AFST(I), MUMBAI CHAPTER

NEWSLETTER

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AFSTI MUMBAI CHAPTER

FOOD
Processing & Research

REGULATORY

CAREER

CURRENT
Happenings

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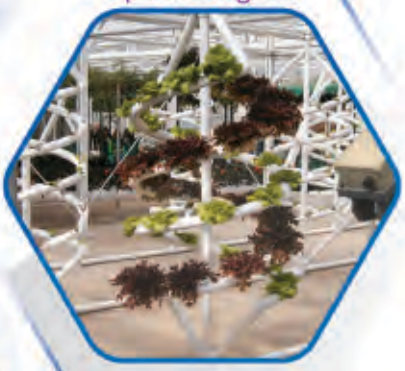

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This issue features :

- ✓ Editorial
- ✓ Technical Articles
- ✓ Regulatory Updates
- ✓ Chapter's Activities

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EDITORIAL

The Covid-19 storm has brought devastating impact on various sectors all around the globe. The change in consumer behaviour, social distancing norms, the implementation of lock down in phases in different parts of the country and the increasing risk associated with travelling is unlikely to bring back hospitality sector sales to the pre-pandemic figures. Infact, it would take more than a year for the restaurant industry to recover completely from its effects. The pandemic has also brought about a major shift in purchase behavior leaning towards healthier products and lifestylenow more than ever before. Consumers are checking nutrition labels and understanding which ingredients are beneficial and which are not. Therefore, fortified, plant based better for you packaged foods will continue to soar in post-pandemic, with preventive health, wellness and nutrition now firmly ingrained in the conscience of consumers. They are looking for products which are safer, better for health, with fewer harmful ingredients, immunity boosting and more nutritious. Social distancing norms has caused a major cut down on eating out and therefore people are choosing home deliveries over dining in. This is also why we see the rise in number of cloud kitchen setups as compared to physical restaurant spaces. As lockdown norms are being eased in various parts of the country technology is making inroads in restaurants in the form of QR code based menu cards, in order to minimize the possibilities of all forms of physical contact. The major changes in consumer behavior and therefore altering trendsin food industry, forcing them constantly innovate and experiment with new products and services to match with changing consumer expectations.

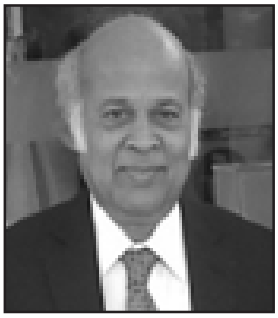
The current issue, has a line up of some interesting technical articles, the relationship between stress and nutrition, the rise of turmeric during the pandemic, and the importance of shelf life in product development. In today's tough times wherein we often see our food Gods "The Humble Farmer" often getting ignored, we have an interesting article to give us a perspective about how farmer distress can be resolved. In continuation with our motto for knowledge sharing and networking AFST(I) Mumbai Chapter, organized a series of online events Dr. J.V. Bhat Memorial Lecture, Mentorship, and Food Carnival. We have also enlisted a list of various regulatory updates in the months gone by.

As the year is coming to an end and the hope of a Covid-19 vaccine rises, it is a good opportunity for each one of us to introspect in the face of this crisis about what our real priorities and how we want to transform our lives once normalcy resumes in the post Covid-19 world.While signing off we hope that our food professional community continues to support the newsletter by providing various technical articles and sharing their career milestones. Wish you all a Very Happy New Year !

Ms. Tirtha Shah
Chief Editor – News Letter

Members are requested to send articles, achievements with photographs to afstmumbai@gmail.com

Stress & Nutrition



Dr Prakash Kondekar

Senior Member,
AFST(I) Mumbai Chapter

Since birth every person faces various forms of threats either through major or minor diseases. Stress is also responsible for many health problems. Naturoptthy Yoga, Bowen Therapy and Nutrition,can be helpful for any type of stress andin return a person can become healthy. The health of an organization depends upon the health of a persons' work enviorment as well as their home enviorment. Health can be physical, mental and social.

Oxford Dictionary defined Stressas, "a state of affair involving demand on physical or mental energy", a condition or circumstance which can disturb the normal physical & mental health of an individual. In medical parlance 'stress' is defined as a perturbation of the body's homeostasis. This demand, on mind-body occurs when it tries to cope with incessant changes in life.

Extreme stress conditions, psychologists say, are detrimental to human health but in moderation stress is normal & in many cases, proves useful! When we fail to counter a stressful situation (flight response) the hormones & chemicals remain unreleased in the blood stream for a long period of time. It results in stress related physical symptoms such as tensed muscles, anxiety, dizziness & rapid heartbeats(like Arjun in Mahabharat)). Austrian, Prof Hans Selye was pioneer in the area ofstress management. He was founder of Canadian Institute for Stress Mgmt. Selye wrote some 39 books & more than 1,700 articles on stress & related problems. He was nominated for the Nobel Prize 10 times.

Accumulated stress compels the mind & body to be in an almost constant alarm-state in preparation to fight or flight. This state of accumulated stress can increase the risk of both acute & chronic psychosomatic illnesses.

How Nutrition plays an impotant role in Management of Stress ?

Nutrition is the scientific study of the nutritional components of food and their physiological importance in the growth and maintenance of the body. Nutritional studies emphasize upon deciphering various steps and intricacies of food intake, for managing the stress.

What are the 3 types of nutrition?

There are two main types of nutrients, macronutrients and micronutrients.

The three main categories of macronutrients include carbohydrate, protein & fat.

The two types of micronutrients are vitamins & minerals & these are extra molecules that cells need for smoothening of a body during the stress.

Healthy Nutrition

It is an important part of leading a healthy lifestyle. Combined with physical activity, your diet can help you to reach & maintain a healthy weight, reduce your risk of chronic diseases (like heart disease & cancer) & promote your overall health.

Research has found that magnesium may help with brain functions that reduce stress.

Watermelon Juice, Cucumber Juice, Pineapple Juice & Lemon Juice, have

very good Stress relieving properties, so alongwith Macronutrients, like Carbohydrates, Proteins, fats, fibre and water, few of the juices could be good stress relievers.

It is important that everyone consumes seven basic nutrients on a daily basis to help them build their bodies & maintain their health during stressful situation. Foods that naturally are nutrient-rich include fruits & vegetables,lean meats, fish, whole grains, dairy, legumes, nuts and seeds.

What Causes Poor Nutrition during Stress ?

Poor eating habits include under orover-eating, not having enough of the healthy foods that one needs each day or consuming too much of food and drink which are low in fibre or high in fat, salt and/or sugar. This particularly happens when a person experiences a lots of stress.

What's a healthy food?

It's easy to incorporate healthy foods to include in the diet, of person carrying stress. These are mainly whole foods like fish, lean meat, vegetables, fruit, nuts, seeds & legumes. Along with moderateand regular exercise, eating these nutritious foods should pave one's way tosuccess and a healthier life.

What are the 2 types of carbohydrates those are useful in stressful situations?

There are two major types of carbohydrates in foods: simple and complex. Simple carbohydrates are found in refined sugars, like the white sugar seen in a sugar bowl, white bread and bakery products made from plain flour.

Dairy and dairy substitutes also can be source of good nutrients.

Choose skim milk, low-fat milk or enriched milk substitutes. Try replacing cream with evaporated skim milk in recipes & coffee. Choose low-fat or fat-free cheeses.

Choose these foods:

- Low-fat, skimmed, nut or enriched milk, like soy or rice.
- Skim ricotta cheese in place of cream cheese.
- Low-fat cottage cheese.
- String cheese.
- Plain non-fat yogurt in place of sour cream

The human body is composed of various organs & parts which are made up of tissues & cells. These tissues & cells are composed of 16 chemical elements. The acid-alkaline balance plays a vital role in this balanced body chemistry, instressful situation.

All foods, after digestion & absorption leave either an acid or alkaline ash in the body depending on their mineral composition. The normal body chemistry is approximately 20 per cent acid and 80 per cent alkaline.

Acidosis -Whenever the alkalinity of the blood is reduced, even slightly, its ability to transport the CO2 gets reduced. This results in the accumulation of acid in the tissues. This condition is known as acidosis or hypo-alkalinity of the blood which is **harmful in stressed condition.**The main cause of acidosis or hypo-alkalinity of the blood is faulty diet, in which too many acid forming foods have been consumed. In the normal process of metabolism or converting the food into energy by the body.

Diet in Stress- In the diet during disease, breakfast may consist of fresh fruits, lunch may comprise raw vegetables with acid & sub-acid fruits and for dinner, raw and cooked vegetables, or light starchy vegetables like beet, carrot, cauliflower, egg-plant and squashes may be taken.

As a stress reliever, apples, cheries, oranges, pomagrante, watermelon, mangos, banana that play an important role, not only due to vitamins and minerals but also due to other nutrients. These fruits not only are stressbusters but also help in keeping overall health of a person.

"In life, there is always a solution to a problem," says professor Cary Cooper, an occupational health expert at University of Lancaster. Thus proper Nutrition is very essentioal for Managing the stress at all times along with proper exercise or Yoga. ❑

Rise in Turmeric Products during COVID-19 Pandemic

Partishtha Khatri
M. Sc. Biotechnology
Hygiene Auditor

"From traditional medicine to modern medicine, Goodness of haldi is backed by thousand years of Indian roots of Ayurveda science and is known to strengthen immune system, also protects from day to day infection."

Turmeric is auspicious and famed for purported anti- inflammatory, anti-oxidant properties. With its inherent qualities and high content of bioactive, curcumin, turmeric is considered to be the best herb in the world which is used in Ayurveda, Japanese, Egyptian medicine & treats many diseases.

DURING COVID- 19, Consumption of turmeric rose as it boosts immune system.

Most importantly, Turmeric is a highly versatile spice that can be added to meals in many ways.

Does vegan golden milk sound interesting?

Well...

People can make" **VEGAN GOLDEN MILK**" by the ingredients: Almond milk, raw turmeric, ginger, cinnamon, cardamom & it's a best immunity booster drink one can make at home.

Can you imagine to have haldi ice-cream, chyawanprash ice-cream?

Impact of covid 19 has led several brands to come up with immunity boosting products made up of turmeric. Some of them are listed below-

1) **Amul** has launched an affordable easily accessible immunity booster beverage **AMUL HALDI DOODH** known for its anti-bacterial properties. This drink can be consumed by any age group. This costs only Rs 30.

Reference- *https://www.theweek.in/news/biz-tech/2020/04/29/amul-introduces-haldi-doodh-to-strengthen-immune-system.html*

2) **Mother dairy** also launched **TURMERIC LATTE** with the goodness of turmeric to boost immunity. This costs Rs 25.The product is much appreciated since it comes in different flavours.

Reference- *https://economictimes.indiatimes.com/industry/cons-products/food/covid-19-mother-dairy-launches-haldi-milk-to-boost-immunity/articleshow/76262859.cms?from=mdr*

3) **Dairy day**, one of the ice-cream brands in south India is set to launch **Haldi &**

chyawanprash ice-cream. The haldi ice-cream includes haldi, pepper, honey as its ingredients. Chyawanprash ice-cream includes branded chyawanprash along with dates.

Reference- *https://ruralmarketing.in/industry/advertising-marketing/dairy-day-launches-haldi-turmeric-chyawanprash-ice-creams*

4) **Haldi immunity drops** are launched by ***Dabur*** enriched with the goodness of turmeric.

This herbal tonic is 100% Ayurveda & may be useful for health issues like cold, cough, joint pain.

This should be consumed after consulting an Ayurveda physician.

Reference- *https://www.1mg.com/otc/dabur-haldi-immunity-booster-drop-otc598627*

5) One of the best things loved by every age group is chocolates.

Likely **Bogatchi** launched **turmeric milk white chocolate bar** that contains turmeric powder and milk with amazing taste. This is the best for kids as they can eat it like a regular chocolate & helps fight against diseases and infections.

Reference- *https://www.amazon.in/BOGATCHI-Chocolate-Immunity-Turmeric-Ginger/dp/B0863YWWZW*

6) Latest addition to this list is **Golden milk and golden milk**

mix developed by **ICAR- Indian Institute of spices Research, Kozhikode**. It is enriched with turmeric, ginger and cinnamon as adjuvant to boost immunity!

Reference- *https://icar.org.in/content/%E2%80%9Cgolden-milk-products%E2%80%9D-launched*

When the world is in dire need of immunity to fight against this deadly virus, there can be nothing better than including immunity boosters in food and no brand is lagging behind!

Turmeric connects tradition and medicine together, strengthens the bonds of culture, food and pharmacy together.

"**A healthy immune system leads to a healthy body, and turmeric is like a blessing to the immune system, it is a gem that never disappoints**!" ❑

Solution to Farmers' Problem

Preamble: The ideas suggested are based on my own knowledge and some figures are calculated on the basis of actual numbers with some hypothesis.

Dr. Prabodh Halde

Immediate Past President-AFST (I), Head – Regulatory Affairs, Marico Ltd.

Introduction

In the last three months so, I have observed a lot of unrest in the farmer community over commodity prices and demands for loan waivers.

In the current paper I will try to provide a long term solution to the current problems faced by the Indian Agriculture industry.

Background

70% of the population of India is dependent on Agriculture and Food Processing. The Agriculture sector is the base for most of the Food Processing industry and this sector has touched a growth rate of 5% in 2016-17. The food grain production at the all-India level is close to 245 Million MT. The Food Processing industry is growing at a 13% growth rate and for the Indian economy the growth of this industry is crucial for the overall growth of the Nation since a large population is dependent on agriculture and agricultural development is linked to food processing.

India is the number one in the production side for most of the agricultural commodities like Pulses/Tea/Dairy, etc. but we are not able to add value and reach consumers due to the poor processing percentage. Our processing of fruits and vegetable is just below 10% while developed countries process over 80%, so surely India has a huge potential to double its processing percentage to 25% in the next 5 years, which will boost the growth of Food Processing.

Problem

We see that there are four to five major commodities which are always in the news for some or other reason. These commodities are so important that they can even topple the government and it has happened in the past.

The sensitive commodities are:

1) Onions
2) Tomatoes
3) Tur dal
4) Oranges
5) Soybean

If we consider the fluctuation of these commodities over one year, sometimes it goes as high as 800% e.g. the Onion rate fluctuates from Rs. 1/kg to Rs. 50/kg in the wholesale market. Interestingly, in India there is one class called Pseudo farmers (Farmers and Traders) and they are happy to keep these commodities in a disturbed price zone to earn money. Unfortunately real farmers are always at a loss in these price fluctuations.

So the real problem for Indian agriculture industry is how to keep the prices stable along with good returns on investment for farmers.

Challenges

Indian agriculture industry has its own challenges. The farm size is very small and 80% agriculture is monsoon dependent. Most of the commodities are perishable. There is no guarantee of a market. The Government unfortunately cannot control the entire trade since the volumes are very high.

Solution

With regard to the current challenges and problems, I have some solutions to tackle the current situation and definitely they are long-term permanent solutions.

We have seen a huge fluctuation in prices for onions/tomatoes/tur dal and oranges. The basic question comes to mind - why this fluctuation?

This price variation is happening due to the supply and demand theory of economics, so let's understand the micro-agro economics.

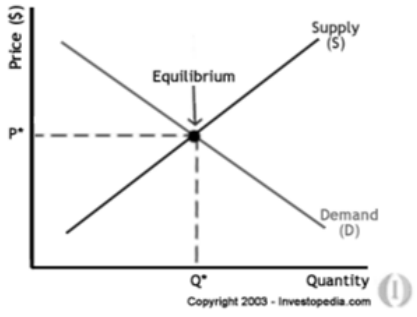
Supply and demand is perhaps one of the most fundamental concepts of economics and it is the backbone of a market economy. Demand refers to how much (quantity) of a product or service is desired by buyers. Supply represents how much the market can offer. The quantity supplied refers to the amount of a certain good which producers are willing to supply when receiving a certain price. The correlation between price and how much of a good or service is supplied to the market is known as the supply relationship.

Price, therefore, is a reflection of supply and demand.

Let's take a closer look at the law of demand and the law of supply.

Equilibrium

When supply and demand are equal (i.e. when the supply function and demand function intersect) the economy is said to be at equilibrium. At this point, the allocation of goods is at its most efficient because the amount of goods being supplied is exactly the same as the amount of goods being demanded. This is an ideal condition for agricultural goods and good returns for farmer.



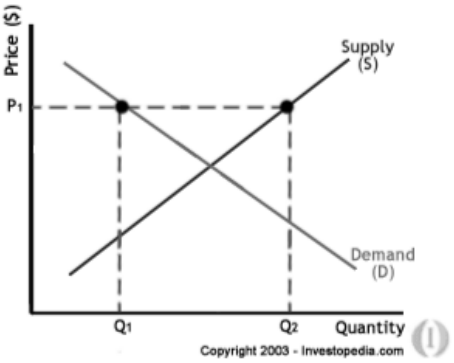
As you can see on the chart, equilibrium occurs at the intersection of the demand and supply curve, which indicates no allocative inefficiency. At this point, the price of the goods will be P* and the quantity will be Q*. These figures are referred to as equilibrium price and quantity.

Disequilibrium

Disequilibrium occurs whenever the price or quantity is not equal to P* or Q*.

1. Excess Supply

   If the supply is more than requirement, excess supply will be created within the economy and there will be allocative inefficiency.



At this condition the prices falls because of excess supply and agriculture commodities are perishable so prices falls down with low demand.

2. Excess Demand

   Excess demand is created when supply is lower than requirement and at this point the price increases.

   So ideally in agricultural commodities everyone wants a **Market Equilibrium.** In this situation the quantity demanded by consumers is correctly balanced by the quantity supplied by farmers at market price. In this situation, the market is stable and the farmer gets his return. But obviously there are some forces (natural and artificial) which act against these rules and create the imbalance on the supply side. **Fortunately in case of agricultural commodities, the demand side is mostly constant and that's the positive point in an Agricultural economy.**

The main culprit is the supply side in the case of agriculture. So can we work on it?

Story of onions

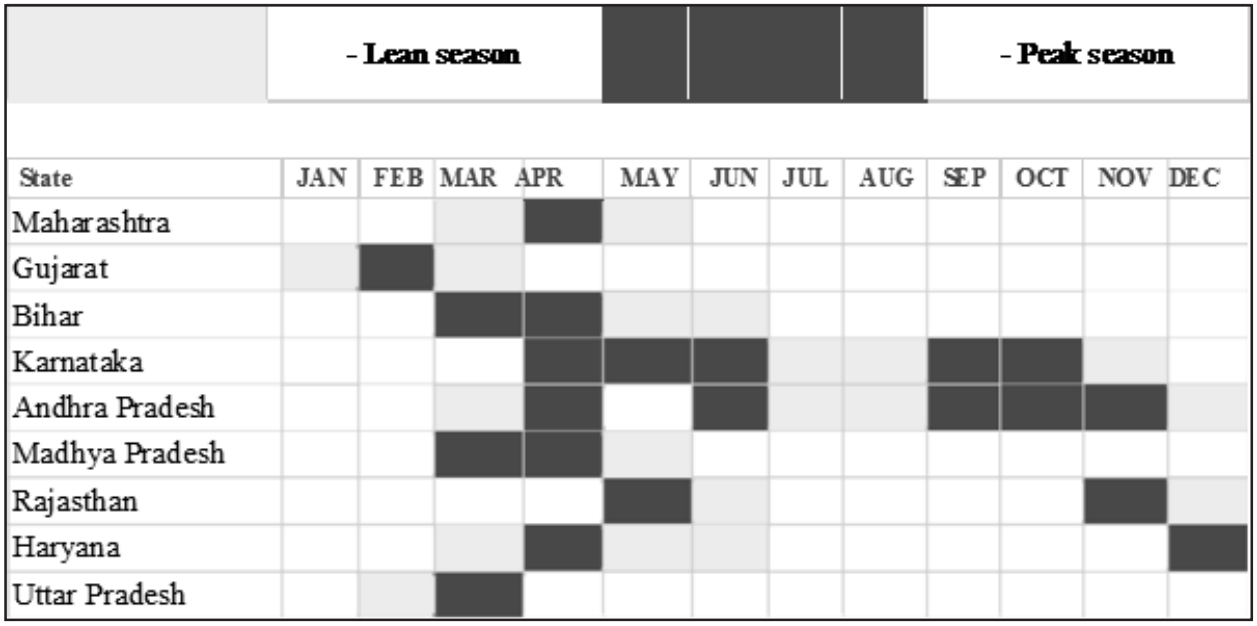
Now let's take the story of onions in detail to understand this game.

Onion (Allium cepa L) is an extremely important vegetable crop for India, not only for internal consumption but also as the highest foreign exchange earner among the fruits and vegetables. It occupies an area of 1064 thousand ha, with approx. production of 16 million MT. India also imports onion sometimes to balance the demand but the quantity is around 20,000 MT.

In India onions are grown in three crop seasons, namely *kharif (harvested in October-November), late kharif (January February)* and *rabi (April – May). Rabi* season crop is the largest, accounting for about 60 percent of annual production with *kharif* and late *kharif* accounting for about 20 percent each. Major producing states are Maharashtra, Karnataka, Madhya Pradesh, Andhra Pradesh, Bihar, Gujarat, Rajasthan and Haryana, which together account for 85 percent of total production.

Maximum onion production takes place in Maharashtra state (4905.0 thousand tons) followed by Karnataka (2592.2 thousand tons), Gujarat (1514.1 thousand tons), Bihar (1082.0 thousand tons), Madhya Pradesh (1021.5 thousand tons) and Andhra Pradesh (812.6 thousand tons). In Rajasthan, Haryana and Uttar Pradesh it is grown to some extent i.e. 494.2, 453.9 and 368.6 thousand tons respectively.

Harvesting Season Of Crop In Leading States



We can see from the above graph that Rabi (summer harvest) is the main crop for onions in India.

Mass balance

Mass balance of agro commodities might be a new concept but the time has come to implement mass balance for better understanding. To achieve the mass balance, let's understand the consumption pattern of onions in India.

Consumption pattern of onions in India

Per capita fresh onion consumption has shown a significant growth in recent years. On an annual basis per capita fresh onion consumption works out to be 9 kilograms in rural areas and 10 kilograms in urban areas. So even if we consider moderate 9kg/ person/yr as consumption rate, for the population of 130 crores our total consumption figures comes to 11.7 Million MT per year. Furthermore, the mushrooming of eateries and fast food chains and the increasing trend towards eating out also must have added to increasing consumption of onions. Being an essential ingredient in most non-vegetarian cooking, the increasing consumption of meat and poultry meat should also translate into increased onion consumption. Besides, about 1 million tons of onion goes for further processing such as dehydration, pickling, etc. Seed use of onion bulbs is estimated to be around 50,000 tonnes per year. Also there is export of around 200,000 MT every year. Also there would be a post-harvest loss of around 20%.

Summary of mass balance

Total Production : 160 Lakhs MT

Real Post harvest losses : 24 Lakhs MT

(*15% since there is also a market of damaged crops in India)

Import quantities are not considered since these are negligible

Product available for market : 136 Lakhs MT

Consumption:

Total Fresh consumption : 117 Lakhs MT

Total Export : 02 Lakhs MT

Total Processing : 13 Lakhs MT

Total as seeds : 0.5 Lakhs MT

Other use : 3.5 Lakhs MT

Thus from the above figures, it is very clear that India produces enough onions to meet the actual demands of society. There is no major deficit.

So where is the issue?

So theoretically India produces close to the requirement of the actual demand but still there is a 800% fluctuation of prices; why? The reason is that the supply is not constant to the market.

Interestingly, as explained above, the total fresh onion demand is 117 Lakhs MT per annum or 9.7 lakhs/ month, but on the supply side, 60% crop comes in the months of summer viz. March to May. Also there are

pockets of production centres and the demand is distributed all across India. This create an imbalance and a **Disequilibrium impacting the variation in prices of onion to over 800%.**

What is the solution?

The positive point in the onion story is:

1) Annual Demand is constant with little variation
2) Total demand v/s Production gap is not bigger than 10%

So to bring about a solution we need to work on the supply side. Now before going to the onion solution let's see how we have achieved a miracle in the Milk industry.

Learning from the Milk industry

Milk is the most perishable commodity with a high fluctuation in supply. Also this is a commodity with daily production, unlike rabi and kharif seasons.

In the milk industry, the dairy works as a buffering agent between the farmer and the consumer.

So, if the market demand of one city is X litres and production is Y litres, what the dairy industry does is - they process excess milk and supply only the required quantity to the market thus balancing the supply and demand and creating the **Market Equilibrium**. Now you will understand why milk prices are always stable (yes there would be a rise due to higher demand) and not fluctuating over 10%.

Here the main point to be noted is processing of excess milk and diverting only required milk to the market.

In the case of Onions can we apply the milk formula? The answer is 'Yes'.

Following actions can be initiated in the Onion industry to stabilize the prices:

1) Onion farmers' entire actual production data to be monitored
2) Collection centers to be established for onions near the production places
3) Demand of each city (say block) to be calculated month-wise and day-wise
4) Collection centres will work as buffering agents
5) Collection centres can be established under PPP scheme
6) Rs. 1/kg can be the rate given for collection centre handling
7) Collection centres will collect and do the following activities: a. Receiving / weighing / cleaning / packing Supply to the city / market will happen through collection centers based on demand.

Entire excess produce received will be distributed to:

1) Other centers
2) Cold storage
3) Export
4) Further processing :

(a) Minimally processed onions: These are peeled and/or cut onions ready to use that retain their freshness, packed in suitable packaging material and stored at refrigerated conditions or frozen conditions.

(b) Onion paste: Onion is ground yet retains its freshness. Preparation of minimally processed onions and onion paste entails optimization of proper preservatives and packaging materials to increase the shelf life of these products.

(c) Dehydrated onions: Dehydration of onions reduces the bulk to transport and also increases the shelf life of onions significantly due to less moisture, which arrests the growth of microorganisms. Dehydrated onion flakes can be processed into onion powder by proper grinding. Onion powder dissolves very easily and reconstitutes quickly compared to onion flakes. Onion powder incorporates the flavour of onion in a variety of foods. Use of suitable packaging techniques is the most important to increase the shelf life of dehydrated onion flakes and powder as these are very hygroscopic in nature.

(d) Pickles: An age old practice to preserve the onions is by means of a process called pickling. Most widely used pickling for onions are vinegar based pickling and oil based pickling. While vinegar based pickling is popular in the United States and Europe, oil based pickling is widely adopted in Asia and Africa.

(e) Oil: It is another flavouring substance which is widely used in the seasonings of processed products. Onion oil is also used as a natural food preservative in some food products. Onion oil can be extracted by different methods like distillation, solvent extraction, super critical fluid extraction, etc.

(f) Vinegar/Beverage/Sauce: As onions are rich in sugars and other nutrients they can be processed into onion vinegar and onion wine. Onion can also be processed into onion beverage and onion sauce.

The waste generated at collection centres should be properly

handled by using modern techniques.

Onion waste processing

(1) Source of fiber: The skin of an onion bulb is found to be a rich fibre. After harnessing the colour from the dry skin by decolouration, the resultant product is converted into a fibrous material which can be used as a fiber supplement. The same fibrous material can be used as a thickening agent and an exemplary use is in making soup.

(2) Natural colour: The colour extracted from onion skin can be used as a natural dye. The dry skin of onion is found to contain flavonoids. Onion essence which is used as a flavouring agent can also be extracted from the skin of an onion bulb.

(3) Bio-gas: Other resultant materials like outer layers, roots and stalks can be anaerobically digested in a bio-digester to produce alternative energy sources like bio-gas.

So by supplying the required quantities to the market, the price of onions will be stabilized and then pseudo-farmers / traders / middlemen will not have any scope of hoarding and creating a black market. **We will attack them at their source. If this can happen in the milk industry, then surely it can happen for the onion industry also.**

But to achieve the above things, we have to create some infrastructure changes and make investments in basic agro-processing such as cold storage / processing equipment, etc. and will also need some relaxation in agro processing licensing requirements. It should be a farmer-friendly industry.

In a similar way we can do a tomato mass balance, tur dal mass balance and soybean mass balance.

Conclusion & Action forward :

In order to manage the current situation the following measures can be taken:

1) Understand the true demand of market and restrict supply of key commodities to market as per demand

2) All excess supply can go to processing/export/cold storage as per requirement

3) During lean seasons, the cold storage produce can be supplied to market to stabilize the prices

4) Create collection centers for key commodities to balance the supply and demand. Use farmer's producer organization (FPO) as partner.

5) Create collection centers with PPP schemes & FP0

6) Give incentives to agro industry to invest in infrastructure for these key commodities and have minimal licensing requirements (except food safety license)

7) Encourage the processing of key commodities and ensure processed products can be used by the Hotel industry.

8) Agriculture policy should focus on both process able and table varieties. Agriculture universities to work on process able varieties for high yields.

9) Processable variety should be high-yielding and low-priced so it is economical for producers. **Farmers should focus on total returns per acre rather than minimum support price**.

10) Once farmers know the prices in advance they can plan their budget and expenses (again the milk story)

11) Government should release high-yielding varieties and pest-resistant varieties for farmers. Agricultural universities should be given such mandates.

12) Agro industry should be declared to be an extension of agriculture and tax holidays should be given so that agro processing will be encouraged

13) Export policy should be declared in advance to help plan the production

I firmly believe the middle man/ broker should work towards upliftment of the sector and they also should earn money by value addition to the services like in other sector not by squeezing the farmers. In above suggestion even the middle chain also will be working and get their commission equal as per their value addition. In short over all every one starting from farmer to consumer will be benefited since commodity prizes will be stable for long period.

I don't guarantee that this formula will give results in one year, but for sure, if we work towards a complete solution, farmers will be happy and fluctuation in the market will reduce to a great extent.

This will definitely bring our slogan true – ***"Bahujan sukhaya, bahujan hitai'.***

References

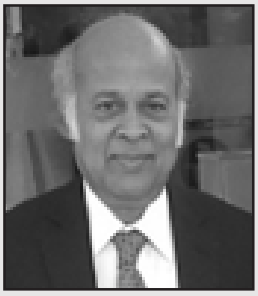
1) http://www.dogr.res.in/index.php?option=com_content&view=article&id=68&Itemid=108&lang=en

2) http://apeda.gov.in/apedawebsite/SubHead_Products/Onions.htm

3) http://nfsm.gov.in/Meetings_Minutes/NCAER/ResearchPapersNCAER/4%20India%20Onion%20Sector.docx.

❑

Member Achievements



Dr. Prakash Kondekar, Senior Member, AFST(I) Mumbai Chapter, particpated few workshops and webinars on Food and Nutrition during pandemic period.Afew of them listed below with Photos.

1. On 7th June 2020, International Food Safety Day, for Natural Eco Living Group, Hydrabad, on Safe and Nutritious Food.
2. On 20th June 2020, on Food Fraud & Detection, for NELG, Hydrabad.
3. On 26th June 2020, on Stress Mgmt for Immunity, for Friends of Yoga, Dubai. (Internatinal Webinar)
4. On 30th June 2020, On Nutrition for Stress Mgmt, for Airport Authority of India, Mumbai Airport.
5. On16th July, 2020, on Ayurveda and Naturopathy for Obesity for UK webinar.

Prof. Uday Annapure, Head, Food Engineering and Technology Department, Institute of Chemical Technology, Mumbai has become the Director of the Institute of Chemical Technology, Jalna Campus.

SHELF LIFE ... An Important Aspect Of The Food Product

Padmaja Shetye
FBO Consulting and Technical Services

INTRODUCTION : shelf life is an important point need to be consider at the time og product development , product launch , marketing of the product , Some product are will get large market on the bases on the basis of shelf life for Eg. Tetra pack milk has 4to 6 month of shelf life which is much higher than normal milk packed in poly bag or glass bottle . Shelf life is defined as the time, under defined storage conditions, during which food remains safe, retains desired sensory, chemical, physical and biological characteristics as well as complies with any label declaration.

What is Shelf Life :

This is a date which will indicate period in which the product is safe to consume . as per FSSAI . The shelf life of a product begins from the time the food is prepared or manufactured. Its length is dependent on many factors including the types of ingredients, manufacturing process, type of packaging and how the food is stored. It is indicated by labeling the product with a date mark.

Why shelf life is important

Shelf life will indicate how long a food will retain its quality throughout storage

Confirm safety of the product

Shelf life period ensures appearance, odour, texture and flavour

The product should meet nutrient content claim throughout shelf life.

What are regulations relating to shelf life

In India we follow FSSAI regulations , in case of shelf life and declaring the same on the label is included in FSS regulation on packaging and labeling .

Based on FSS regulations on labeling following points need to be considered.

Shelf life can be declared with statement of Best Before or with help of "Use by Date".

FSSAI has given format to declare Best before declaration from manufacturing, packing, FBO should use these formats to declare Best before date.

Alcoholic beverages having more than 10% alcohol and carbonated water are exempted from the declaration pf Best before Date.

Products which are having more shelf life can be declared with using Months.

Products with lower shelf life can be declared with help of Days.

In case of Infant product a specific date or expiry and use by shall be given on label.

Who is responsible for Shelf life declaration

Manufacturer : Manufacturer is one who manufactures product , test the product Manufacturer is fully responsible of product safety and quality of the product , he need to conduct shelf life study either real time or on accelerated study and decide shelf life of product.

Packer : If packer is buying the product in bulk and again packing it into small packs then packer is responsible for safety and quality of product as . He need to understand and conduct shelf life study of the product and declare the same on label.

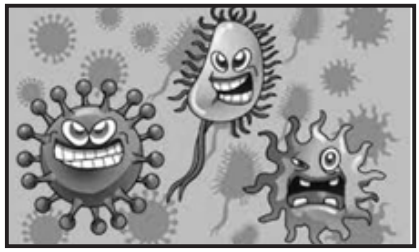
Distributor : transport the food product from the manufacturer to the retailer. It is essential that food is stored safely and securely in the warehouse, transported at the correct temperature, delays are avoided, and packaging is not damaged. Consideration should also be given to the possibility of contamination of the food from other goods carried in the vehicle.

Retailer : retailer should store the product as per direction given on the label and make sure the product is safe to consumer as per shelf life declaration

Consumer : At the end of chain consumer should be aware and should able to understand the overall product and how to check shelf life of the product . Consumer should read all safety declaration like storage condition , instruction for use , allergen declaration , ingredient and shelf life that it best before or expiry date of the product.

Factors influencing shelf life of the product

Microbial Growth :Presence and growth of Micro-organism are responsible for spoilage of the product and in other word poisoning of food product Microbes can enter in the product in case of wrong processing or inaccurate processing , contamination at the time of packing , storage and transportation of product.



Growth of micro-organism depend upon the product amount of nutrients present in the product , form of product , moisture level of the product , storage condition and handling of the product.

Eg : Microbial growth of Bread due to availability of high moisture , high fat , curdling milk due to high moisture and availability of high protein.

Non Microbial Factors

Moisture gain / loss: Increase in moisture will support growth of Micro-organism and loss in moisture will affect texture of the product.

Chemical changes : Will effect texture and overall taste of the product as well as growth of the microbes.

Light induced changes: will effect taste , and chemical composition.

Temperature changes : will effect overall product texture consistency.

Eg: blacking of Fruit exposure o oxygen and light , melting of Chocolate and ice cream due to improper storage condition.

Others

Spoilage by rodent and insect.

Flavors and odors from storing food near other strongly smelling product.

Product Tampering

What is shelf life study?

Shelf life study is study conducted to determine shelf life of the product , Shelf life will conduct period for which product remain safe and in position to consume . Not only safety aspect but also the other sensory parameters like color , appearance , aroma , gloss ,Taste , constancy texture should remain acceptable till the end of the shelf life

Direct Method : This is the one most commonly used. It involves storing the product under preselected conditions for a period of time longer than the expected shelf life and checking the product at regular intervals to see when it begins to spoil. The exact procedure is unique for each product.

Indirect method : This approach uses accelerated storage and/or predictive microbiological modeling to determine a shelf life.

How to determine shelf life with help of direct method

Identify what may cause the food to spoil or become unsafe

Every product will have its own factors that may limit its shelf life At the same time, identify those factor and also identify the factors that help prolong the shelf life. Also consider manufacturing process , from the purchase of ingredients and packaging materials right through to the end use by the consumer.FBO should also taste the product in all season for eg. We will have to understand travelling temperature during summer season for ice cream and chocolate

PRODUCT RELATED SPOILAGE:

Raw material : raw material is an important factors of the product , its quality , cosistancy will affect overall quality of the final product

Product make-up: Along with quality of ingredient , actual ingredient and stage of ingredient will also effect final product shelf life , for eg , use of skimmed milk will lead to growth of microorganism but skimmed milk powder will reduce rate of growth of microbes

Water activity. This is the amount of water in a food that that is available to be used by microorganisms. Microorganisms need water to grow. Water activity can be reduced by the addition of salt, sugar and some other

ingredients. Jam is a moist food but the large amounts of sugar it contains mean only a small amount of this water can be used by microorganisms.

pH. This is a measure of acidity or alkalinity. The pH will influence which microorganisms will survive and grow in a food. Acidophilic organism can grow in acidic environment also.

Oxygen availability.: O2 is an important fact in the growth of microorganism , it will also effect the texture of the product . By removing air from around food, or using vacuum packaging, or modified atmosphere packaging, the food's shelf life may be extended. However, some microorganisms can grow in environments without oxygen so production processes need to control these microorganisms as well.

Manufacturing process related to spoilage

Processing. Processes include anything from mixing, salting, smoking, fermenting, heating, cooling and chilling to dehydration, freezing and heat sterilisation. The choice of process can alter the shelf life of the final product. For example, UHT milk is a sterilised product and has a longer shelf life than pasteurised milk as the heat treatment is much greater. If product is not processed as per standard process then it may lead to spoilage of the product.

Packaging. Packaging must protect the product from contaminationduring all subsequent steps including distribution, sale and domestic storage.

Storage.: Storage is an important factor during which product can spoil in not store properly.

Which Test to use ?

SENSORY EVALUATION: This can be carried about with using multiple method like Dio trio , triangle test , rating mtheod , ranking test to understand change in the product throughout the shelf life , . Samples can be compared with standard/ control product for better understanding of changes.

MICROBIOLOGICAL EVALUATION

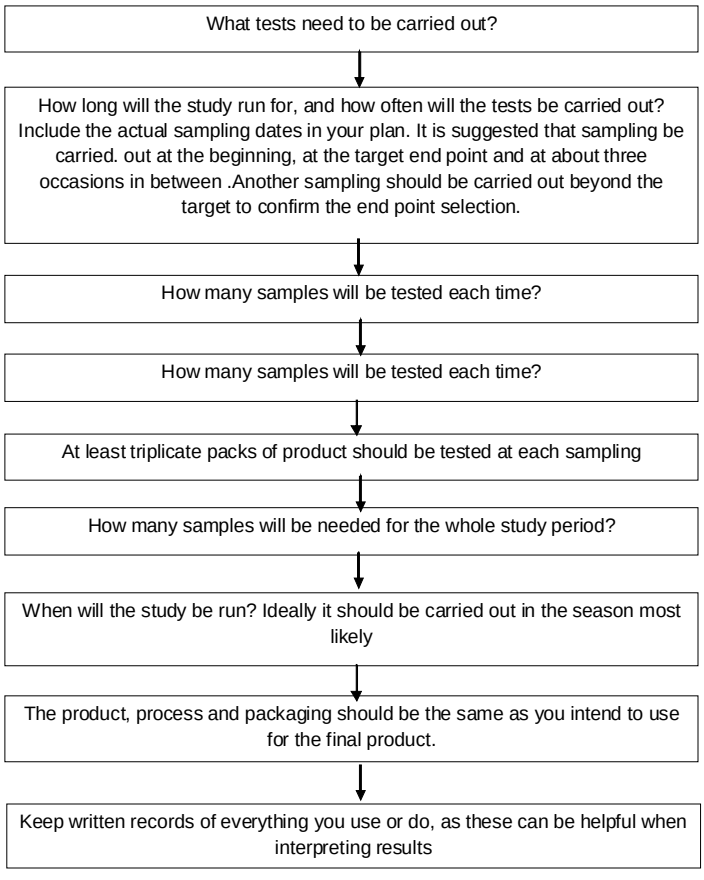
These tests can be used to evaluate both food quality and safety. Tests may be done to estimate changes in the number and type of spoilage organism (yeasts, moulds or bacteria) occurring over time. Identification of any food poisoning organisms present is important for food safety. Tests required will depend on the particular product. Microbiological standards and guidelines give guidance on the types of organisms and their number that can be considered acceptable, or unsafe, in a food.

CHEMICAL:- Chemical tests can detect changes in the product's quality throughout its shelf life. Examples of instrumental chemical tests include pH, headspace gas analysis, free fatty acids and total volatile nitrogen.

PHYSICAL: This test will conduct to observe the performances of the product in market, for e travelling test of the ice cream during summer, Travelling test of fragile products like chips through road transport .This will not only confirm product quality but also strength of packaging material.

Plan the shelf life study

Consider the following points when preparing your detailed shelf life study plan:



Run the shelf life study

Start conducting shelf life study on the basis of the points discussed above and maintain the records to finalized the result

Determine the shelf life

Eventually a point is reached when the product no longer meets the quality standard. Using all the information you have recorded and observed, decide how long the product can be kept and still be of an acceptable quality and safety. Maximum storage times for quality and safety may not be the same. The shelf life of a product should be which ever is shortest.

What are indirect methods?

Indirect methods attempt to predict the shelf life of a product without running a full length storage trial; hence, they can be useful for products with long shelf lives. The two most common indirect methods are:

ACCELERATED SHELF LIFE STUDIES

The trial period is shortened by deliberately increasing the rate of deterioration. This is usually done by increasing the storage temperature. The results are then used to estimate the shelf life under normal storage conditions.

PREDICTIVE MODELLING

Predictive models are mathematical equations which use information from a database to predict bacterial growth under defined conditions. Predictive models can be used to calculate the shelf life of a food. Information on the changes that occur in the product when it deteriorates, the properties of the product and packaging is required for the calculations. Most predictive models are specific to particular types of organisms. ❑

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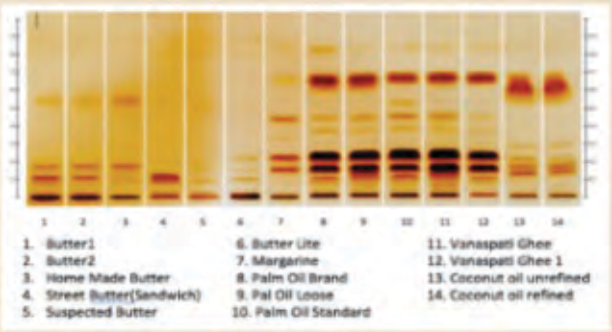
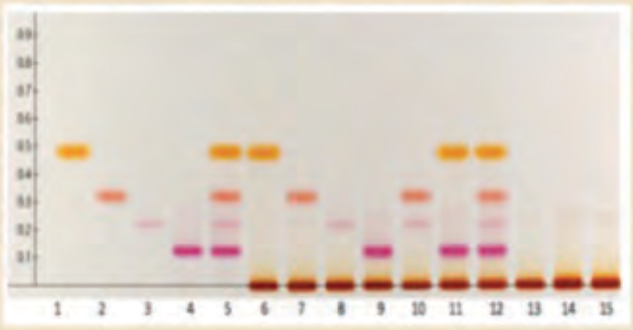
ANCHROM

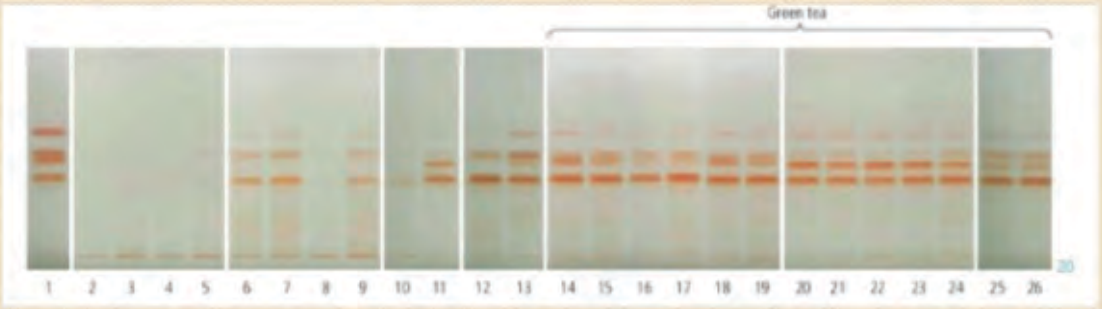
CAMAG HPTLC detects adulteration



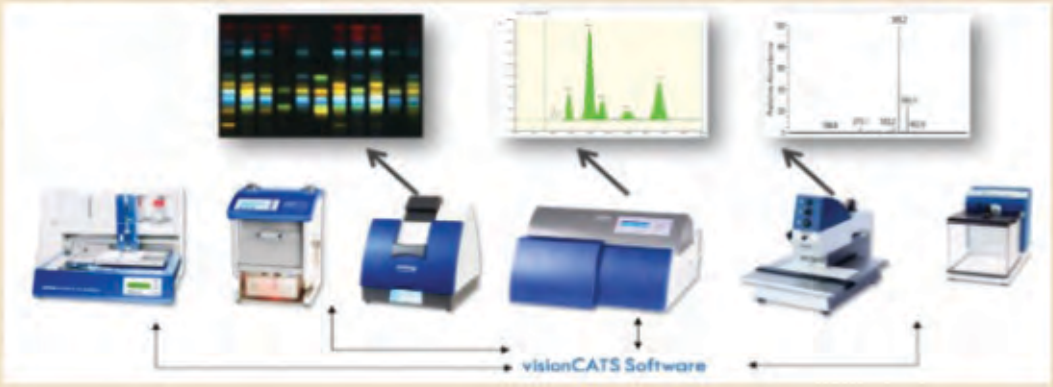
Detection of adulteration with Palm oil



Detection Of illegal dyes in Chili powder



HTPLC fingerprint (polyphenols) of tea samples (on different plates) representing different types and different geographical origin.



For Free Training, Analysis, further details Contact:

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Tel: 091 22 21639928-31/7506792123101,
India Web: www.anchrom.in
https://www.linkedin.com/company/13428283/admin/

Regulatory Updates from June 2020 to December 2020

Advisories / Orders

Sr.No.	Name	Date
1.	Direction under Section 18(2)(d) read with section 16 (5) of Food Safety and Standards Act, 2006 dated 22nd June 2020 regarding operationisation of certain provisions of draft Food Safety and Standards (Alcoholic Beverages) Amendment Regulations, 2020 and draft Food Safety and Standards (Food Product Standards and Food Additive) Amendment Regulations, 2020	23rd June 2020
2.	Letter dated 25th June 2020 related to Extension of timeline for compliance with Food Safety and Standards (Recovery and Distribution of Surplus Food) Regulations, 2019	26thJune 2020
3.	Letter dated 29th June 2020 related to Surveillance on use of stapled tea bags	29th June 2020
4.	Order regarding Method for estimation of “ä13C fru-glu, “ä13Cmax and Foreign Oligosaccharides in Honey	29th June 2020
5.	Letter dated 29th June 2020 regarding Enforcement and Surveillance drive to ensure availability of blended edible vegetable oil (BEVO) with AGMARK certification	29th June 2020
6.	Direction under Section 18(2)(d) read with Section 16 (5) of Food Safety and Standards Act, 2006 dated 01st July 2020 regarding operationalization of the Food Safety and Standards (Food Product Standards and Food Additive) Amendment Regulations, 2019	2nd July 2020
7.	Corrigendum dated 06th July related to Order dated 04th June 2020 regarding SMR Method in Honey	7th July 2020
8.	Letter dated 07th July 2020 related to Standard Operating Procedures (SoP) for reactivation of rejected applications and Change in User Profile including new login credentials, email ID and Mobile number etc.	7th July 2020
9.	Order dated 13th July 2020 regarding Methods of analysis of Fortificants and Formulated Supplements for Children	13th July 2020
10.	Letter dated 16th July 2020 regarding Surveillance andd enforcement to prohibit sell of Health Supplement and nutraceutical products contains PABA (Para Amino Benzoic Acid) a banned ingredient	16th July 2020
11.	Office Memorandum dated 23rd July 2020 regarding Preventive measures to contain the spread of COVID-19	23rd July 2020
12.	Office Memorandum dated 24th July 2020 regarding Preventive measures to contain the spread of COVID-19	24th July 2020
13.	Extension of timeline for compliance with the direction dated 27th January, 2020 regarding compliance of commercial feeds/feed materials intended for meat and milk producing animals with relevant BIS standards	24th July 2020
14.	Order dated 24th July 2020 related to Directions regarding display of “Date of Manufacturing” and “Best before Date” in case of sweets	24th July 2020
15.	Office Memorandum dated 30th July 2020 regarding Preventive measures to be taken to contain the spread of novel Coronavirus – Attendance	30th July 2020

16.	Order dated 31st July 2020 regarding Orders issued by FSSAI giving relaxations to the FBOs during the lockdown due to COVID-19	31st July 2020
17.	Order dated 31st July 2020 regarding Extension of Grace Period till 31st December 2020 for applying for renewal of Licenses or registrations	31st July 2020
18.	Order dated 31st July 2020 regarding Extension of validity period of enrolment letter issued to Biodiesel Manufacturer for collection of used cooking oil from Food Business Operators	4th August 2020
19.	Letter dated 11th August 2020 regarding Compliance for labelling requirements on products covered under FSS (Food or Health Supplements, Nutraceuticals, Foods for Special Dietary Use, Foods for Special Medical Purpose, Functional Foods and Novel Foods) Regulations, 2016	11th August 2020
20.	Order dated 17th August 2020 related to Notification of FSSAIs Designated Officer for Central Licensing under Section 36 of FSS Act, 2006	18th August 2020
21.	Order dated 18th August 2020 regarding Standards Operatng Procedure (SoP) for applying and processing of refund of erroneous / inadvertent payments credited into FSSAI Account in respect of license / registration fee	18th August 2020
22.	Direction under 18(2)(d) read with section 16 (5) of Food Safety and Standards Act, 2006 dated 17th August 2020 regarding re-operationalisation of Food Safety and Standards (Food Products Standards and Food Additives) amendment Regulations, 2020 with respect to the requirements for animal feed	18th August 2020
23.	Direction under Section 16 (5) of Food Safety and Standards Act, 2006 dated 19th August 2020 regarding operationalisation of Food Safety and Standards (Licensing and Registration of Food Business) Amendment Regulations, 2020	19th August 2020
24.	Letter dated 18th August 2020 related to Adulteration of edible oil with DAG / Synthetic Oil	19th August 2020
25.	Order dated 21st August 2020 related to requirement of Non-GM cum GM free certificate accompanied with imported food consignment	21st August 2020
26.	Office Order dated 24th August 2020 related to Modification of the Structure and sanction strength of FSSAI Headquarter, Regional Offices & Laboratories	24th August 2020
27.	Order dated 24th August 2020 regarding Waiving off the penalties during COVID-19 pandemic period due to non submission of Annual / Half-Yearly returns by food businesses in previous years	25th August 2020
28.	Revised Direction under Section 16 (5) of Food Safety and Standards Act, 2006 dated 21st August 2020 regarding operationalisation of Food Safety and Standards (Licensing and Registration of Food Businesses) Amendment Regulations, 2020 and Food Safety and Standards (Food Products and Food Additives) Amendment Regulations, 2020 relating to limit of naturally occurring formaldehyde in fresh water and marine fish	25th August 2020
29.	Letter dated 31st August 2020 regarding Standardized list of documents for FSSAI license	31st August 2020
30.	INFOSAN Alert dated 01st September 2020 on contamination of Brazil nuts by-product with Salmonella Sp.	1st September 2020

31.	Letter dated 02nd September 2020 related to Enhancing surveillance, sampling and Enforcement to check the use of Golden Syrup / Invert Sugar Syrup / Rice Syrup in Honey	2nd September2020
32.	Order dated 01st September 2020 regarding Appointment of Designated Officer as Registering Authority in Indian Railway (i.e. one Registering Authority per Indian Railway Zone)	3rd September 2020
33.	Letter dated 07th September 2020 related to Licensing carrying out food businesses operations by the Municipalities of Delhi / New Delhi	7th September 2020
34.	Direction dated 08th September 2020 related to Advisory regarding strict compliance with provisions of Infant Milk Substitute, Feeding Bottles and Infant Food (Regulation of Production, Supply and Distribution) Act, 1992 (41 of 1992) as amended from time to time	9th September 2020
35.	Direction under Section 16 (5) of Food Safety and Standards Act, 2006 dated 10th September 2020 regarding extension of timeline for compliance of sub-regulation 3 (9) relating to Printing inks for use on food packages of the Food Safety and Standards (Packaging) Regulations, 2018	11th September 2020
36.	Advisory dated 15th September 2020 regarding Section-61 Punishment for False Information of FSS Act, 2006	18th September 2020
37.	Letter dated 17th September 2020 regarding Licensing of Infant Food other than those specified under sub-regulations 2.1.19 of Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011	18th September 2020
38.	Order dated 21st September 2020 regarding RAMAN 1.0	21st September 2020
39.	Direction under Section 16 (5) of Food Safety and Standards Act, 2006 regarding operationalisation of Draft Food Safety and Standards (Prohibition and Restriction on Sales) Amendment Regulations, 2020 with respect to Prohibition of Blending in Mustard Oil	23rd September 2020
40.	Order dated 24th September 2020 regarding Prohibition of the production of Blended Edible Vegetable Oil of mustard Oil	24th September 2020
41.	Order dated 25th September 2020 related to Directions regarding display of "Date of Manufacturing" and "Best Before Date" in case of sweets	25th September 2020
42.	Direction dated 25th September 2020 regarding Form of Notice (Form VA) to the Food Business Operator	25th September 2020
43.	Direction dated 25th September 2020 regarding Placing of Food Safety on Wheels (FSW) at Khoya Mandi for testing of adulteration in Khoya	25th September 2020
44.	Direction under Section 16 (5) of Food Safety and Standards Act, 2006 dated 28th September 2020 regarding operationalisation of Food Safety and Standards (Licensing and Registration of Food Business) Amendment Regulations, 2020	29th September 2020
45.	Letter dated 28th September 220 related to Extension of date for mandatory food safety audit of Food Businesses under the FSS (Food Safety Audit) Regulations, 2018	29th September 2020
46.	Letter dated 30th September 2020 related to Direction regarding display of "Date of Manufacturing" and "Best Before Date" in case of Sweets	1st October 2020

47.	Public Notice dated 12th October 2020 regarding Launch of Second Phase in FoSCoS in remaining 27 States / UTs wef 26th October 2020	12th October 2020
48.	Office Order dated 13th October 2020 regarding Notification of Authorised Officers under Section 25 read with section 47(5) of FSS Act, 2006 and Regulation 13(1) of FSS(Import) Regulation, 2017	13th October 2020
49.	Clarification dated 12th October 2020 related to Requirement of Non GM cum GM free certificate to accompany imported food consignments	13th October 2020
50.	Letter dated 09th October 2020 related to Audit of Meat / Sweet Shops all over India	13th October 2020
51.	Letter dated 19th October 2020 related to Extension of date for mandatory food safety audit of Food Businesses under the FSS (Food Safety Audit) Regulations, 2018	22nd October 2020
52.	Order dated 22nd October 2020 related to Appointment of Designated Officer for India Railways under Section 36 of FSS Act, 2006	23rd October 2020
53.	Order dated 29th October 2020 regarding Extension of period for Modification of License by Existing FSSAI licensed Manufactures without modification fee	29th October 2020
54.	Direction under Section 16 (5) of Food Safety and Standards Act, 2006 dated 28th October 2020 regarding import of speciality foods for IEM and hypoallergenic conditions	3rd November 2020
55.	Order dated 04th November 2020 regarding Grant of Advance - Special Festival Package to Government Servants	4th November 2020
56.	Order dated 06th November 2020 related to Exclusion of Food Category "13" (Foodstuffs intended for particular nutritional uses) from the scope of Proprietary Foods	6th November 2020
57.	Order dated 09th November 2020 related to Clearance of imported consignments of Pulses	9th November 2020
58.	Office Order dated 05th November 2020 related to Notification of FSSAIs Designated Officer for Central Licensing in Ladakh& J&K UTs under Section 36 of FSS Act, 2006	9th November 2020
59.	Order dated 10th November 2020 regarding Method for Total pollen count and plant element in Honey	10th November 2020
60.	Order dated 27th October 2020 related to Constitution of Food Safety Risk Assessment Committee (FSRAC) for providing scientific and technical support during food safety emergency situation in the country	11th November 2020
61.	Order dated 27th October 2020 related to Constitution of Food Safety Coordination Committee (FSCC) for managing food safety emergency situation in the country	11th November 2020
62.	Direction under Section 16 (5) of Food Safety and Standards Act, 2006 dated 16th November 2020 regarding operationalisation of Food Safety and Standards (Licensing and Registration of Food Businesses) Amendment Regulations, 2020 and Food Safety and Standards (Food Products and Food Additives) Amendment Regulations, 2020 relating to limit of naturally occurring formaldehyde in fresh water and marine fish	17th November 2020

63.	Order dated 29th October 2020 related to Setting up of Sterring Committee and Executive Committee for Eat Right India	20th November 2020
64.	Order dated 20th November 2020 related to Setting up of Steering Committee vide Order (F.No. 1/Eat Right India/SBCD/FSSAI-2020-21) dated 29.10.2020	20th November 2020
65.	Office Order dated 25th November 2020 related to Notification of FSSAIs Designated Officer for Central Licensing in Delhi, Rajasthan, Uttrakhand, Himanchal Pradesh and Haryana under Section 36 of FSS Act, 2006	25th November 2020
66.	Order dated 03rd December 2020 related to requirement of Non-GM cum GM free certificate accompanied with imported food consignment	3rd December 2020
67.	Direction under Section 18 (2) read with Section 16 (5) of the Food Safety an Standards Act, 2006 dated 04th December 2020 regarding operationalization of the Food Safety and Standards (Prohibition and Restrictions on Sales) Amendment Regulations, 2020 relating to incidental presence of Khesari Gram / Dal	4th December 2020
68.	Withdraw of Direction dated 23.09.2020 regarding operationalisation of Draft Food Safety and Standards (Prohibition and Restriction on Sales) Amendment Regulations, 2020 with respect to Prohibition of Blending in Mustard Oil	4th December 2020
69.	Order dated 04th December 2020 related to Revised FSSAI Manual of Methods of Analysis of Foods – Mycotoxins	4th December 2020
70.	Letter dated 04th December 2020 related to Extension of tenure of Hygiene Rating Agencies recognised by FSSAI for verfification of Hygiene Rating of food establishment	4th December 2020
71.	Direction under Section 18(2)(d) read with Section 16 (5) of Food Safety and Standards Act, 2006 dated 07th December 2020 regarding operationalization of certain provisions of draft Food Safety and Standards (Food Product Standards and Food Additive) Amendment Regulations, 2020	7th December 2020

Gazette Notifications

Sr.No.	Name of Notification	Date
1.	Gazette Notification of NABL Accredited Laboratories under section 43(1) of FSS Act	17th February 2020
2.	Gazette Notification of NABL Accredited Laboratories under section 43(1) of FSS Act	30th July 2020
3.	Food safety and Standards (Prohibition and Restrictions on sales) First Amendment regulations related to sale of beverages containing artificial sweeteners through vending machines	30th July 2020
4.	Food Safety and Standards (Laboratory and sample Analysis) First Amendment Regulations, 2020 w.r.t.Rapid Analytical Food Testing Kit, Equipment or Method	30th July 2020
5.	Food Safety and Standards (Food Products Standards and Food Additives) First Amendment Regulations, 2020 relating to microbiological standards for meat, milk and fruits and vegetables and the requirement for Salmonella in poultry (Chicken) meat	30th July 2020
6.	Gazette Notification on Food Safety and Standards (Food Products Standards and Food Additives) Fifth Amendment Regulations, 2020 prescribing standards for frozen beans, frozen cauliflower, frozen peas and frozen spinach notified vide F.No. A-1/Standard/Agmark/2012-FSSAI (p+1) dated 23rd July 2020	3rd August 2020

7.	Gazette Notification on Food Safety and Standards (Food Products Standards and Food Additives) Fourth Amendment Regulations, 2020 relating to Canned or Retort Pouch Meat Products, Comminuted or Restructured Meat Products, Cured or Pickled and Cooked or Smoked Meat Products, or both, Dried or Dehydrated Meat Products, Cooked or Semi-Cooked Meat Products, Fresh or Chilled or Frozen Rabbit meat, Marinated Meat Products, Fermented Meat Products	14th August 2020
8.	Gazette Notification on Food Safety and Standards (Food Products Standards and Food Additives) Second Amendment Regulations, 2020 relating to Wheat Bran, Non Fermented Soybean Products.	14th August 2020
9.	Gazette Notification on Food Safety and Standards (Food Products Standards and Food Additives) Third Amendment Regulations, 2020 relating to standards of Rice, Chia Seeds, Gari (Cassava product), Edible Cassava Flour, Roasted Bengal Gram Flour -Chana Sattu, Ragi Flour, Almond Kernels, Coconut Milk Powder (Non Dairy), Mixed Masala Powder, Spice Oleoresins, Tejpat, Star Anise and Phytostanol	14th August 2020
10.	Gazette Notification on Food Safety and Standards (Contaminants, Toxins and Residues) First Amendment Regulation related to limit of Metal Contaminant, Aflatoxin and Mycotoxin	19th August 2020
11.	Gazette Notification on Food Safety and Standards (Packaging and Labelling) first amendment Regulations, 2020 relating to Display of Information in food service establishment	26th August 2020
12.	Gazette Notification to amend Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 related to new standards for low lactose / lactose free mlk and diary permeate powder and definition of mozzarella cheese	3rd September 2020
13.	Gazette Notification no. F. No. 15(1) 2016/School Children Regulation/Enf/FSSAI dated 04.09.2020 on the Food Safety and Standards (Safe food and balanced diets for children in school) Regulations, 2020	7th September 2020
14.	Gazette Notification No. Stds/Additives-1/Notification/FSSAI/2018 dated 16.09.2020 on Food Safety and Standards (Food Products Standards and Food Additives) Seventh Amendment Regulations, 2020 to amend regulations 3.1 and Appendix A	18th September 2020
15.	Gazette notification No. Stds/SP(L&C/A)/Oil Claims/FSSAI-2018 dated 09.10.2020 on Food Safety and Standards (Advertising and Claims) First Amendment Regulations, 2020 w.r.t. claims for edible vegetable oils.	14th October 2020
16.	Gazette notification No.1/Additional Additives-III/Stds/ Notification/ FSSAI/2017 dated 09.10.2020 on Food Safety and Standards Food Products Standards and Food Additives) Eighth Amendment Regulations, 2020 related to the provision of additional additives (sorbitan monostearate) and microbiological requirements for spices	14th October 2020
17.	Gazette notification F.No. Stds/Processing aids/Notification/FSSAI/2018 dated 09.10.2020 on Food Safety and Standards (Food Products Standards and Food Additives) Ninth Amendment Regulations, 2020 related to the insertion of Appendix 'C' w.r.t. Processing Aids	15th October 2020
18.	Gazette notification to amend Food Safety and Standards (Laboratory and Sample Analysis) Regulations, 2011 related to removal of inconsistency regarding two sets of laboratories mentioned in the regulation and those notified from time to time and the clause regarding the analysis fees for the food samples	19th October 2020

19.	Food Safety and Standards (Prohibition and Restrictions on Sales) Second Amendment Regulations 2020 related to removal of the clause regarding mandatory certification of Agmark for certain food products.	23rd October 2020
20.	Gazette Notification on Food Safety and Standards (Import) Amendment Regulation 2020	23rd October 2020
21.	Gazette Notification file No. Stds/O&F/Notification(12)/FSSAI-2019 dated 26.10.2020 on Food Safety and Standards (Prohibition and Restrictions on sales) Third Amendment Regulations, 2020 related to limit of Total Polar Compounds in unused/fresh vegetable oil/fat	27th October 2020

Draft Notifications

Sr.No.	Name of Notification	Date
1.	Draft Food Safety and Standards (Prohibition and Restrictions on sales) Amendment Regulations, 2020 related to incidental occurring of Khesari dal in grams/pulses.	30th July 2020
2.	Draft Food Safety and Standards (Food Product Standards and Food Additives) Amendment Regulations, 2020 w.r.t. new standards of Dairy Analogue and revision of standards of Ghee and other Milk Fat Products	30th July 2020
3.	Draft Food Safety and Standards (Food Products Standards and Food Additives) Amendment Regulations, 2020 relating to standards of Shea Butter and Borneo Tallow/Illipe butter	30th July 2020
4.	Draft Notification on Food Safety and Standards (Contaminants, Toxins and Residues) Amendment Regulation, 2020 related to MRL of pesticide, Tolerance Limit of Antibiotic and Toxins	26th August 2020
5.	Draft to amend Food Safety and Standards Authority of India (Transaction of Business and Procedures for the Scientific Committee and Scientific Panels) Regulations, 2016 related to revision of quorum of meeting of the Scientific Committee or Scientific Panel or Working Group and drawing up of agenda in consultation with Chairperson of the concerned Scientific Panel or Scientific Committee	3rd September 2020
6.	Draft to amend Food Safety and Standards (Prohibition and Restriction on Sales) Regulations, 2011 prescribing addition of Indigo Caramine or Brilliant Blue up to 10ppm in non-edible ice	3rd September 2020
7.	Draft to amend in Food Safety and Standards (Food Product Standards and Food Additives) Regulations, 2011 with respect to Soya sauce, walnut kernel, grape seed oil, exemption of imported expelled oil from refining ,black pepper, dried sage, fermented soya products, oat products etc.	3rd September 2020
8.	Draft Notification on Food Safety and Standards (Organic Foods) Amendment Regulations, 2020	3rd September 2020
9.	Draft Notification on Food Safety and Standards Rules (Amendment) Regulations, 2020	4th September 2020
10.	Draft Notification on Food Safety and Standards (Packaging and Labelling) Amendment Regulations, 2020 prescribing the revision of label declaration on the package of food which is permitted to contain the sweetener	18th September 2020

11.	Draft Food Safety and Standards (Food Product Standards and Food Additives) Amendment Regulations, 2020 w.r.t the standards of raw edible oil, multi-source edible vegetable oil, dehydrated vegetables, protein rich atta, multigrain atta, mixed millet flour, revised standards of honey, requirements for animal feed, dry sweet basil, hemp seed, use of food additives in iced tea, microbiological standards for food grain etc.	28th October 2020
12.	Draft Food Safety and Standards (Health Supplements, Nutraceuticals, Food for Special Dietary Use, Food for Special Medical Purpose, Functional Foods and Novel Foods) Amendment Regulations, 2020	6th November 2020
13.	Draft Food Safety and Standards (Fortification of Foods) Amendment Regulations, 2020 w.r.t the standards of fortified milk powder.	13th November 2020
14.	Draft Food Safety and Standards (Import) Amendment Regulation,2020 related to inclusion of registration and inspection of Foreign Food manufacturing facilities	16th November 2020
15.	Draft notification on Food Safety and Standards (Packaging and Labelling) Amendment Regulations, 2020 w.r.t labelling of multi-sourced edible vegetable oils	16th November 2020
16.	Draft Notification on Food Safety and Standards (Prohibition and Restrictions on Sales) Amendment Regulations, 2020 related to prohibit blending in Mustard Oil	18th November 2020
17.	Draft Notification on Food Safety and Standards (Licensing and Registration of Food Businesses) Amendment Regulations, 2020	25th November 2020

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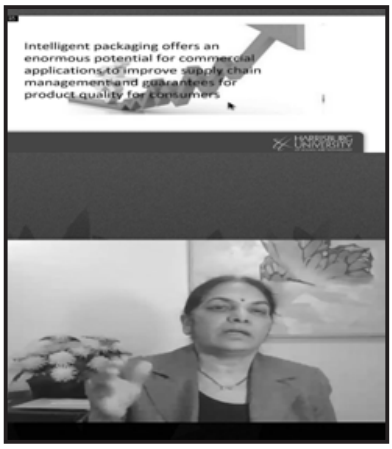
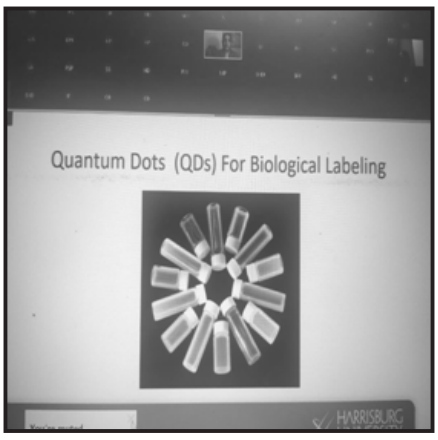
Prof. J.V. Bhatt Memorial Lecture

The Prof. J.V. Bhatt memorial lecture was conducted virtually by AFST (I) Mumbai Chapter on 21st July 2020. It was attended by more than 150 members from India & USA).

Mr. Rithesh Mathur, Joint Secretary, AFST(I) Mumbai Chapter delivered the welcome note and context setting. He also gave a brief introduction about Pro. J. V. Bhat and hisachievements. Mr. Nilesh Lele, President, AFST(I) Mumbai Chapter, gave a synopsis of the various activities conducted by AFST, Mumbai chapter through the year.The quarterly newsletter of the AFST(I) Mumbai Chapterwas released digitally during the event. It was followed by the presentation by Mrunalini (Leena) V Pattarkine, PhD, Professor, Biotechnology and Director, Capital Area Biotechnology Partnership, Nanobiotechnology Initiative of Harrisburg University. The topic of the conference was "Intelligent Material & Microbes - An innovative approach for real time QA/ QC". Other topics that were covered were Nanotechnology (NT), Interfacing NT with food packaging, Smart materials and Innovative approaches.

The Conference ended with conclusion and a brief Q & A session.

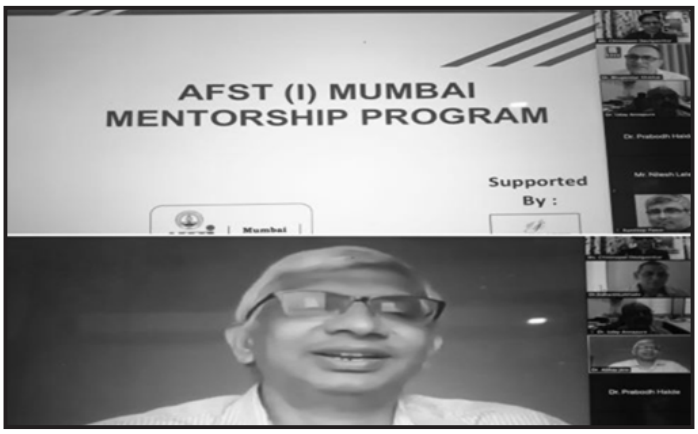




Mentorship

AFST Mumbai in association with Farm to Fork Solution successfully organized a Mentorship Program for Students and Entrepreneurs Program in the field of Food technology.

The main objective of this program is to guide students in aspects of career and capability development in their



fields of interest and to encourage Entrepreneurs in scaling up their business.

We received more than 900 registrations for both the programs. For Students Mentorship Program, we have selected 100 students and for Entrepreneurs Program 30 participants have been selected.

The names of the mentors for both the programmes are:

1. Dr. Prabodh Halde
2. M.M. Chitale
3. Mr. Uday Annapure
4. Mr. Sanjeev Sharma
5. Mr. Ashish Dabade
6. Ms. Chinmayee Deulgaonkar
7. Dr. Jyoti Rani
8. Ms. Shubhaprada Nishtala
9. Dr. Rosy Bansal
10. Ms. Anagha Sapre
11. Mr. Sanjay Indani
12. Dr. Siddharth Lokhande.

For Entrepreneurs Program, the mentors are Umesh Kamble , Nilesh Lele, and Ritesh Mathur.

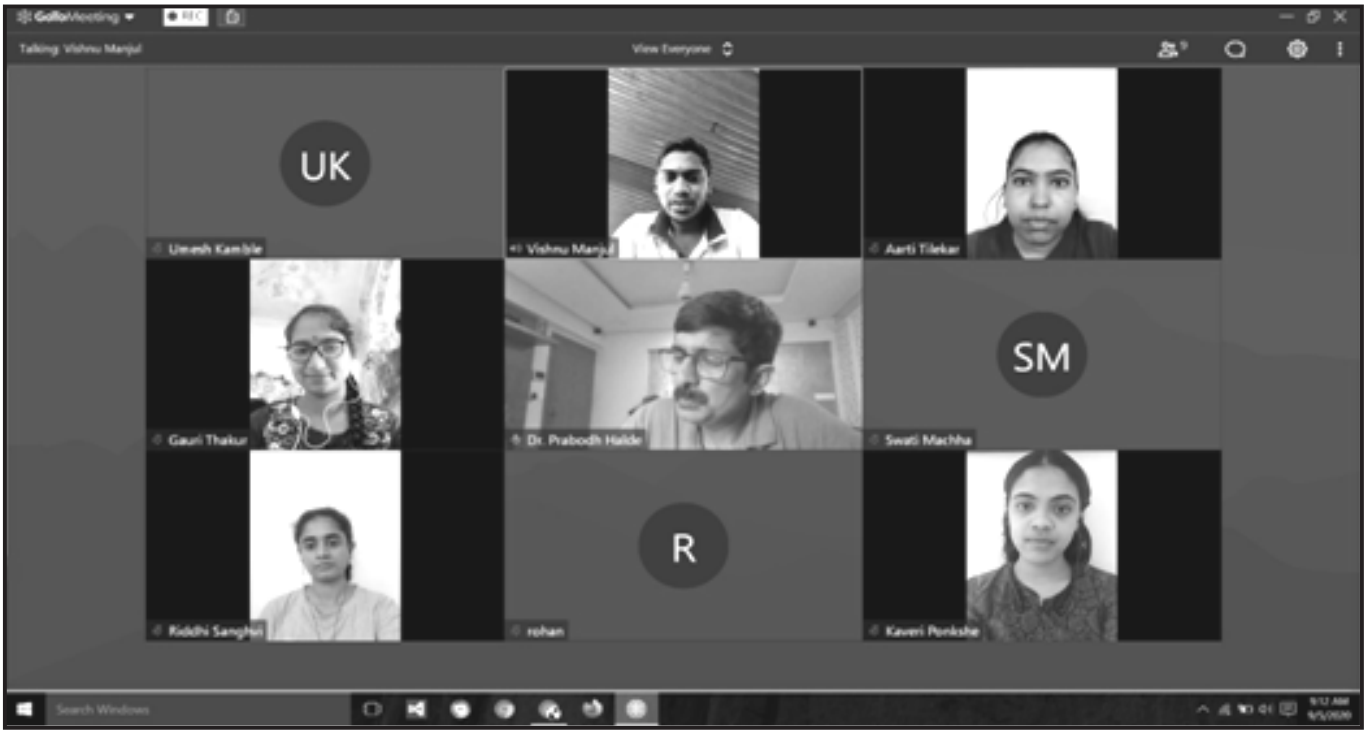
A specific number of participants will be allotted to them. This mentorship will be for a period of 3 months.

INAUGURATION OF AFST(I) MUMBAI MENTORSHIP PROGRAMS on SATURDAY 29TH AUGUST 2020 | 10 AM PLATFORM-ZOOM

For Inauguration of this mentorship programs we had:

DR. ABHAY JERE CHIEF INNOVATION OFFICER (MHRD), GOVT OF INDIA

DR. BHUPENDAR KHATKAR - PRESIDENT AFST(I) as GUEST OF HONOUR.



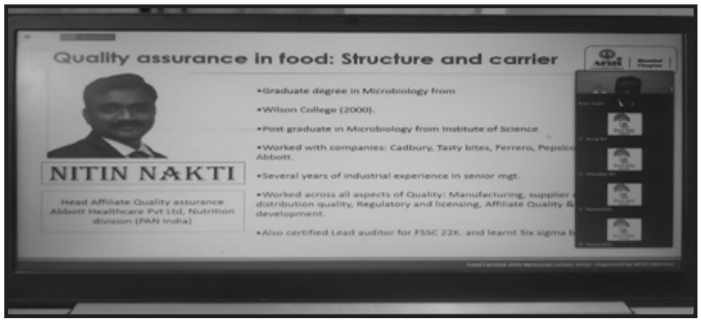
Sports Nutrition

Association of Food Scientist & Technologist of India (AFSTI), Mumbai Chapter along with Network of Professional of Food & Nutrition (NetProFan) celebrated World Food Safety Week by organizing a webinar on Sports Nutrition on 14th June 2020.

The Inaugural address was given by Dr. Arun Unhale, IAS, Commissioner FDA, Maharashtra. The context setting was done by Mr. Nilesh Lele, President, AFST(I) Mumbai Chapter, and Ms. Subhaprada Nishtala, VP AFST(I), Mumbai Chapter introduced all speakers. Dr. Prabodh Halde, Past President- AFST(I) played the role of a moderator for this webinar. First speaker was Padmashri Dr. Shashank Joshi, Endocrinologist and Mr. Sunil Bharadwaj , SP & JC, Vigilance, FDA explained how consumers should always check the product label while buying them from online and offline stores. Also, every consumer must be aware about difference between general Food supplements and Food supplements for sportsperson. Ms. Sheryl Salis, Founder- Nurture Health Solution, explained the importance of diet in sports, and how it aids in boosting the performance of sportsperson. According to Dr Jaiprakash Dubale, Joint Director, Sports and Youth Services, Maharashtra, for a player good nutrition support , is as important as perfect guidance and training . Dr. Rohini Sharma, Nutritionist, explained how sports nutrition is an important topic in nutrition studies. Sport Nutrition study helps improve our stamina. In market there are various products like Sports food, sport drinks, sport supplements which help sports person to maintain good diet. Padmashri Dr. Shital Mahajan said every sportsperson requires different training, diet food, nutrition supplement according to his role in sports.

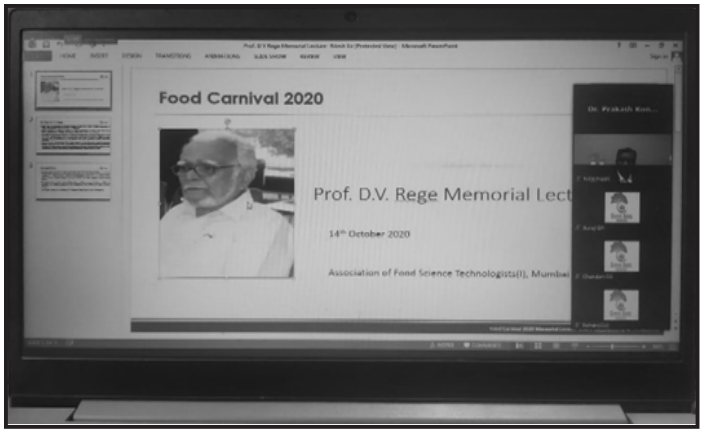
Food Carnival

Like every year, AFST (I) Mumbai chapter celebratedNutrition Week in 2020 and named itthe Food Carnival event which included events such as Jingle, Poster, Debate and Recipe competition was organised. Many college students from across the country participated in these competitions. As a part of the event online lectures were also organised from 14th to 16th October 2020.



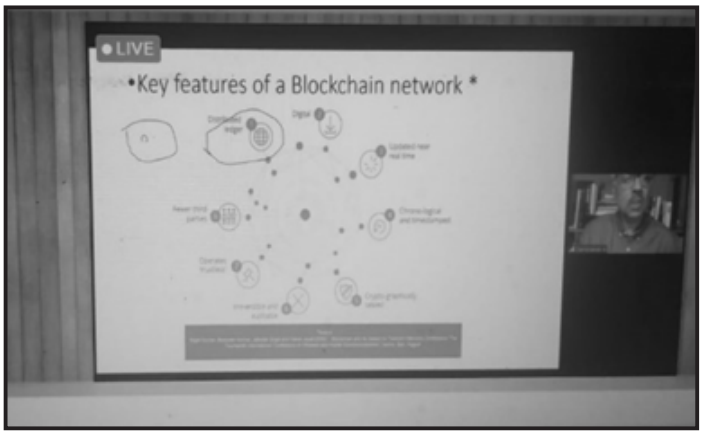
Prof. D. V. Rege Memorial Lecture, dated on 14th Oct 2020

Host	Ms. Chinmayee Deulgaonkar, Hon Sec, AFST I Mumbai
Welcome & Opening Remarks	Mr. Nilesh Lele, President, AFST I Mumbai
Prof D V Rege achievement	Mr. Ritesh Mathur, Jt. Sec. AFST I Mumbai
Guest Lecture- Topic Competence requirements in Quality Assurance related jobs	Mr. Nitin Nakti, Head- Affiliate Quality, Abbott Nutrition
Vote Of Thanks	Mr. Ritesh Mathur, Jt. Sec. AFST I Mumbai
Attendees	120 plus



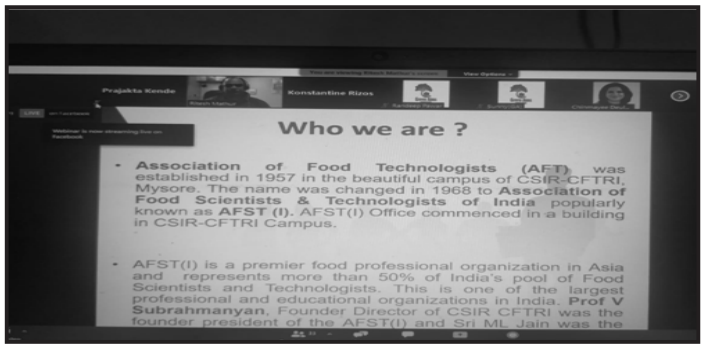
Dr. K. U. Naram Memorial Lecture, on 15th Oct 2020

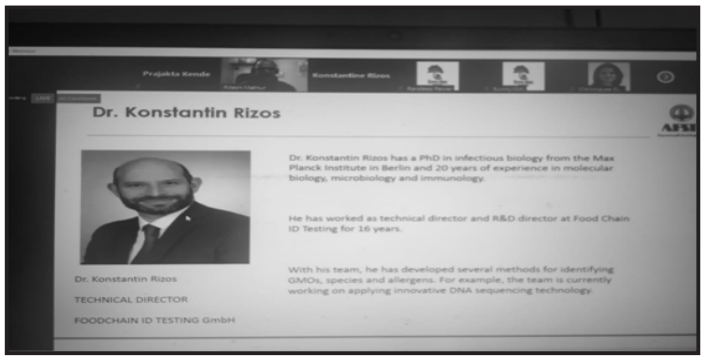
Host	Ms. Chinmayee Deulgaonkar, Hon Sec, AFST I Mumbai
Welcome & Opening Remarks, AFST I Activities	Ms. Chinmayee Deulgaonkar, Hon Sec, AFST I Mumbai
Dr. K U. Naram achievements	Ms. Chinmayee Deulgaonkar, Hon Sec, AFST I Mumbai
Guest Lecture- Blockchain in Food Industry	Prof. Dr. A. Damodar, IIM, Bangalore
Vote Of Thanks	Ms. Chinmayee Deulgaonkar, Hon Sec, AFST I Mumbai
Attendees	150 plus



Padma Bhushan Prof. A. Sreenivasan Memorial Lecture, on 15th Oct 2020

Host	Mr. Ritesh Mathur, Jt. Sec. AFST I Mumbai
Welcome & Opening Remarks, AFST I Activities	Mr. Ritesh Mathur, Jt. Sec. AFST I Mumbai
Padma Bhushan Prof. A. Sreenivasan achievements	Mr. Ritesh Mathur, Jt. Sec. AFST I Mumbai
Guest Lecture- GMO – The debate continues	Dr. Konstantin Rizos, FoodChain ID Testing GmbH (Germany)
Vote Of Thanks	Ms. Chinmayee Deulgaonkar, Hon Sec, AFST I Mumbai
Attendees	100 plus





Food Carnival – Grand Finale

The Grand Finale of Food Carnival was on 16th Oct 2020. Welcome address and overview of Food Carnival activities was given by Mr. Nilesh Lele, President, AFST (I) Mumbai Chapter. He Keynote address was given by Mr Arun Unhale, IAS, Maharashtra FDA Commissioner.

Mr. Nilesh Amritkar, VP, AFST (I) briefed about AFST (I) activites, Dr. Prabodh Halde, Past President, AFST (I), spoke about World Food Day, and opening remarks were made by Mr. Devendra Chawla, Director, Samyog Foods.

A live debate competition was organised which was followed by announcement of all winners of debate, poster, recipe and jingle competition.

Judge of that competition:

Jingles

- **Dr. Prakash Kondekar, AFSTI-M**
- **Mr. Sachin Adsare , LEC, AFSTI-M**

Recipe

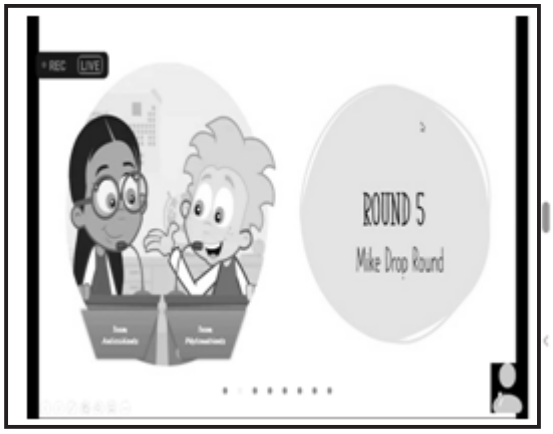
- **Mr. Prakash Chawla, AAK Kamani**
- **Mr. Devendra Chawla, Samyog Foods**
- **Mr. Ritesh Mathur, F2F**
- **Mr. Sanjay Indani , SafeFoodZ**

Poster

- **Mr. M. M. Chitale, Advisory Committee**
- **Mr. Prafulla Dutta Singh, LEC, AFSTI-M**
- **Mr. Bhushan Choudhari, LEC, AFSTI-M**

Debate

- **Mr. Balakrishna Warrier, AC, AFSTI-M**
- **Ms. SukhadaBhatte, LEC, AFST I Mumbai**
- **Ms. Trupti Bhat, LEC, AFST I Mumbai**



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