PRESSING FOR FOOD PROCESSING

India's demographic landscape has witnessed a sea change, since its inception as a sovereign nation. Once the destination of cheaper imports, the country, today has become an ace destination for investments in innovative food products. India's strong agricultural background and a steady supply of agricultural commodities which forms the raw materials of the food processing segment are dependable drivers of this segment.

The possibilities that are in store for the Indian food processing segment are enormous. According to ASSOCHAM-Grant Thorton Research paper, the sector has the potential to attract US$ 33 billion of investment and generate employment of 9 million persons days by FY 2024. Besides, India's perennial problem of food wastage due to multiple factors can be effectively addressed by food processing. Value addition, better income realization for the farmers, rural entrepreneurship and better exports are other attributes of this segment.

The Potential

Indian agriculture segment has been witnessing a drain in work force, which was once considered an important determinant of India's strength in agriculture. With younger population reluctant to take up farming, the migration of resourceful labour from rural to urban centers of production has peaked in the recent years. The increasing cost of production without a concomitant increment in the returns have forced the younger generation to abandon the primary centres of production. However, with a thrust on food processing, the trend can be reversed as food processing is not only a key contributor to employment generation but also a suitable avenue to develop rural entrepreneurship.

The ASSOCHAM-Grant Thornton joint study on 'Food Retail: Investment: Infrastructure' has noted that by 2024, food processing sector is expected to employ 9 million people in India and expected to generate about 8,000 direct and 80,000 indirect jobs. According to the study, Indian food processing industry is pegged close to US$ 121 billion to US$ 130 billion.

India with the second largest arable land in the world and a vast diversity in the crops raised, stands a good chance to reap the maximum benefit from the food processing segment. Being the largest producer of milk, pulses, sugarcane and tea in the world, and the second largest producer of wheat, rice, fruits and vegetables, investments in food

The record productions of agricultural commodities, year after year have not engendered a parallel development in the food processing segment. India is one of the top rankers in the production of bananas, guavas, ginger, papaya etc., although processing levels in the country remain limited

processing is a natural progression.

However, the record productions of agricultural commodities, year after year have not engendered a parallel development in the food processing segment. The degree of processing is appallingly low and ranges between 2-35% for different produce. India is one of the top rankers in the production of bananas, guavas, ginger, papaya etc., although processing levels in the country remain limited. This indicates an extensive opportunity in the food processing sector.

Another factor which plays a crucial role in encouraging the development of the processing segment is the expansion of the Indian food and retail market. The change in the lifestyle of Indian population and consumer preferences have spurred this trend. The study points out that Indian food and retail market is projected to touch US$ 482 billion by FY 2020 from the level of US$ 258 billion in 2015.

India is also a famed food exporter, exporting different categories of food to different continents. So naturally there lies an opportunity of exporting processed food products. With globalisation and increasing trade across the borders, approximately about 460 million tonnes of food valued at US$ 3 billion is traded annually. India has thus a great potential for global trade in agricultural and processed food products. The share of food processing exports in total exports was around 12% in the last few years. During FY 2011-15, India's exports of processed food related products have been growing at a CAGR of 23.3%. Further, India's geographical location gives it a unique advantage when it comes to exports, having convenient connectivity to Europe, Middle East & Africa from the western coast, and Japan, Singapore, Thailand, Malaysia, Korea, Australia & New Zealand from the eastern coast.

Also, the unorganised sector accounts for 42% of India's food processing industry. Food and grocery constitute a substantial part of India's consumption basket accounting for around 31% share in the total. In contrast, consumers in other countries spend a much lower proportion of their income on food and grocery — 9% in the United States (US), 17% in Brazil and 25%in China. Food and grocery is the largest segment in India's retail sector,

with a share of more than 60% in India's total retail market in 2014.

Food processing is a priority sector for the Indian Government, as well as one of the focus sectors in the Make in India initiative. Further, the availability of affordable credit and other fiscal incentives have also led to India being considered as a one of the most favourable markets. This has also invited foreign investments in this sector. The foreign direct investment (FDI) in the food processing sector is expected to rise by 38 per cent to USD 1 billion this fiscal according to Union Minister,Harsimrat Kaur Badal. Proposals worth USD 14 billion were signed during the 'World Food India 2017' event held in November, 2017. "FDI in food processing is increasing. It stood at USD 727 million in 2016-17. In the first seven months of this fiscal, FDI in the sector has reached USD 500 million. It will touch USD 1 billion by end of this fiscal," Food Processing Minister Badal said.

Surplus Raw Materials

India's advantage lies in the enormous production potential of agricultural commodities. Being first in many commodities, India can always channel the excess production to fuel the food processing segment. Major industries constituting the food processing sector in India are grain milling, sugar, edible oils, beverages, fruits & vegetables processing and dairy products.

India's food grain production has been recording newer heights and record productions have become the new reality. For the crop year ending June 2018, the agriculture ministry has reported that India's foodgrain production is forecast to grow to a record. Foodgrain output is expected to increase 0.9% to 277.49 million tonnes, exceeding the previous record of 275.11 million tonnes during 2016-17. Output of rice, pulses, coarse cereals, cotton and sugarcane is expected to be higher this year. Rice production is expected to climb to a record 111.01 million tonnes this crop year, 1.2% higher than last year's output. Wheat output is pegged at 97.11 million tonnes, a decrease of 1.42% from the previous year. The country's highest wheat production was at 98.51 million tonnes in 2016-17. Pulses are projected at 23.95 million tonnes compared with 23.13 million tonnes in the previous year. Production of oilseeds, including groundnut, castor, sesamum, niger, mustard, linseed, safflower, sunflower and soyabean, is set to fall 4.45% to 29.82 million tonnes, led by a 13% decline in soyabean. Production of sugarcane is estimated at 353.23 million tonnes, which is 15.4% higher than last year's 306.07 million tonnes.

India is the second largest producer of fruits and vegetables. Over the years, India's strength in horticulture front has increased manifold. Production of horticulture crops like vegetables and fruits is expected to touch a record 305.4 million tonnes (mt) in 2017-18, about 1.6% higher than the previous year and 8% higher than the previous five years' average according to the first advance estimates. Within horticulture, production of vegetables is estimated at 181 mt in 2017-18, about 1% higher than the year before, while that of fruits is estimated at 95 mt, 2% higher than the previous year. Between 2015-16 and 2017-18, productivity of horticulture crops have risen from 11.7 tonnes per hectare to an estimated 12.3 tonnes per hectare. The record production during 2017-18 will mark the sixth straight year of horticulture production outstripping

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that of foodgrains (estimated at 276mt in 2016-17). With increasing penchant towards perishables, food processing becomes an absolute necessity. The vacuum in this segment was particularly noted during last year when over production of onions, tomato and potatoes led to a heavy slump in prices and heavy losses to farmers.

India is the world's largest producer, consumer and exporter of spices. India accounts for half of the global trading in spices. India produces about 75 of the 109 varieties of spices listed by the International Organization for Standardization (ISO). India exported 5,57,525 tonnes of spices and spice products valued at Rs.8,850.53 crore during April-September 2017 as against 4,50,700 tonnes worth Rs.8,700.15 crore during the corresponding period a year earlier, registering an increase of 24 per cent in volume and 2 per cent in rupee terms. The value added products have gained good market abroad. The export of value-added products like curry powder, mint products and spice oils and oleoresins also rose both in volume and value terms during the period. During the period, 8,800 tonnes of spice oils and oleoresins valued at Rs.1,332.22 crore were shipped against 6,617 tonnes worth Rs.1,237.06 crore last year.

Milk holds immense potential in processing. India has abundant sources of this raw material. India is the largest producer of milk in the world with over 150 million tonnes of production and per capita availability of over 300 grams per day. India's milk production rose by 19% in the last three years to touch 163.6 million tonnes. However, only 20% of the total milk production is converted into value-added products. Milk being a perishable commodity needs to look for more value addition and processing.

There is abundant raw materials for India to convert into value added products. What is required more is the will and conviction among the stakeholders.

Policy and Scheme Support

For accelerating the growth of the sector, the government has allocated a significant number of schemes and programmes. In the Union budget 2018, government allocated double the amount from Rs. 715 crore in 2017-18 to Rs.1400 crore in 2018-19.

A new Central Sector Scheme – Pradhan Mantri Kisan SAMPADA Yojana (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) has been approved by the government with an allocation of Rs. 6,000 crore for the period 2016-20. PM Kisan SAMPADA Yojana is a comprehensive package which will result in creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet. It will not only provide a big boost to the growth of food processing sector in the country but also help in providing better returns to farmers and is a big step towards doubling of farmers income, creating huge employment opportunities especially in the rural areas, reducing wastage of agricultural produce, increasing the processing level and enhancing the export of the processed foods. PM Kisan SAMPADA Yojana is expected to leverage investment of Rs. 31,400 crore for handling of 334 lakh MT agro-produce valued at Rs. 1,04,125 crore, benefiting 20 lakh farmers and generating 5,30,500 direct/indirect employment in the country by the year 2019-20.

Mega Food Park is another scheme under SAMPADA which aims at providing a mechanism to link agricultural production to the market by bringing together farmers, processors and retailers so as to ensure maximizing value addition, minimizing wastage, increasing farmers' income and creating employment opportunities particularly in rural sector. The Mega Food Park Scheme is based on "Cluster" approach and envisages creation of state of the art support infrastructure in a well-de-

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"The food processing industry in India is one of the largest in terms of production consumption, export and growth prospects. Food processing industry plays a significant role in the development of Indian economy because of the integration and synergy it provides between agriculture and industry, the two pillars of economic prosperity. The Government has been reinforcing this sector with various policy initiatives to encourage commercialization and value addition to agricultural produce. Considering the growth witnessed by this sector in the last decade, and further improvement in growth rate expected in the years to come, this sector presents varied opportunities for investment across the entire agri-value chain. Challenges being faced by food processing are high levels of fragmentation in marketing and distribution of food products in India, growing concerns about food safety across developed and developing nations of processed foods, unorganized food retail and the requisite skilled manpower required in this sector. Thus, it is now time for consolidation process of growth drivers by making corresponding changes in policies governing marketing, industrial development and skills as well as creating awareness about food quality and safety norms. Keeping in view the growth and development potential of the food processing industries which in turn will provide a boost to the agriculture based economy, I would recommend that there is a need to identify areas which are surplus in crops, vegetables and fruits and production need to be developed as sound economic clusters. Such adjoining areas should be clubbed together to form clusters. Such specific product wise pockets may serve as feeders for other major agro industries centres. All necessary infrastructural development like rural extension set up for technology transfer, timely supply of quality inputs, storage, road and transport, power supply, irrigation system etc. should be undertaken intensively in and around such clusters to increase and sustain agricultural modernization."

fined agri / horticultural zone for setting up of modern food processing units along with well-established supply chain. Mega food park typically consists of supply chain infrastructure including collection centers, primary processing centers, central processing centers, cold chain and around 30-35 fully developed plots for entrepreneurs to set up food processing units. So far Nine Mega Food Parks, namely, Patanjali Food and Herbal Park, Haridwar; Srini Food Park, Chittoor; North East Mega Food Park, Nalbari; International Mega Food Park, Fazilka; Integrated Food Park, Tumkur; Jharkhand Mega Food Park, Ranchi; Indus Mega Food Park, Khargoan;Jangipur Bengal Mega Food Park, Murshidabad and MITS Mega Food Park Pvt Ltd, Rayagada are functional.

The Scheme of Cold Chain, Value Addition and Preservation Infrastructure is to provide integrated cold chain and preservation infrastructure facilities, without any break, from the farm gate to the consumer. It covers pre-cooling facilities at production sites, reefer vans, mobile cooling units as well as value addition centres which include infrastructural facilities like Processing / Multi-line Processing / Collection Centres, etc. for horticulture, organic produce, marine, dairy, meat and poultry etc. With a view to promote investment in Cold Chain, Ministry of Finance has covered Cold Chain under Infrastructure category.

Scheme for Creation/Expansion of Food Processing/Preservation Capacities is involved with the creation of processing and preservation capacities and modernisation/ expansion of existing food processing units with a view to increasing the level of processing, value addition leading to reduction of wastage. The setting up of new units and modernization/ expansion of existing units are covered under the scheme. The processing units undertake a wide range of processing activities depending on the processing sectors which results in value addition and/ or enhancing shelf life of the processed products. The Scheme is implemented through organizations such as Central & State PSUs/ Joint Ventures/ Farmer Producers Organization (FPOs)/ NGOs/ Cooperatives/ SHG's/ Pvt. Ltd companies/ individuals proprietorship firms engaged in establishment/ upgradation/ modernization of food processing units.

Under the scheme, financial assistance is provided for setting up of primary processing centers/ collection centers at farm gate and modern retail outlets at the front end along with connectivity through insulated/ refrigerated transport

The Agro Processing Cluster scheme aims at development of modern infrastructure and common facilities to encourage group of entrepreneurs to set up food processing units based on cluster approach. Under the scheme, effective backward and forward linkages are created by linking groups of producers/ farmers to the processors and markets through well-equipped supply chain consisting of modern infrastructure for food processing closer to production areas and provision of integrated/ complete preservation infrastructure facilities from the farm gate to the consumer. Each cluster has two basic components i.e. Basic Enabling Infrastructure (roads, water supply, power supply, drainage, ETP etc.), Core Infrastructure/ Common facilities (ware houses, cold storages, IQF, tetra pack, sorting, grading etc) and at least 5 food processing units with a minimum investment of Rs. 25 crore.

Scheme for Creation of Backward and Forward Linkages provide effective and seamless backward and forward integration for processed food industry by plugging the gaps in supply chain in terms of availability of raw material and linkages with the market. Under the scheme, financial assistance is provided for setting up of primary processing centers/ collection centers at farm gate and modern retail outlets at the front end along with connectivity through insulated/ refrigerated transport. The Scheme is applicable to perishable horticulture and non-horticulture produce such as,fruits, vegetables, dairy products, meat, poultry, fish, Ready to Cook Food Products, Honey, Coconut, Spices, Mushroom, Retail Shops for Perishable Food Products etc.The Scheme would enable linking of farmers to processors and the market for ensuring remunerative prices for agri produce.

Also, schemes to ensure Quality and Food Safety have become paramount for food processing segment. For the all-round development of the food processing sector in the country, various aspects of Total Quality Management (TQM) such as quality control, quality system and quality assurance should operate in a horizontal fashion. Apart from this, in the interest of consumer safety and public health, there is a need to ensure that the quality food products manufactured and sold in the market meet the stringent parameters prescribed by the food safety regulator. Keeping in view the aforesaid objectives, government has been extending financial assistance under the scheme under the following components: Setting Up/Up-gradation of Quality Control/ Food Testing Laboratories and HACCP/ ISO Standards/Food Safety/Quality Management Systems. Besides this, the Ministry of Food Processing Industries has been extending financial assistance to undertake demand driven R&D work for the benefit of food processing industry in terms of product and process development, efficient technologies, improved packaging, value addition etc.

Skill Development has also evolved into a crucial element for the food processing sector. Apart from implementation of the Skill component under PMKSY, a number of initiatives have been taken by GOI to address the skill gap in the food processing sector

Skill Development has also evolved into a crucial element for the food processing sector. Apart from implementation of the Skill component under PMKSY, a number of initiatives have been taken by GOI to address the skill gap in the food processing sector. The Ministry of Food Processing Industries is working in close collaboration with other related agencies to augment skilled manpower in the food processing sector. Then Ministry is collaborating with the Food Industry Capacity and Skill Initiative (FICSI), the sector Skill Council (SSC) in food processing, for the validation of the Qualification Packs (QPs) for identified

job roles and developing course curriculum for food processing sector through the National Institute of Food Technology Entrepreneurship and Management (NIFTEM).

Challenge

Food Processing has grown into a crucial segment of Indian agriculture. Undoubtedly, India possess all positive attributes needed to make it big in the field of food processing. Nevertheless, India needs food processing to convert its gains as a major food producer into tangible incomes to the producers and others in the production chain. India unfortunately hasn't been able to fully exploit its advantageous position. The reasons vary from being lack of skill to lack of infrastructure.

India produces a sizeable amount of agricultural commodities. However, India being a diverse country with scattered farm holdings, procurement of quality raw materials is a huge hurdle. Prevalence of obsolete harvesting techniques and handling methods, most often renders the produce useless for further post harvest operations. Besides poor economies of scale and huge operational cost negates the returns from this venture. Contract farming can serve as a solution for this problem. It is emerging as a viable solution considering the increasing demand for more standardized, higher-quality agricultural produce and the difficulty of underdeveloped supply chains and small farm sizes to meet this exceeding demand.

Another serious inequity existing in this segment is the inadequate knowledge about food hygiene and the standards and certification followed in this area. It can be counted as the biggest challenges facing food industries. The tiny, small- and medium-scale industries—find it difficult to identify relevant procedural and compliance changes and they lack the capacity to track regulatory changes. The unawareness is also prevalent among the producers, consumers, food handlers, and even officials. The awareness among Indian consumers regarding food safety has been heightened in the recent years. Rural consumers also deserve safe, high-quality food, and the government can reach them through mass-media campaigns. FSSAI should work with other ministries to raise awareness and educate the public about workplace, farm, and household hygiene as well as safe use of pesticides. When consumers demand safe foods, industry, producers, and food handlers will comply. The Food Safety and Standards Act (FSSA) of 2006 was designed to improve the overall food safety of the population and the food trade within and outside the country. The FSSA consolidated responsibility for food safety in the hands of the Food Safety and Standards Authority of India (FSSAI). In spite of the decade-old transition from the previous food safety laws into the FSSA's integrated standards and regulations, there remain overlapping and residual/pre-existing standards maintained by other regulatory bodies. Clarity is needed if all stakeholders are to conform to FSSA regulations.

Inadequate infrastructure in terms of temperature controlled warehouses for the perishables, cold storage, appropriate logistics have all restricted the growth of the food processing segment. This area requires intensive efforts from the government and the corporates as it is investment intensive. The only way of revolutionizing the food processing segment is by channelizing the capital to this niche area. The government has taken up this massive responsibility and has committed to spend Rs6,000 crore over the next three years to create the infrastructure which will leverage investments worth Rs31,000 crore. Considering the seasonality in the procurement of the raw materials, infrastructure can play a significant role.

The Food Processing Industry sector in India is one of the largest in terms of production, consumption, export and growth prospects. The size of the sector is partly due to its disaggregated nature. So one of the biggest tasks is to aggregate them. This will not only help them reap the advantages of economies of scale but also for the advancement of the food processing segment in general. India has achieved remarkable success in food grain production. Now it is time to create a similar revolution in food processing segment.

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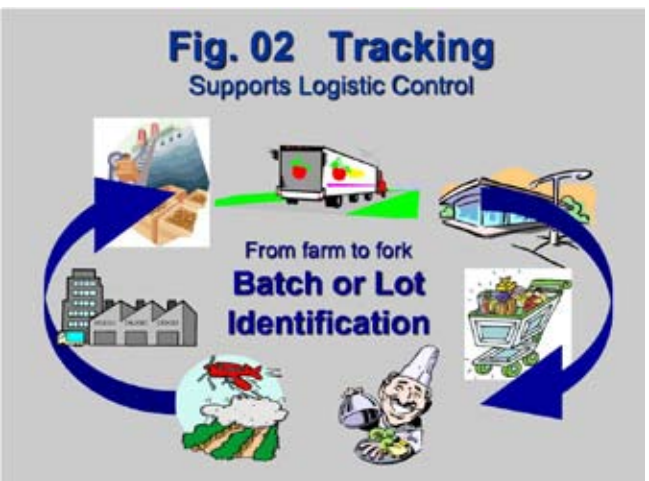
TRACEABILITY FOR MAPPING PRODUCTS TO TRACK FROM THE TRADE CHANNELS

The concept of traceability originated from tracing bio-engineered products (GMOs) and now it has become an important aspect of competitiveness of the food industry. Food safety and traceability are currently at the forefront of the government, industry and world trade around the world. Traceability is essential for identification and information management for fast and accurate product withdrawal and recall from the market in the event of food safety concerns being discovered anywhere in the food chain. To make traceability a successful system, it requires a continuum of responsibility of all stake holders in the food chain.

A traceability system is a useful tool to assist a food establishment operating within a food chain to achieve defined objectives and being influenced by regulations, product characteristics, customer expectations and demands of international trade. The complexity of the traceability system can vary depending on the product features, length of the food chain and the objectives to be achieved. The definition of traceability has necessarily to be broad based because traceability is a tool for achieving a number of different objectives. No single approach is adequate for every objective. Moreover, it is almost impossible to have complete traceability. Even a hypothetical system for tracking beef, in which consumers scan their packet of beef at the check-out counter and receive information on the date and location of the animal's birth and many other information, does not provide traceability with respect to pest control in the barn (a potential food safety issue) and other

Trade channel traceability



Consumer end traceability

related important issues, for instance, genetically engineered feed etc. A firm's traceability system not only helps minimize potential damages for individual firms, it also helps minimize damages to the whole food industry and to upstream and downstream industries. Contaminated products on sale and food borne illness outbreaks damage the reputation and business of the whole food industry.

CONCEPT OF FOOD TRACEABILITY

Traceability system comprises two primary capabilities, the ability to track movements and to trace custody of a food product in the food chain. In defining traceability, it is important to distinguish between the terms "tracking" and "tracing". Tracing is the ability to recreate the history of a product in the food chain and to identify the origin, movements and relevant associated information of a particular unit and/or batch of product located within the food chain by reference to records held upstream (Fig01).

Tracking is the ability to trace the destination of a product in a food chain and to follow a path of a specified unit and/or batch of product through the supply chain as it moves from organizations towards the final point-of-process, point-of-sale, point-of-service or point of consumption (See Fig.02). In other words, it is the movement of the product forward through the food chain to understand where it has gone, what it has gone into and what it has come into contact with.

TRACEABILITY PRINCIPLES AND ENABLING TECHNOLOGIES

Traceability systems should be able to document the history of the product and/or locate a product in the food chain. It is a system to contribute to the search for the cause and investigation of problem and the ability to withdraw and/or recall products, if necessary, from the market channel and to improve appropriate use and reliability of information, effectiveness and productivity of the organization.

Traceability systems should be able to achieve the objectives from a technical, trade and economic point of view. Movement can relate to the origin of the materials, processing history or distribution of the food, and should address at least one step forward and one step backward for each organization in the chain. On agreement amongst the organizations concerned and applicable regulatory requirement, it may apply to more than one part of the chain.

Principles

The traceability system to be meaningful and practical, it should be based on the following principles:

- verifiability of data and information,
- applied consistently and equitably through the food chain,
- results oriented,
- cost effective and practical to apply,
- compliant with applicable regulations or

policy, and
- compliant with defined accuracy requirements.

Objectives

In developing a food chain traceability system, it is necessary to identify the specific objectives to be achieved. These objectives should take into consideration the principles.In evolving a traceability system, following general objectives of traceability system should be to:

- support food safety and/or quality objectives,
- meet customer specification(s)/ requirements,
- determine the history or origin of the product,
- facilitate the withdrawal and/or recall of implicated products,
- identify the responsible stakeholder in the food chain,
- facilitate the verification of specific information about the product,
- communicate information to relevant stakeholders and consumers,
- fulfil any local, national, regional or international regulations and
- improve the effectiveness, productivity and profitability of the organization.

WHY TRACEABILITY?

Traceability has mainly been fuelled by concerns for the safety of consumers.There have been many instances of food borne illnesses, where there was a need to find the product, ingredient or packing material causing the illness. Thus a well-designed traceability system becomes a necessary requirement in the trade. This should cover three major aspects of traceability system.

- to ensure food safety throughout the food chain,
- conformity to fulfill legal requirement and
- customer satisfaction to ensure that customer needs and expectations are met.

Benefits to food industry implementing traceability system:

- It facilitates International Trade,
- It enhances competitiveness and innovation
- It enhances public health & safety
- It helps in Risk mitigation and cost reduction
- It improves operational efficiency,
- It improves food supply chain management
- It enhances cost effective distribution systems and reduced recall expenses
- It helps compliance to regulatory requirements and consumer satisfaction
- It opens up new market opportunities.

GLOBAL VARIABLE REQUIREMENT FOR FOOD TRACEABILITY

There are variable approaches both in different regulations and directives and national and international standards to food traceability. Thus traceability means different things to different people. The European Union General Food Legislation, for instance, requires identification of the suppliers of materials to a food business, identification of the business to which products have been sold and be able to make this information available on demand.

Considering variable approaches providing uneven stringency in tracking and tracing system, ISO has brought ISO 22005-2007 Traceability in feed and food chain -General principles and basic requirements for system design and implementation. This has laid a firm foundation for harmonization of traceability system. To exemplify ISO requirement in the field of food safety, Codex Alimentarius Commission has brought out CAC/GL-60 2006- Principles for traceability / product tracing as a tool within a food inspection and certification system. These two together provided guidelines for food industry to develop food traceability system suiting to a particular situation.

There are widely practiced private standards which have also defined traceability requirements such a Global GAP standards for agriculture produce.

NEW ADVANCES IN TRACEABILITY

As food chain is truly becoming global with geographically dispersed suppliers of ingredients, additives, feed etc., an efficient and seamless traceability system with standardized identifiers for tracking food items, stakeholders facilities etc., through electronic information flow is necessary. It also facilitates meeting challenge of food recalls effectively accurately and with speed through reverse logistics of implicated batches of products in the world market.

Many enabling technologies have been developed for:

a) Automated identification
b) Automated data capture
c) Electronic data processing
d) Electronic data interchange

For instance, GSI Global Traceability Standard and EAN•UCC System for speedy and accurate tracking and tracing batches of food in the food chain. These techniques are being increasingly used in the traceability systems around the world.

Food safety and traceability have become a requirement of government regulations and industry deliberations and international trade. Numerous initiatives designed to introduce various forms of tracking and tracing functionalities in the food Supply Chain are underway. They must be directed towards harmonization of traceability system so that food industry in the international business do not have to face multiple traceability requirements.

Any product that needs to be traced or tracked must be uniquely identified. In a majority of food Chains, products are tracked and traced by their production batch, which has undergone the same transformation (production process) and by their transport/storage path (distribution process).

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