offering bilateral cooperation through ODA (Official Development Assistance), aiming at enhancing the capability of human resources engaged in both administration and technical affairs sectors.

I would like to mention one of the most recent and remarkable movements in India in this context. Under the leadership of Mr. Ashish Bahuguna (Chairperson of FSSAI) and Mr. Pawan Agarwal (CEO of FSSAI), and with the efforts of concerned officials in the Government of India, food relevant laws, regulations and operations are steadily and firmly moving forward to the harmonisation with CODEX,

which is the international food standards, guidelines and codes of practice for food. I strongly believe that this movement led by FSSAI greatly ensures both food safety with high quality and sound promotion of food Industry.

I sincerely look forward to continuous initiative by FSSAI in this regard and working closely with this country and FSSAI for providing safe and high quality foods to Indian people, and also strengthening of Japan's relationship with India.

Embassy of Japan in India

Tomoyuki KUWAHARADA (First Secretary)



India's Food Regulator

**Ministry of Micro, Small
and Medium Enterprises**
(Food industry stakeholders)

**Department of Agriculture
and Cooperation**
(Monitoring pesticides residue,
organic foods)

Ministry of Commerce
(Exports, Food trade)

**Ministry of Consumer Affairs,
Food and Public Distribution**
(Consumer connect and Legal Metrology)

Ministry of Food Processing Industry
(Food industry stakeholders)

**Department of
Personnel and Training**
(Government department canteens)



Food Safety - A Shared Responsibility



**Ministry of Animal Husbandry
Dairying and Fisheries**
(Meat, meat products, fish and dairy)

**Ministry of Women
and Child Development**
(Fortification of food, nutritional supplements)

**Ministry of Skill Development
and Entrepreneurship**
(Training and capacity building)

Ministry of Environment and Forests
(GM Foods regulation, non-degradable packaging)

Ministry of Human Resource Development
(Mid-Day Meal Programme, Nutrition in Schools)

Ministry of Railways
(Railway catering establishments)

Ministry of Panchayati Raj
(Role of Panchayats in food safety)

Ministry of Civil Aviation
(Airport catering, in-flight catering)

Several other Ministries also...





Section II

Nutrition in Focus

India's globalising food basket and nutritional dilemmas



Neelanjana Singh
President,
Indian Dietetics Association,
Delhi Chapter

Writing on a subject as diverse and inexhaustible as 'Nutrition in India' is a daunting task. For one, nutrition is a dynamic science; we continue to learn and discover facets of this science each day. As an unfortunate consequence of that, nutritionists have acquired the reputation of flip flopping on their advice. Be it the case of ghee, butter, milk or eggs, our verdict has been changing from time to time. The one new guiding thought in modern nutrition says that instead of looking at single nutrients and their impact on health, one should look at a combination of nutrients and other dietary factors and their influence on wellbeing.

The challenge is to chart a balance between scientific wisdom and the wealth of India's traditional knowledge. We have begun to do this by accepting, for instance, the value of cow's ghee, which had been demonised for decades. We now know that more than one third of the fat in ghee is MUFA, which is one of the ingredients that gives olive oil its value! Moreover, unlike other foods rich in saturated fat, not all the saturated fats in ghee raise blood cholesterol.

Traditional Indian wisdom in the context of nutrition has enormous value and is quite rational. For instance, a saying whose opening line goes "Sawan harrai, bhadon tit" prescribes in poetry form specific preventive foods in the diet, month by month. In translation it says in the month of Saawan one must

eat Haritaki or Harad (a powerful antioxidant and antimicrobial agent), in the month of Bhaadra one must have bitter foods like karela, green leafy vegetables, neem, green tea (revs up the metabolism besides a host of other benefits). Ayurveda is as much about diet and nutrition as it is about medicine.

It does not require too much insight to observe that modern India is in a period of transition as far as food habits, preferences and cooking practices are concerned. The way we eat and shop for food is also changing and most of this can be attributed to our dependence on technology. The factors responsible for this transition are primarily linked with the socio-economic, epidemiological and demographic changes happening in our country.

In this context I would like to highlight some of significant events in the sphere of nutrition, in recent times.

There is a definite focus on food safety in the past couple of years. It is becoming evident to most people that no matter how nutritious the food is, if it is not safe for consumption, the result can be quite damaging. The Maggi episode did help bring to light the importance of food safety in general. FSSAI, of course, has been playing a crucial role in protecting consumers from such risks.

The updated version of Dietary Guidelines for Indians (DGI) was released by the National Institute of Nutrition just a couple of

months ago. Such an update was urgently required as India is undergoing considerable socio-economic transformation. The way we are eating today is very different from what the traditional Indian diet used to be. With the availability of a wide array of ready-to-eat foods and with the aggressive marketing of convenience foods, people's perception of what is healthy is actually quite warped.

In my practice, I come across innumerable instances of how people are lured into eating highly processed foods thinking that they are healthy. It is also quite common to find health claims such as 'healthy & fat free' on the labels of foodstuff that are rather high in sugar and salt content, which is just as bad as the food containing too much fat, if not worse.

The survey of NFHS-3 and the National Monitoring Bureau indicate clearly that there is a problem of awareness and information deficit even amongst the affluent sections of our society where food is in abundance. This is why India is burdened with the dual problem of both under-nutrition and over-nutrition, both being forms of malnutrition. The aggressive and sometimes misleading marketing techniques only add to these woes.

“Once again, the dissemination of correct information in an effective manner can mend many of these faulty practices that are to blame for this alarming statistic.”

To give an example, most people would assume that a fruit-based drink would be one that promotes health. This is far from the truth as fruit juices themselves may not be as healthy as one would imagine. Most of the fruit fiber is removed during the juicing process and extra sugar is usually added to these packaged drinks. The so-called fruit drinks, which are quite different from the juices, contain only a negligible amount of fruit in it. As people are becoming increasingly health conscious, the carbonated beverages have started adding fruit juice/lemon extract (the usual amount added ranges between 5-10 per cent) to the beverage. The mere addition of such foods cannot convert these to healthy drinks. After all, one continues to imbibe almost 10tsp of sugar with every soft drink consumed.

Another interesting observation is that the experts and the

consumers could very well disagree on what is deemed a healthy food. In the case of certain foods, there is clear-cut evidence for or against it, but there is a growing category of foods that remains ambiguous. It is in this grey area that people need guidance and the decoding of the ingredients to understand their nutritive worth.

For instance, a bowl of fresh yogurt without doubt is a healthy food but when dollops of sugar are added to it to convert it to frozen yogurt (minus the live beneficial bacteria in it), it can no longer be termed as a health food. The same goes for popcorn, which can make for a great snack but when it is pre-packaged and loaded with trans-fats (unhealthy fats), what good can it do? The updated version of the DGI manual can go a long way in serving as a valuable guide for anyone seeking accurate information on healthy eating.

Here's a piece of good news, though. Double fortified salt (with iodine and iron) is now available in India, allowing us to hope that through this we can conquer the micronutrient deficiencies that prevail. The prevalence of anemia in women in the reproductive years is over 50 per cent, and more than 70 per cent of the children between the ages of six months and 36 months suffer from the same problem.

Once again, the dissemination of correct information in an effective manner can mend many of these faulty practices that are to blame for this alarming statistic. For instance, many people are unaware that Vitamin C foods increase the absorption of iron from food, thus enhancing its availability to the body. Therefore, doing something as simple as adding lime or lemon juice to iron-rich foods (the plant-based ones in particular) can increase the availability of iron to the human body.

On the other hand, if tea is taken with a meal, the reverse happens and iron absorption is depressed. Thus, the common Indian practice of serving tea after meals is not such a great idea! Cooking certain foods in iron utensils can contribute to the alleviation of anemia in our vulnerable population. Therefore, my advice is that you ditch the fancy cooking-ware and go back to basic iron cooking utensils.

To add to India's woes is the growing problem of obesity. More than 22 per cent of adults are either overweight or obese. We have the dubious distinction of being the diabetes capital of the world. Our genetic makeup makes us more vulnerable to cardiovascular diseases. Ironically, we are plagued by Vitamin D

deficiency, which is astonishing in a country that has abundant sunlight.

In an effort to curb the menace of obesity and diabetes, the 'Fat Tax' has been imposed in one of the states in India. I am not very certain if such a tax would blunt the incidence and impact of obesity and diabetes in a significant way. After all, the other 'demons' such as sugars in their various avatars (HFCS being one of the major offenders) and processed foods should also come under scrutiny. The problem really is that a burger bun (not by any means of great nutritive worth) has added HFCS, making it super unhealthy. The levy of the Fat Tax has surely raised awareness, though, and brought the spotlight on some of the unhealthy foods.

"Problems are only opportunities with thorns on them," a quote by Hugh Miller, most appropriately conveys what I really believe in the context of the current food and nutrition scenario in India. We as nutritionists can individually and collectively make a difference to the health of our nation by just the simple act of dissemination of sensible, accurate and practical solutions that can be implemented on the plate.



Promote healthy foods through multi-pronged approach



Sunetra Roday

Nutritionist and former Principal,
MSIHMCT, Pune

Thanks to advances in technology, Indians have witnessed major changes in lifestyle and food choices over the past few decades. The ever-expanding processing, packaging and transport industry now offers us unlimited choices of food all year round. But technology has its dark side. The mouth watering delicacies that we indulge in are highly processed, stripped of fibre and valuable nutrients, and high in sugar, trans fats and salt.

Dismayingly, despite technological progress and ambitious government initiatives, the problem of malnutrition still persists in India. Improvement in the overall economy and purchasing power (though unevenly distributed) has not led to the expected levels of improvement in the nutritional status of Indians. Developing countries like India have a unique problem of a 'double burden', wherein we have obesity at one end of the spectrum, and malnutrition and under-weight at the other. The economic divide has made the picture bleaker, and the problem more pronounced, especially for the vulnerable age groups.

Eating one's way to good health!

Every infant has the right to begin life with a full-term healthy body and receive the advantage of mother's milk. For this to happen, every would-be mother should take special care of her own nutritional needs.

A lactating mother requires extra food to produce milk of good quality and quantity and to safeguard her own health. Human milk is the natural food for the infant and has many benefits. The mother should exclusively nurse the baby for six months, after which suitable weaning foods should be introduced, and she should continue breastfeeding for two years. During lactation, ample fluids should be consumed along with a diet rich in energy, proteins, vitamins, minerals and fibre.

Milk is deficient in iron, Vitamin C and Vitamin D. Supplementary foods are introduced at six months along with water. Special supplements suitable for infants should be prepared under hygienic conditions and introduced one at a time. Egg yolk, strained cereals like ragi, soft khichdi, soup, rice and dal, pureed vegetables and stewed fruit are some healthy options for infants.

Preschool is a period of rapid growth with high energy needs. Good quality proteins from cereal pulse combinations and milk proteins should be provided. Ample fruits and vegetables, fats and carbohydrates should be included.

During adolescence, the diet plays a crucial role in promoting growth and the RDA for all nutrients is high. Food habits may change drastically because of peer pressure, need to maintain one's figure and tackle skin problems. Extreme figure-consciousness can lead to anaemia, or even eating disorders like anorexia nervosa and bulimia.

New age deficiencies Vitamin D, Calcium and Vitamin B12, which are becoming increasingly common, are a cause for concern. Vitamin D deficiency is more pronounced in all age groups because of practically no exposure to sunlight and liberal use of sunscreens, which further aggravates the problem.

The old and infirm need special dietary care. Food should be light, easy to chew and digest, freshly prepared and attractively served. Good quality protein, calcium, Vitamin A, Vitamin C and iron rich foods should be included. Ample fluids and fibre -rich foods help prevent constipation. Gas forming foods and strongly flavoured vegetables like such as Bengal gram, cauliflower and cabbage should be avoided for this group.

The Task Ahead

The Government of India is aware of the gravity of the problem and has initiated many schemes to solve it, like the Right to Food Campaign, Food security Act, Mid-day meal scheme, among others. The Ministry of Women and Child Development has strengthened its ICDS programme through ISSNIP to ensure greater focus on mothers, infants and young children and on improving nutrition outcomes. A longer maternity leave has been proposed. Yet, nutritional deficiencies like Protein Energy Malnutrition (PEM), Vitamin A Deficiency (VAD), Iron Deficiency Anaemia (IDA), Iodine Deficiency Disease (IDD), Vitamin D deficiency, Calcium deficiency, Vitamin B12 and other B-complex deficiencies need to be specifically addressed.

The task of improving the nutritional status of India's people will require the following actions from authorities and consumers alike:

- Strengthen the existing nutrition programmes of the government to help break the vicious cycle of malnutrition and infection.
- Read food labels and avoid consuming food high in trans fats, sugar and salt and low in dietary fibre and complex carbohydrates.
- Teach children the importance of healthy foods, food safety and physical activity.
- Include ample fresh vegetables and fruit in the natural form, avoid processed foods.
- Improve the protein quality of your meal by combining cereals and pulses, or adding some animal protein.
- Prefer low cost, nutritious, locally grown, seasonal produce especially green leafy vegetables like Brahmi and seeds like sesame, niger, flax and garden cress seeds.
- Promote traditional snacks like vegetable upma, groundnut poha, idli/sambhar, misal pav, ragda pattice, chiwda, murukku instead of pizzas, burgers and fries.
- Avoid junk foods and fast foods.





Ten @ Ten

5 **C4SNF**
Corporates for Safe & Nutritious Food: FSSAI has been engaging Corporates through its initiative, "Food Safety is a Shared Responsibility."



4 **SERVE SAFE**
Food Safety in Catering: FSSAI plans to initiate project 'Serve Safe' in restaurants to promote food safety, hygiene and high standards in restaurants and catering establishments.



3 **SNF@WORKPLACE**
Safe and Nutritious Food @ Workplace: FSSAI aims to initiate programmes for food safety at the workplace to achieve food hygiene, safety and high standards.



2 **SNF@SCHOOL**
Safe and Nutritious Food @ School
Create awareness on food safety among children at school and inculcate safe food habits that will last a lifetime.



1 **SNF@HOME**
Safe and Nutritious Food@Home: In India, most people still eat home-cooked food. Thus, lessons around food safety and healthy nutrition should begin at home. FSSAI is bringing out a 'Green Book – A Companion on Safe and Nutritious Food @ Home'.



10th ANNIVERSARY



India's Food Regulator



6

C2C

Connect to Citizens

FSSAI has launched a central theme to coalesce all its activities and initiatives to enhance citizens' confidence on a safe food culture.



7

DIET 4 LIFE

Diet for Children With Metabolic Disorders: An FSSAI initiative for the nutritional needs of children with metabolic disorders.



8

FoSTaC

Food Safety Training and Certification:

Ensuring food safety has become a shared responsibility of Food Safety Regulators and Food Business Operators as well.



9

IFS.QuickAccess

Integrated Food Standards: An FSSAI initiative to ensure integrated food standards for easy and effective implementation and monitoring.



10

SOFTeL

Strengthen Food Testing Laboratories:

FSSAI has formulated a scheme to strengthen the food testing infrastructure in the country.



10 NEW INITIATIVES





Section III

FBOs: Issues & Perspectives



Food Safety: Creating a new ecosystem



Sangeeta Pendurkar

Managing Director,
Kellogg India Pvt Ltd.

The last decade saw India making the much desired transition from a regime focused on 'prevention of food adulteration' to a paradigm of 'ensuring food safety', while strengthening our resolve to gradually alleviate malnutrition. In addition to managing the transformation, we made efforts to strengthen and to further build on the essential blocks of the food chain. Appreciable efforts have been made to consolidate the existing multiple regulations while focusing on consumer safety, science based standards, transparency, consultation and self-compliance.

The journey so far has had its share of ups and downs, but what stands out is that it has been a journey of learning and innovation. This decade also saw the transformation and further empowering of the 'consumer', enabled to a large extent by the explosion of social media and easy access to the internet. The consumers now have the world at their fingertips, have access to information they seek, they share knowledge and experiences and they demand choices, quality, convenience, and above all a value proposition that provides highest perceived returns.

The new consumption economy expects the industry to deliver consistently on quality, innovation and adherence to highest standards. So what is next? Regulatory systems are not static; they evolve in response to the needs of the society and technological innovations. It is the collective responsibility of the regulators and the industry to respond to and adopt changes

accordingly. The foundation of a mature regulatory system is based on laying down science and consumption data based standards coupled with strong rigor around enforcement of the standards, whether they relate to the quality, nutrition, safety or advertisements.

We have made huge strides in enforcement but need to continue to strengthen a mechanism that:

- Shuns ambiguity and promotes a level playing field
- Offers a high degree of clarity and certainty
- Fosters innovation
- Is based on transparency and stakeholder consultative processes
- Enables a collaborative environment for the regulators and the industry work together to drive the outcome of high quality, safe, nutritious and accessible food

The Indian food industry is currently valued at around USD 40 billion and is expected to grow at a CAGR of 11 per cent. Consumers are upgrading frequently and love to experiment. Awareness around wellness has grown and so has the demand for food options that cater to these requirements. This challenge presents us with an opportunity to create a truly integrated stakeholder framework, starting with the first leg of the food chain i.e. primary producers.

We cannot exclude this important stakeholder in our journey to achieve food safety and wellness objectives. It is the need of the hour to develop a strategic and integrated multi-dimensional intervention that covers the entire spectrum from the farming practices, animal husbandry practices, practices around use of fertilizers and pesticides, post-harvest processing, packaging and storage following GMP and GHP norms and distribution to consumers.

It's time to move to quality and safety by design at farm level, rather than building quality control programs only at the end of the food chain. This calls for a collaborative effort, regulations alone cannot help us succeed. Unlocking the actual potential of the industry will require strong symbiotic relation amongst the stakeholders of the food eco-system.

“ We live and operate in a truly global ecosystem that requires organizations to be innovative, agile and socially responsible to be able to deliver value to their stakeholders and consumers. ”

Consistent government policies across relevant ministries, transparent stakeholder engagement, strong public private partnership and tracking and monitoring of deployment will be critical. The Indian food industry is but a natural partner of the 'Make in India' initiative, leveraging our traditional knowledge with modern scientific and technological innovations. Our regulatory system can be a key catalyst to fuel this partnership by strengthening awareness about food safety and consumer education initiatives and call out projects under Skill India program to build competency in the area of food safety and wellness of the consumers.

Safety, especially food safety, is a mindset that needs to be inculcated perhaps as early as the secondary education levels. The most important enabler for us in this journey is building competent resources to understand and manage food safety across the value chain. The stakeholders cannot be just the regulators, scientists, FBOs, primary producers and distributors, but should include service providers like equipment vendors, private laboratories and the certifying bodies.

We live and operate in a truly global ecosystem that requires organizations to be innovative, agile and socially responsible to be able to deliver value to their stakeholders and consumers. Innovations in technology, science and engineering have led to new and improved food standards (both for quality and safety), development of functional foods and new generation of nutritional solutions to fulfill demands of various demographics and special health needs. Indeed, these are exciting times for the food industry.

A vision of food safety at a holistic level needs a realistic and shared purpose or intent by all stakeholders. A puzzle can only be solved when all the pieces come

together and fit in a certain order. This calls for an expanded framework that includes all key players of the game, thereby safe guarding the consumer's health and well-being. A continuing benchmarking exercise to global best practices in food safety regulations will facilitate continuous innovations and improvements in food safety and standards. To conclude, we are at the cusp of a unique opportunity to forge an eco-system that can ensure comprehensive food safety for the Indian consumer, an opportunity that we must seize with all earnest.



From product-based to risk-based inspection



Suresh Narayanan

Chairman & Managing Director
Nestlé India Ltd.

I would like to convey my best wishes to the Food Safety and Standards Authority of India (FSSAI) for the completion of a successful decade of the FSSA. The FSSAI has done a commendable job in the area of food safety.

FSSAI, as a nodal regulatory body, integrated different regulations under different ministries into one – Food Safety and Standards Rules and Regulations. Taking further positive steps, FSSAI has made great efforts to harmonise various vertical and horizontal standards with Codex and other international best practices, thus providing a level playing field for import and export of food products. The recent release of the notice on food additives, which is aligned with Codex provisions, has been highly appreciated by the industry as it will facilitate innovation and the industry will be able to offer new innovative and safe products to the consumers.

Consumer trust and satisfaction are the most important assets of any food company, and food safety constitutes one of the most fundamental aspects of any food operation. Food safety and quality have been the cornerstone of Nestlé's philosophy since the very beginning. Nestlé Food Safety Management encompasses the whole supply chain, from farm to fork. We have stringent, inbuilt controls to ensure safety at every step of the value chain. We never compromise on the safety of our products and comply with all applicable regulations and guidelines pertaining to food safety and quality.

Opportunities in Agro-processing

Agriculture is the backbone of the Indian economy. We see a huge opportunity for India to be a key global player in the processing of agricultural commodities – a development that will boost incomes and opportunities for the agricultural and the farming community. FSSAI plays a pivotal role in establishing policies on food safety. When drawing up policies on food safety and the acceptable level of risk, the decisions have to be based on sound scientific advice. Therefore, it is imperative to continue bringing improvements in the current food safety scenario to enable development of a science based regulatory environment in line with international best practices, and to accelerate the production of safe food. The initiative taken by FSSAI in conducting training and awareness programs for street food vendors and restaurant staff on good hygiene practices and basic food safety is an excellent way of ensuring that safe food reaches all sections of consumers.

Importance of risk communication

While food safety will continue to be the primary responsibility of agricultural producers, manufacturers and regulators, it is essential for consumers to understand the importance of safe food too. Food safety risk communication is very important for the protection of public health. For this, it is necessary to provide

them the input required to make informed decisions. We must develop appropriate mechanisms for this.

The industry looks forward to joining hands with the regulator to support a robust and stringent self-regulation system. This calls for a more systematic science based surveillance plan. It should be supported by state-of-the-art testing facilities using latest, internationally recognised analytical methods at the NABL accredited laboratories. This has also been initiated by FSSAI and I would like to compliment them on the ongoing process of upgrading laboratories. Setting up of proficiency centers and conducting yearly proficiency tests will go a long way in creating accuracy of results and will enhance the credibility of the laboratories. As a company, we would like to play a proactive role and would be happy to help establish food safety institutes.

There may be a need to shift focus from mere product-based inspection to risk-based inspection.

FSSAI has initiated the development of a National Food Control System (NFCS). The principal objective of a National Food Control System is to protect the health of consumers and ensure fair practices in food trade. NFCS is mandated to ensure that official controls are carried out regularly, based upon risk and with an appropriate frequency. The introduction of control measures at all stages of the food production and distribution chain, rather than only inspection and rejection at the final stage would result in a better safety regime.

There may be a need to shift focus from mere product-based inspection to risk-based inspection. We should look for more innovative approaches to better prioritise, take account of the overall knowledge base and allow for rapid integration of new scientific developments. The recent formation of nine panels for Food Safety Management System (FSMS) by FSSAI is a welcome step in this regard.

We hope for continued collaborative engagement of FSSAI with Food Business Operators at multiple levels so that the views of the industry are heard and taken into consideration, and we are able to contribute to the common commitment of providing safe food for all.



Refreshing India



The Indian Beverage Association (IBA) is the trade association that represents India's Non-alcoholic Ready To Drink (NARTD) industry. IBA was founded in 2010 to provide a unified entity to several beverage companies, franchise bottlers and support industries. Together, they bring to market hundreds of brands, flavors and packages, including regular and diet soft drinks, packaged drinking water, 100% juice & juice drinks, milk drinks, sports drinks, energy drinks and ready-to-drink teas.

IBA Members



Food Safety - A shared responsibility



Siraj Chaudhry
Chairman, Cargill India

Besides tickling the taste buds, good food needs to be wholesome and above all, safe to eat. Unlike in the past when people ate mostly at home and kept to a simple diet, today, owing to several trends, everyone is eating out more than ever before. At the same time, the consumption of processed food such as breakfast cereal, cheese, tinned vegetables and meats, bread and other foodstuffs has increased exponentially

Urbanisation, the rise of the Indian middle class, increased travel, awareness about different types of cuisines and significant changes in the food and dietary habits of people are the trends that are driving this 'eating out' phenomenon. And it is not just the urban elite who are changing food habits. Due to the movement of rural populations to towns and cities, there are a large number of the poor and marginalised who are filling up on food from the streets.

This is clearly putting greater pressure on the food system as it must supply safe and nutritious food to cities that are virtually bursting at the seams. Innovative thinking is therefore required across the food value chain. It is needed so that food is available in enough quantities to feed everyone. Using the power of innovation, people from all walks of life and social strata can receive food that is safe and reasonably priced. Out-of-the-box methods have to be found to preserve the flavor and nourishing aspects of the food as it travels for miles to reach from the farm to the table.

Recognising these imperatives, the agri- and food industries are working to provide offerings that appeal to the palate while remaining safe. Ensuring hazard-free food requires a collaborative effort among all the stakeholders within the food system. It is important that regulators, food companies, customers and consumers work together. Public-private partnerships that focus on the harmonisation of food safety standards, the improvement and deployment of food safety best practices, and public education, are priorities.

Creating awareness among consumers about what is available and the quality and standards they need to look out for while purchasing fresh and packaged food, is another 'must do'. Food companies are already working alongside the governments to build awareness around food safety. For example, a food safety initiative called "Surakshit Khadya Abhiyan "(SKA), being led by CII along with Cargill, has triggered a nationwide movement that is reaching out to a wide spectrum of players in the food system— from street vendors to large food and beverage organizations to consumers.

Cargill's view is that access to safe food is a basic human right and in today's complex and inter-dependent food supply chain, food safety is a shared responsibility of farmers, the food industry, regulators as well as consumers. The SKA initiative enables the creation of an environment with enhanced food safety awareness for all.

Consumers play a prominent role in this scenario. They must be able to recognise and differentiate between what is good and bad when selecting food. Picking vegetables, fruit and dairy products that are fresh, properly refrigerated and stored, and checking out the list of ingredients in packaged foods as well as the manufacturing and expiry dates are easy actions that support a culture of food safety. Additionally, consumers should look for the proper certifications on the food packaging to assure themselves that what they are eating is safe.

India's food and beverage companies are increasingly improving the quality of their products by adhering to international food safety standards, domestic regulatory frameworks and preventive programmes, and supporting international standards for risk assessment and risk management. They are also investing in appropriate distribution and transportation infrastructure and ensuring that regulation of customs controls does not unnecessarily impede the movement of goods.

Science-based global food safety standards are needed to manage risk, provide transparency and ensure accountability. Indian food companies are also engaging actively with the scientific community, their consumers and other stakeholders to draw feedback on their products and make changes to improve them.

Many food operators are augmenting and investing in state-of-the-art facilities, getting their laboratories accredited, and providing training to employees. This is to ensure that not only their processes, but also the knowledge and experience of their employees help them win the trust of their customers. Embracing state-of-the-art processes and technology to meet regulatory and consumer requirements has become critical for companies.

FSSAI, as the food regulator, has a critical role to play in ensuring that the expanding food network is harmonised and kept safe. Recently, FSSAI allotted USD 100 million for capacity building of food testing labs and skill development. It is also developing a programme through the World Bank's Global Food Safety Partnership. This will address concerns related to the need for accredited labs as well as building capacity. A close collaboration between FSSAI and the food operators will help in establishing high standards in food safety.

In the food industry, food safety should not be seen as a competitive advantage and therefore, we should all actively and openly share the latest technologies, the best science and expertise. Only by leveraging our collective knowledge can we become a reliable source of expertise for our customers, keep the trust of regulators, earn the confidence of consumers and be a catalyst to improve product safety in the industries in which we operate.



Good agro practices for food safety



Varun Berry

Managing Director,
Britannia Industries Ltd.

Food provides nourishment and pleasure. When consumers purchase a packaged food product they have the right to expect that it is safe. With packaged foods becoming ubiquitous in the consumer's larder, it is the duty of the food business operator and regulatory authorities to meet these basic expectations. With the enactment of the Food Safety and Standards Act, 2006 the industry focus changed from regulatory control to self compliance across various aspects of food safety; from adulteration prevention to compliance with delivering food safely across each node of the supply chain.

In an increasingly complex and challenging food value system, fragmented farming, little control and regulation on the quality of agricultural produce at source and lack of trained manpower will lead to disputes around quality of raw materials, analyses of residues and contaminants, nutritional and labeling information, shelf-life of the products, safety of the food etc. In today's global food trade scenario, India will have to match its quality standards with those of the other countries; we will definitely need to establish good agriculture practices for farm produce. Going forward, greater focus is required for delivering safe and high quality agro-based ingredients to consumers and FBOs. This, in turn, will ensure that processed food products for end use meet all the food safety standards.

At the front end, an evolving distribution system is prone to a

poor handling and storage practice which does impact safety and quality of the delivered goods. Even in these challenging operating conditions, the primary responsibility of providing safe and wholesome packaged foods is borne largely by the FBOs. Capability building initiative by FSSAI across the distributive supply chain including training of street food vendors will go a long way in improving the safety of delivered food products. Building a world class supply chain capability in India for handling of food products will be another key enabler.

A significant step taken by FSSAI to harmonise the regulations of food additives in line with Codex, with a list of 11,000 permitted food additives across the various food categories, widening the sphere of standardised food products and clarity on the proprietary food category will help FBOs in launching a range of innovative products at a faster pace in the market place.

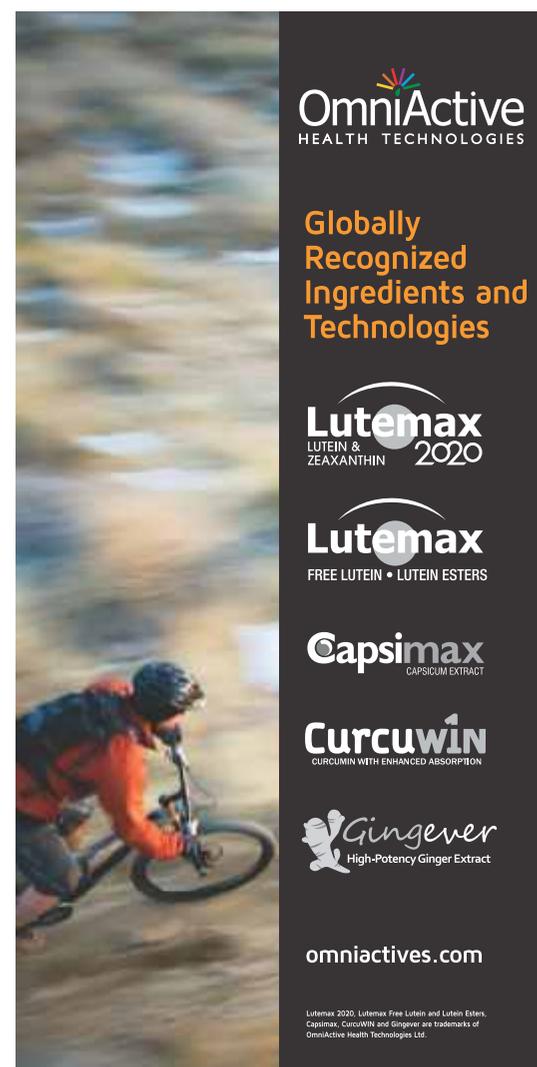
“Capability building initiative by FSSAI across the distributive supply chain including training of street food vendors will go a long way in improving the safety of delivered food products.”

One of the key requirements, of having standardised methods for analyses to confirm safety of the foods without any ambiguity, has now been fulfilled by the FSSAI by releasing manuals of methods of analysis compiled by Directorate General of Health Services. This needs further support by way of building world class analytical centres of excellence for residues, contaminants and other key parameters. These centres also need to undertake analytical research work to deliver consistent and unambiguous results for the food safety conformance.

In order to have a robust framework for scientific co-operation and research in the area of Food Safety and Nutrition, FSSAI has launched its new initiative, FSKAN (Food Safety Knowledge Assimilation Network), which will help industries to actively participate in building a scientific and regulatory framework for food safety. This will build trust, transparency and collaborative partnerships between the regulatory authorities and FBOs. A similar approach in framing or modifying regulations will be required, including participation in scientific panels by the industry bodies.

Globally, some of the sweeping reforms in the area of food safety like Food Safety Modernisation Act (FSMA) will shift focus to prevention of food safety problems. Accordingly, the Indian food safety plan also needs to shift focus to prevention of all reasonably foreseeable food safety hazards, either occurring naturally or introduced unintentionally into the facility. This is essential for India to remain active in the global food trade market.

All the changes introduced by the FSSAI in the last one decade have definitely raised the bar on food safety. Going forward, more needs to be done to ensure delivery of safe and wholesome foods to the consumer while building trust, transparency and confidence among FBOs.

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Towards holistic food safety culture



Ajay Khanna

Vice President & Country Head - India,
Herbalife

Globalisation has opened up opportunities for knowledge, innovation, products, technology and business practices in every sphere of our lives. Changes - even paradigm changes - are part and parcel of globalisation. But changes need to be moulded and shaped to benefit consumers at large. It is here that the role of an appropriate authority assumes prominence to give framework, rules, regulations and standards, while also giving fuel to growth.

As per a study report by FICCI, in 2010, the Indian nutraceutical or health supplements industry was estimated at USD two billion, roughly 1.5 percent of the global market. While this market is still nascent in India today, forecasts say that it has the potential to grow at 16 per cent a year. Till now, USA is considered as the most mature market for nutritional food supplements, followed by Europe.

A significant, but a welcome positive change came into the Indian food regulatory sector in the form of an integrated food act in 2006; the Food Safety and Standards Act (FSSA) 2006 has brought pragmatic views of the global best practices and implementable requirements. For the first time in the history of Indian food business, a special category of foods such as food for special dietary uses, health supplements, novel foods, organic foods and functional foods got a mention in the FSSA.

It is heartening to see how the authority is shaping up – the proactive and rational manner of resolving or dealing with issues and concerns of food industry and other concerned stakeholders; transparency of operations; reaching out to various local jurisdictions; the guidance and support given to Food Business Operators (FBO); streamlining the licensing and registration process and the importance given to stakeholder consultation in refining regulations are all very satisfying and indicate a sincere and confident progress towards better regulation.

Another significant initiative that the FSSAI is driving very passionately is food safety – a major concern in today's time. A step in this direction is the mandating of license or registration of food business operators. This is a significant step towards ensuring food safety and compliance by all food business operators and the building of a robust and safe food supply chain. After all, safety and quality go hand-in-hand in the food products segment.

Herbalife's journey in ensuring every Herbalife associate is a registered or licensed FBO under FSS laws has been a great learning experience thus far. The learning on the intricacies of the law and compliance requirements has been worth every effort. Herbalife India, as part of a global premier nutritional

food company, will continue with its commitment to offer the best nutritional food products - as its global company has demonstrated for the last 36 years across the globe.

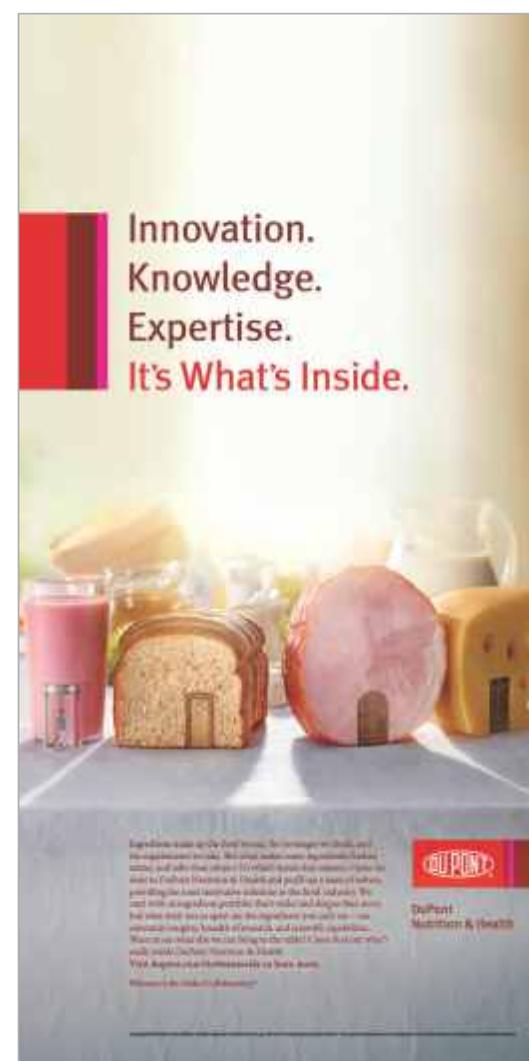
All the initiatives of the FSSAI are contributing towards a positive and holistic development of a food safety industry. In the same vein, while the food authority is doing its best to leave no stone unturned to support the growth of the food industry, equal responsibility also rests on the food industry to come forward and partner with FSSAI in the most transparent manner to further strengthen the Indian food industry.

In summing up, one can say that the food industry in the country is very buoyant. India boasts of some world class food research and testing facilities. There is no dearth of food technology to make India a food superpower, and when all these elements are working in tandem with the statement of objects of the FSSA, led by FSSAI, the effect can only be transformative.

Health supplements in the nutritional food space are emerging stronger, and are gearing up to provide required health supplements to consumers to balance their daily nutritional needs.

The future of the food industry looks promising. Health supplements in the nutritional food space are emerging stronger, and are gearing up to provide required health supplements to consumers to balance their daily nutritional needs. A clearly defined regulation to specifically cater to such nutritional food products will prompt this section of the food industry to thrive.

Once again, on the occasion of the 10th Anniversary of the FSSA, Herbalife wishes FSSAI the very best in its endeavours. We express our confidence in the food authority as it continues to march towards the objectives of FSSA.



Cultivating trust between FBOs and regulator



Sanjay Mariwala

Managing Director,
OmniActive Health Technologies

The global nutraceutical industry is booming and mature markets across North America and Europe are witnessing a more evolved and aware consumer base. With the advent of digital marketing and social media, consumers are seeking out more information and making informed choices. This has also led to a focus on natural, science backed and innovative products to meet consumer needs.

The Indian nutraceutical industry still forms a very small part of the global industry and is in its nascent stages, at about two per cent of the global market. But estimates point to high double digit growth rates of around 15-16 in for this Indian industry in the coming years.

Given this backdrop, the industry is witnessing increasing numbers of global and multinational players entering the fray with their offerings. To continue the growth momentum as well as protect the interests of the consumers, the industry and regulators need to build mutual trust and work together.

The industry players (comprising manufacturers, suppliers and other intermediaries) and the regulatory bodies are the two most important pillars that contribute to the growth of any industry globally. The same holds for the nutraceutical industry in India.

Taking a look at the current scenario, the regulations are in a draft stage and have not yet been gazetted by the ministry. Finalising the regulations will help in bringing the required

clarity for all the stakeholders. There are also some concerns regarding lack of standardisation and consistency in the timelines for enforcement.

Also, more accredited labs and testing facilities along with standardisation and consistency in sampling policies will help in enforcement. Food inspectors' and other regulators' training with a special focus on nutraceutical products will develop information around the industry. We also need to monitor and update the regulatory guidelines continuously, as the industry grows. This is the common practice followed by global regulators.

Providing clarity on regulations and guidelines and then maintaining transparency in the enforcement of the same will be the key factors for the growth of the industry. Any form of uncertainty in regulatory aspects can negatively impact the growth of the industry.

This needs to be then taken forward with mutual understanding of each side's objectives and constraints. This can be done through dialogue and engagement between representatives from the regulatory bodies and the industry. Such consultations have been initiated and need to be continued at full steam.

An effective way to improve transparency, knowledge sharing and compliance in the industry can be through forming an independent body, like an advisory and guiding council, comprising of leaders from the industry. Some of the roles

potentially played by the body could be:

- This will have representation from suppliers, ingredient manufacturers and formulators of dietary supplements and functional foods. Representation from large and small corporates, industry associations, academia, industry leaders, R&D centres, and legal community will help provide well-rounded opinion and thought processes.
- The need is to evolve a common platform for developing consensus and addressing guidelines related to policy, technical, scientific and operational areas. This will enable the industry players to self-regulate and arrive at common acceptable standards.
- This council could play a role, building an ethics code for self regulation, focusing on reasonable claims, quality standards, practices to deal with violations and common global standards. This will help in evolving a world class industry in India.
- Consumer education and awareness building initiatives can be taken up to help build a consumer base that is informed, conscious and aware of wellness and responsible nutrition. Training and skill enhancement for the industry and regulatory body through relationships with regulators globally will enable the local players. This council could also work with regulators in drafting claims and novel food identification and registration process.
- As an industry representative council, the members would have certain commitments. They should be required to market products that will improve the personal health of consumers and public health. They will also need to take appropriate actions to support the safety of their products.
- Council members should make only those representations in labelling and advertising that are supported by competent and reliable scientific evidence to substantiate those claims.
- Members will be obligated to comply with all applicable state and central laws and regulations while also participating in the creation of relevant laws and regulations, observing fair business practices.
- A major commitment could be proactively working with the council and the regulator for continuously improving the standards and its enforcement.

Setting up such a representative council will facilitate dialogue and engagement between the regulators and the industry players. It can help ease the task of the regulator. Engaging with all the stakeholders of the industry through a common platform will help in self-regulation and setting and maintaining high standards of product quality and science.

This would go a long way in helping the regulator and industry to work together to drive growth and help Indian industry reach standards that are at par or above the global standards, while providing the most efficacious and safe products to the consumer.



Traditional foods and food safety



Dr. Prabodh Halde

Head, Technical Regulatory Affairs,
Marico Ltd.

India has a rich culinary heritage. Most of our traditional food has evolved over centuries, transferred from one generation to the next. It is often based on a holistic approach to nutrition, as required by local people. Such food that uses locally available ingredients and additives is found to have its own value for local people; it may even have therapeutic or medicinal benefits.

Indian cuisine encompasses a wide variety of regional cuisines native to India. Given the range of diversity in soil type, climate, culture, ethnic group and occupations, these cuisines vary significantly from each other and use locally available spices, herbs, vegetables and fruits. Almost all states have their unique recipes. In light of modern science, traditional knowledge about food can be blended with modern technology to preserve traditional food products and practices.

Should traditional food to be regulated or not? The answer is not so easy, since it is related to something that has worked for so long and is time tested – many ask, why question food practices that have been followed for centuries? The rational answer, however, is that no food, not even traditional food, should stay outside the purview of safety standards.

Internationally, the European Union(EU) has understood the importance of traditional food and has covered it under EU standards. As per EU, 2006, traditional food means proven usage in the community market for a time period showing

transmission between generations, that is, at least 25 years. In India, we do not have any such regulation.

Some EU definitions of Traditional Food

Published definitions of traditional foods include temporal, territorial and cultural dimensions. It is the idea of a transmission of knowledge of traditional ingredients, traditional composition and traditional production and/or processing from generation to generation.

Protected Designation of Origin (PDO) is defined as meaning the name of a region, a specific place or, in exceptional cases, a country, used to describe an agricultural product or a foodstuff originating in that region, specific place or country.

Protected Geographic Indication (PGI) is defined as meaning the name of a region, a specific place or, in exceptional cases, a country, used to describe an agricultural product or a foodstuff originating in that region, specific place or country, and which possesses a specific quality, reputation or other characteristics attributable to that geographical origin, and the production and/or processing and/or preparation of which take place in the defined geographical area.

Traditional Specialities Guaranteed (TSG) means a traditional agricultural product or foodstuff recognised by the European Community for its specific character through its registration

under Council Regulation (EC) No. 509/2006. For the purposes of the regulation, 'traditional' is defined as meaning proven usage on the European Community market for a time period showing transmission between generations; that is, at least 25 years.

According to Romanian Direction No. 690 / 2004, traditional food products:

should be obtained from traditional raw materials; should present a traditional composition or a traditional production and/or processing technique; should be distinguished from other similar products from the same categories; be traditional itself or to express traditionalism; be according to a specification.

The Indian Scenario

Currently in India, we do not have any regulations which govern traditional food or its standards. Under FSSA Section 16, promotion of wholesome food and advising central / state governments in the area of nutrition is the responsibility of FSSAI. Thus, safety of traditional food is also covered by FSSAI.

Traditional foods have an assumed 'history of safe use' in the country in which they are used. However, no food can be considered to be absolutely safe under all circumstances – individuals may tolerate the same food differently. Traditional food is considered safe within the context of its traditional use by the consuming population group and prevailing dietary, preparation and processing regimes and cultural practices.

As per risk assessments, the following chemical contaminants may be associated with traditional foods:

- Mycotoxins , produced by moulds either in crops during unfortunate weather conditions or during storage of crops under humid conditions
- Acrylamide, formed in appreciable amount during heating treatments of carbohydrate-rich food (potatoes products, cereals products, noodles)
- Diethyl carbamate, formed during fermentation process(idli/dosa/dhokla)
- Heterocyclic aromatic amines ('cooked food mutagens'), formed during frying, baking and grilling of fish and meat
- Polycyclic aromatic hydrocarbons (PAH), formed in appreciable amount during smoking and barbecuing of food (grilling/roasting)

Conclusions

Preserving traditional food is very important for a country in order to maintain its heritage. But a modern blend of science is required to upgrade the knowledge of traditional food and without diluting the main principles. Since India does not have any regulation to govern its traditional food, it is necessary to formulate some policy regulations urgently. Though today it is covered under FSSAI, there are no vertical standards for traditional food which can be developed to cover the category.

India can learn from EU regulations regarding the conditions and criteria for

certification of traditional products. Similar certification can be developed to cover Indian traditional food. Also, some project can be undertaken to preserve the knowledge of traditional recipes and also to understand the impact of traditional food on human health, and all these findings can be documented properly for the benefit of many generations of Indians to come.



Future trends in foods



Abneesh Roy
Sr. Vice President,
Edelweiss Securities

Changing food trends indicate the future of food safety in the country, and the scenario that food safety authorities must keep in mind when formulating policy, rules and regulations. One major future trend is a growing culture of eating out and packaged food. Key reasons for predicting and increasing trend in eating out and growth in the packaged foods industry in India are:

Increasing participation of the women in the work force in India (Female labour force participation in India is among the lowest in the world) will help the penetration of packaged foods in India as most Indians prefer home cooked food.

Increase in the per capita income: The per capita income in India in FY16 stood at INR 93,293. Per capita income of a country is a sign of its prosperity and with the various government initiatives driven towards driving the per capita income upwards the eating out and eating packaged foods will also increase as more money comes into the hand of the people.

Lower penetration to ensure faster growth: As compared to other developed countries which have reached saturation levels in terms of growth in convenience food categories, India possesses a huge potential in both segments. The current per capita expenditure on food is 1/6th that of China and 1/16th that of US, with a significant opportunity for growth in the future.

Improving demographics: India has one of the youngest population in the world. This will lead to an increasing demand for food products to meet demands of convenience, variety, health and a changing palate. Emergence of Tier 1 and Tier 2 cities which will present a key opportunity for future growth due to rising income, increased awareness and limited availability of products currently in these markets.

FSSAI focusing on simpler mechanism and hassle free environment: FSSAI is taking various measures that include easing of the approval process, making changes in the law to make them more business friendly etc. This will encourage companies to launch more new products in the food space.

GST: GST is a bigger game-changer than FDI in multi brand retail because everybody will be on a level-playing field. In India, the warehousing and distribution network is not geared to the fulfillment of customer demands at optimal costs. Most food companies operate with at least one distribution center or carrying and forwarding agents (CFA) in each state, where they sell their merchandise, to avoid interstate taxes. Indian companies use the services of 25 to 50 warehouses at the national level, which is a very high number compared to developed economies (less than five).

These favourable triggers will accelerate the following trends in the foods space:

Entry of more organised players to expand market: Already, there are many players (both regional and MNC) present in India in the foods space but the pace will increase further driven by the overall improvement in the eco system which will be led by FSSAI. The growth will not only be driven by the entry of the new players but also by the increase in the new launches by the current players.

Online and modern trade to drive growth: Retail is a catalyst for consumption, which in turn drives the economy. The modern trade and online channel are helping in driving the retail format which brings lower prices to the consumers and drives higher consumption. Though current contribution from organised and online retail is small, it is increasing gradually across categories, most notably in personal care and packaged foods category.

Focus towards health foods and drinks, snack foods, dairy: The increasing incidences of obesity, blood pressure, heart attack etc have promoted the consumer to shift to a better and healthy diet. Consumer will start to increasingly consume healthy foods and beverages like juices, oats, muesli, soaps etc. Also, there will be increasing demand for ready to drink and eat food as more people are really short of time due to work etc. These snack foods include biscuits, namkeen, noodles, pasta, chocolates, confectionaries, Ready to eat (RTE), upma, poha etc. Dairy is also another key focus in which many companies are entering, given the very large opportunity and the lower penetration of the organised players (only 30 per cent organised). The main focus within dairy also is towards value added dairy products like cheese, flavored milk, milk shakes, lassi etc.

New challenges for food regulator

The changing food culture presents new challenges for the food regulator, viz:

Regulation of the small unorganised players that operate at every nook and corner of the country (street food etc). They are very difficult to track and the quality of food they provide is questionable. A number of education and awareness programmes will be required to make them aware on how to provide good quality food. Regulations need to be in place to make sure adulteration is curtailed.

Another issue that can come up is the trademark and formulation as more and more companies will increase their launches and there can be companies (largely smaller ones) that can launch a similar 'me too' products. Apart from this there can be counterfeit products, etc. which is also very difficult to tackle.

The new online channel has removed the barriers for distribution and there are many private labels that are being sold on the online channel. Regulations need to be in place to keep an eye on these new private labels coming via online channel.

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Section IV

Empowering Consumers

Making FSSAI a household name

The Food Safety and Standards Act (FSSA), 2006 completes 10 years this year. As the founding member of the authority from 2008 to 2013, and now as a part of the Central Advisory Committee (CAC) of FSSAI, I often ask myself: Is the Indian consumer aware of the existence of the Food Safety and Standards Authority of India (FSSAI) or its affiliates in the various states of India? The answer I get is 'Yes, but we still have a long way to go'.

Though FSSAI's name has become somewhat familiar through awareness campaigns, its brand equity has been marred at times by adverse publicity over issues like delay in the implementation of the law, industry influence in the formation of the expert committees, consignments held up at various ports due to lack of clarity within the states' regulators on the new food law or the rules and regulations.

The FSSA, 2006 came into force in August 2006 with the key objective to consolidate the existing laws relating to food and to establish the FSSAI for laying down science based standards for articles of consumption. It was also tasked with regulating their manufacture, storage, distribution, sale and import, and for all other matters connected with food safety. FSSAI was deemed to be the sole authority to build the brand around safety and quality. The challenge was how to establish the FSSAI logo as a well known, differentiated and trusted logo, vis a vis the ISI logo of the Bureau of Indian Standards, which also dealt with food



Bejon Kumar Misra

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safety standards and quality parameters of various food products, including packaged drinking water and beverages.

Strategies for FSSAI

To make FSSAI a household name and its logo a symbol with high recall value amongst people, it is necessary to first build the brand equity of FSSAI by creating assets linked to the FSSAI name and symbols. One way to do this could be by providing value added services like a 24x7 toll free helpline, with agents speaking in the language of the callers, followed by a prompt resolution of the issues raised.

Another service that has the potential to create value for the brand involves information collation and dissemination. The consumer is perpetually looking for value for money and seeks the best quality with guaranteed results. If FSSAI can collate such data about various brands of food available at the marketplace based on the consumers' perception about quality and safety, and makes it easily available to the consumer, then the FSSAI brand becomes much greater than tangible assets or revenue streams.

We must spend time on creating a catchy tag line promoting FSSAI. This will be the face of FSSAI and all the beneficiaries should feel proud to display or get associated with the logo. We must understand what the citizens today think of FSSAI and what they expect from the relationship - both factual and

emotional. We must correctly gauge what will create value for the party engaging with FSSAI and the manner of engagement with the various stakeholders. While the consumers would seek information or complain about the quality of the food product, a food processing firm will seek financial or technical support to enhance business turnover and increase profitability. Both should find their expectations fulfilled.

Identifying Thrust Areas

We have to clearly identify our beneficiaries and not spread our efforts, and hence impact, thin. We must narrow the focus to achieve faster growth. The more diverse the target audience, the more diluted our success will be. We have to conduct a study or research to understand the perspective and priorities of our various stakeholders, including traders and retailers, to anticipate their needs and put our message in a language that resonates with the end users of the FSSAI services.

We must position FSSAI with an identity and value proposition that is to be actively communicated to the target audience. The statement has to describe what FSSAI does and for whom, with all the verticals working within FSSAI like Standards, Compliance, Enforcement, Communication and others. Every vertical must have a user charter with clear commitments on deliverables and timelines and pay compensation in case of non-delivery or even delays, without any excuses. Thus the logo and the FSSAI Brand will bring credibility and accountability towards the beneficiaries.

We have to make a promise in terms of food safety and assure the consumers that we as the Authority will never fail to deliver our promise. It has to be a one-sentence description of the value that FSSAI promises to deliver to citizens. For example, a statement like "FSSAI promises Food Safety and Quality to the Consumers". This can only be made possible if we can connect to the citizens and create a positive emotional attachment to the services provided by FSSAI, which creates a response from the citizens on the service dimensions in a voluntary manner. We have to have an efficient feedback mechanism on the services provided by FSSAI.

Towards this end, the FSSAI website will be extremely important. It is the place where all its audiences go to learn what the organization does, how it works, and who its beneficiaries are. Further, the website can be home to valuable content.

Finally, storytelling is also important to communicate with our citizens, and visuals are as effective as a mode of communication. Social storytelling produces strong benefits and results for the adult minds. It is a pivotal part of promotion, communications and relationship building. Without it, consumers find it difficult to connect and advocate for something. Storytelling can and should be used for promoting FSSAI in every household because it can drive loyalty, advocacy, and trust.



Make food about nutrition, nature and livelihoods

Poorer countries have health problems because of lack of food. Then as people get rich, they end up losing the health advantage of food availability. They eat processed food that is high in salt, sugar and fat, which makes them obese and ill. It is only when societies get very rich that they rediscover the benefits of eating real food and begin to value sustainability.

In India, ironically, it is all happening simultaneously. We have a huge challenge of malnourishment and now a growing battle with the bulge and its associated diseases of diabetes, hypertension and the like. But we also have an advantage – we have still not lost our culture of real food. The nutrition, nature and livelihood connection still exists as Indians eat local, nutritious, home cooked meals, which are more than often frugal. But this is because we are poor. The question and challenge is if we can continue to eat healthy meals that are sourced from bio-diverse nature and built on rich culinary cultures even as we get rich. This is the real test.

But to do this, we must get food practices right. We must understand that it is not necessary or accidental that the richer societies tend to lose the health advantage because of bad food. It is because of the food industry and it is because governments have stopped regulating in favour of nutrition and nature. Quite simply, they have allowed powerful industry to take over the most essential of our life business – of eating.



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We need also to understand that eating bad is about changing practices of agriculture, so that business becomes integrated and industrial. This model is built on the model of supplying cheap food, with high resource and chemical inputs. So, names change; but food goes from one chemical ingredient – pesticide, antibiotics – to another.

For the past few years, my organization has tested pesticides in processed food, then trans-fat in edible oil, antibiotics in honey and most recently, antibiotic residue in chicken. These tests shook consumers, and the Indian government acted. It has brought in more stringent standards for pesticide residues in processed food; agreed (reluctantly) to regulate trans-fat, adopted near- zero antibiotic standard for honey and most recently, banned the use of antibiotics as growth promoters in poultry. But all this is not enough. Not nearly enough.

The fact is that we need a model of agricultural growth that will value local good food production and not have to first 'chemicalise' and then learn better. This is difficult. But this is what needs to be done so that we can have both nutrition and livelihood security. As yet, the food safety business is designed to focus on hygiene and standards. But regulations need food inspectors and so the cost of surveillance increases. Ironically, in this model, what goes out of business is what is best for our bodies and our health – small farmers and local food business. What survives is what we do not need – large agribusiness.

Along with the promotion of good local food production, we need to protect against bad food. Governments cannot say that eating processed food is about choice. Governments cannot stand by and watch as industry uses millions of dollars to cajole, persuade and seduce consumers to eat what they know is junk and unhealthy food.

This is what the government committee set up to frame guidelines for junk food, of which I was a member, decided to do. We agreed that it was time we adopted a three-step approach to nutrition and food in the country. The first step is to ban, or at least severely restrict, the availability of ultra-processed food -- high in salt, sugar and fat -- in schools. Secondly, we said that all this would not work unless people are informed about what they are eating. To do this, labelling on food should specify how much fat, sugar or salt it contains in relation to our daily diet. Thirdly, governments need to regulate the promotion and advertising of unhealthy junk food. Most importantly, celebrity endorsement of these food products-- from cricket to film icons-- should not be allowed. In 2014, the Delhi High Court endorsed the report. It has now directed the government to take action to rein in powerful junk food interests.

“ The first step is to ban, or at least severely restrict, the availability of ultra-processed food -- high in salt, sugar and fat -- in schools. ”

But this is easier said than done. The new world is a favoured destination of the junk food business and it is now our turn to be turned into food zombies.

The way ahead, then, is all of the above and more. In India, we also need to celebrate our rich food cuisine, which is built on the incredible colour, flavour, spice and diversity of nature. We need to know that if biodiversity disappears in the wild, we will lose the food wealth on our plates. Food will become impersonal. It will become a sterile package designed for universal size and taste. This is what is happening today, where we eat plastic food from plastic cans.

First Food is our recipe book, born out of the need to re-emphasise the value of our cuisine and designed to make the connection between what we eat and why we eat it -because if we lose the knowledge and culture of our local cuisines, we lose more than their taste and smell. We lose life. We lose our tomorrow.



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10
Tetley
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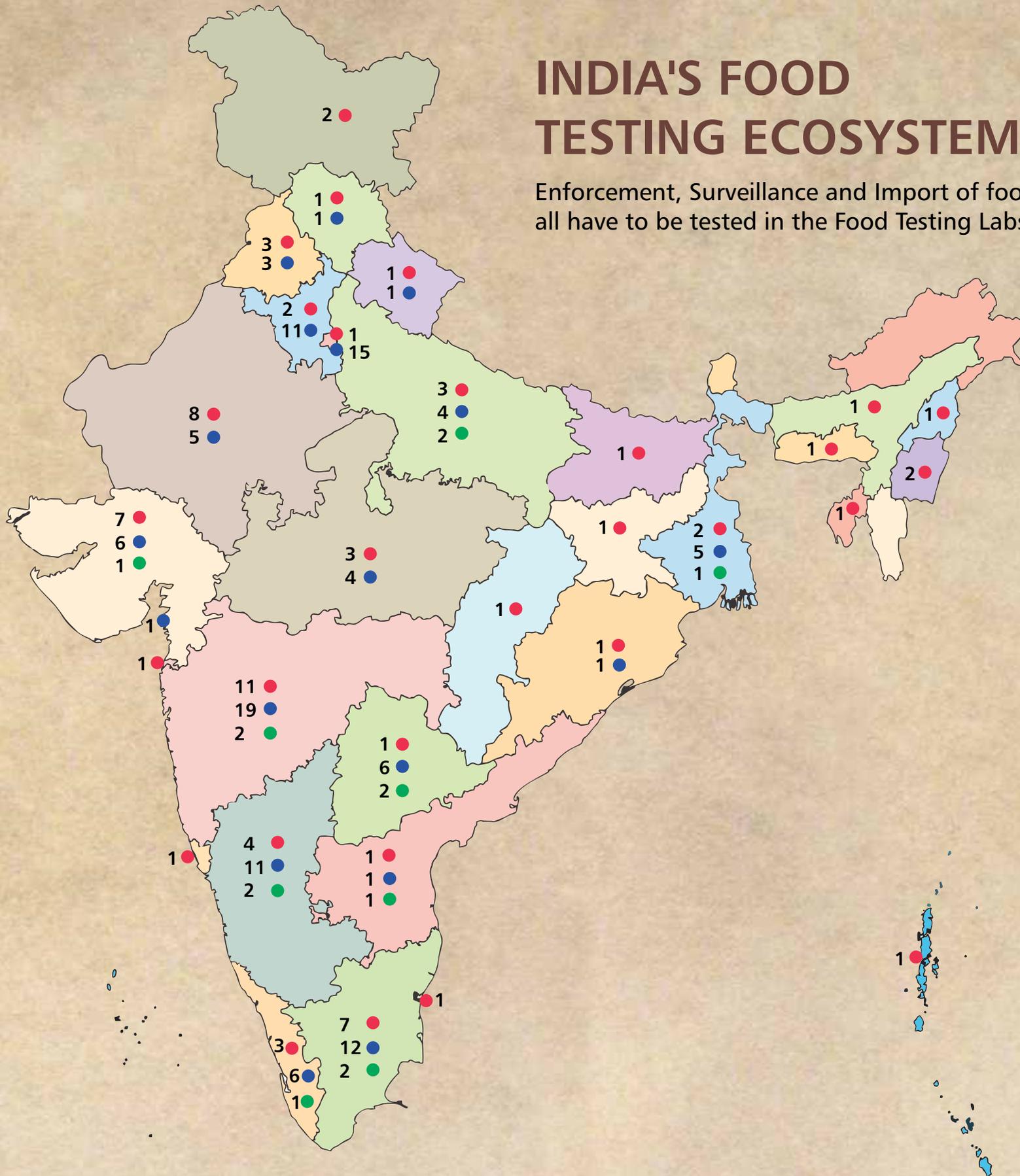
Aloe Vera

Lemon & Honey

*A cup of green tea is known to contain 5 times the quantity of antioxidants found in an apple (USDA Database for the Flavonoid Content of Selected Foods, Release 3, Sep 2005) based on internal analysis (1.8g/100ml). **When brewed, green tea is approximately 99% water, so drinking it regularly will help maintain hydration and make an important contribution to your daily fluid requirements and health. Water helps remove waste products from the body. EFSA Journal 2011;9(4):2070. The antioxidant action of polyphenols in green tea is known to increase the antioxidant capacity of blood. Canadian FA Claims: Chapter 6.3.3, Table 6-1. Antioxidants scavenge harmful free radicals formed inside the body. ICMR Bulletin, Vol 13, Apr-May, 2003L thus help you stay healthy. | TetleyGreenTea | TetleyGreenTea.com
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