

Vadamalai Media Group

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# Agriculture & Industry Survey

India's Leading Business Magazine for Agriculture



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Director - ICAR



**Rajender Kumar**  
Cravo Equipment,  
Canada



**Dr. Bir Singh Negi**  
Former Advisor, APEDA



**Mr Santhosh Kumar**  
Modern Distropoli;



**Dr. K.N. Kattimani**  
Vice Chancellor,  
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## **Vethaiya Balasubramanian**

With a Ph.D in Agronomy and Soil Science and a solid professional interest and wide experience in sustainable and conservation agriculture, Mr Vethaiya Balasubramanian has deep-rooted knowledge in soil quality and environmental health.



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## PUBLISHERS NOTE

### Make life easier for farmers, villagers!

#### India is a great agricultural power, a great agricultural economy!

How many of the policy makers, occupying key positions in the power structure of Delhi care to respond sympathetically?

Yes, when do these securely positioned high and mighty think of farmers and rural people? Who has the time to think of the lost causes? Agriculture certainly seems to have become one such? Yes, it looks like!

Agriculture, when it has a high priority?

When we open our newspapers and see occasionally the headlines proclaiming the record harvest of food grains, specially the wheat and rice output in so many hundred tonnes. Ironically, today too, we read this season's food production targets reached!

So, this season too the government needn't worry too much about the agri sector's support for the government for doing what it is doing. Agriculture at the time of Corona Virus and farmers' protests prolonging! What an unfortunate coincidence!

Right now, the deadly Corona Virus has entered the rural hinterland and there is an unreported fear and anxiety among the otherwise largely carefree general public. But unfortunately the current goings have drawn in the very vulnerable and poor into the net and the immediate future looks very grim indeed.

Unfortunately, the Corona Virus has desired any left-over optimism about the future of the country and the economy.

The silence prevailing with the PM undertaking a daily ritual of online international hasn't lifted our spirits with what the government's perceived setback in the W.Bengal Assembly elections.

The over-zealous pursuit of the Assembly elections in Bengal, with the PM undertaking a record 11 trips for campaigning had created a new kind of sensation and the pursuit of other projects like building a new Parliament and a palatial house for the Prime Minister's residence hasn't gone down well with the public and the media has been less enthusiastic.

The media, especially the foreign media has been very critical. The Indian counterparts have been what is called "cautious", the Indian media is known for its own choice of words and expressions when it comes to express their own timidity in the place of media freedom. Our media reforms must address the typically lopsided structure of the media industry.

The international media, more so such organizations like the "reporters without borders" have exposed how we behave in times of national crisis. Thus, this time when mistakes were committed we continued to hide ourselves behind a fig leaf!

There must be equity and justice in promoting the media in the development segments. The Pandemic has created an uncertain future for the country and no one knows what the coming days and months would bring into our lives.

The Prime Minister for his part has become lately into a silent mode as far as many other issues as well. There doesn't seem to be any breakthrough in the government-farmers confrontation. Yes, when it comes to farmers' issues there doesn't seem to be any warm feelings between the government and the farmers who too after prolonging their demands, the critical demands being the total withdrawal of the three laws that were introduced without wide debates and passed in an arbitrary manner and they have struck in the minds of farmers as a betrayal of their faith in the government's attitude towards the farming community.

Agriculture is an universal issue, agriculture comes into any nation's economic policy making except for a few countries with small geographies food production is a basic economic activity and either you produce the food yourself or important food and this becomes a major trade policy issue.

A vast land mass and varied seasonal activity and thus every major region has an agricultural space and the changing seasons, rains and the related natural cycles make India a great agricultural power.

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# WHY AGRICULTURE MATTERS?

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**Agriculture in a time of climate change, erratic rains, natural disasters etc!  
For every one, individuals and people alike?**

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**Y**es, such questions are not asked everyday and everyone at that!  
For the simple reason we live at a time when the rest of the world is preoccupied with more self-related questions. Money earning, job securing and running about our own day to day issues like personal happiness or personal anxieties and concerns.

Right now of course we are caught in the life threatening Corona Virus and its many much more mutant variants and we can't wake up and feel relaxed or secure in the day when more bad news come long with the many issues grappled with by our leaders's own prognosis for the day or days ahead.

Unfortunately, our leaders and policy makers are not so reassuring, given their own limitations, limitations brought about also by everyday narrow concerns. Of course, the time is a democratic time and there are issues with a world that in the name of democracy has led to an anarchistic ways for doing things and solving the issues.

As we write there are Wars and destructions in Congo, Syria and Afghanistan and elsewhere, right now in the Israel-Gaza fronts and it becomes frightening to see so much bombing and fires and much else.

There is a latest report, on the internal displacement of peoples within their own countries and, large and small.

Even within China there is such an unprecedented displacement of people inside the country.

There is a latest report from Geneva, from the Internal Displacement Monitoring Centre (IDMC), according to which, in its latest annual global report a record of 55 million people within China, are now living away from their homes! Within their own countries there are floods, storms, protracted violent storms and floods new conflicts and natural disasters.

The Geneva-based Norwegian Refugee Council oversees the IDMC and while IDMC looks after the vulnerable people, the IDMC is also committed to the plight of the other vulnerable people who are exposed to mass movement of the refugees and other migrants, among whom we have to put other vulnerable groups.

The director of IDMC director Alexandra Bilakk says it is about all else the problems of climate change is the villain which creates so much instability and the intense cyclonic, storms lead to so many disasters and destructions which are quite a familiar occurrence almost many times a year.

It is the explorations of natural resources that lead to the climate change and warming of the planet.

In India one of the main reasons for the climate change is the over exploitation of natural resources, be it oil, water or coal and other natural resources.

As we are seeing in the Corona Virus Pandemic the people at large, the general public are totally indifferent and insensitive and we don't care for the diminishing water resources or other such valuable resources.

One such diminishing resource is food!

Many International agencies, not just the UN agencies alone, have warned of the diminishing food resources, we are warned, a fifth of it is lost to climate change alone!

The UN's World Food Programme warns of a looming catastrophe the agency further warns that about 34 million people on the brink of famine!

These background information, the latest on the world's famed Cornell University Journal, Nature, Climate Change, warns.

How far the Indian policy makers know of the seriousness on the Indian agriculture front?

There are many reasons to feel unhappy without policy makers.

What new policy initiatives we have heard recently from the Indian establishment?

None, none at all!

Instead we see the prolongation of a massive farmers's protest hanging fire for months! Is this policy making for a sector that had made India proud. We are today the world's number one rice producer and exporter! Yet, our per capita income is only one eighth of the China's farmer!

However, we see so much disregard for the feelings of the poverty-hit farmers community.

The problems of the Indian farmers are too many and it is not the place here to discuss them.

Indian has perhaps the largest small, micro farmers who own the minimum per head acres of farm land.

We need radical ideas and sciences to lift our farming standards to world levels.

Highly qualified persons, in knowledge and experience, more and more high committed individuals must be put in charge of the Krishi Bhavan.

Let us hope there is a very fast change of heart to meet the kissed and lift up their spirits. Jai Kisan, Jai Jawan!



## Indian farmers expect to harvest record wheat, rice crops this year

India is expected to produce a record 108.75 million tonnes of wheat this year, the farm ministry said in its third forecast for the crop year to June 2021, marginally lower than its previous estimate of 109.24 million tonnes. Rice output in the world's biggest exporter and the second largest producer is estimated at a record 121.46 million tonnes compared to a forecast of 120.32 million tonnes in February.

The farm ministry forecast this year's total grains output to be at a record 305.44 million tonnes, up from its previous estimate of 297.5 million tonnes. The efforts of India's farmers, scientists and the government has paid off, said Agriculture & Farmers Welfare Minister Narendra Singh Tomar.

The government had lowered its oilseed output estimate to 36.57 million tonnes from 37.31 million tonnes forecast in February.

Rapeseed production is estimated to be at 9.99 million tonnes this year, down from the previous forecast of 10.43 million tonnes, the farm ministry said. Similarly, soybean output is expected to be at 13.41 million tonnes, lower than the 13.71 million tonnes estimated in February.

The farm ministry pegged peanut production to be at 10.12 million tonnes in 2020/21, lower than its earlier estimate of 10.15 million tonnes. Production of pulse is likely to be at 25.56 million tonnes this year, up from the 24.42 million tonnes estimated earlier.

Sugarcane production is estimated to be around 392.80 million tonnes against 397.66 million tonnes forecast in February, the farm ministry said. It added that cotton output is expected to be marginally higher at 36.49 million bales of 180 kg each from 36.54 million bales estimated earlier.

The farm ministry said farmers are likely to harvest a record 30.24 million tonnes of corn against 30.16 million tonnes forecast earlier.

By Mayank Bhardwaj

Source : <https://www.agriculture.com/markets/newswire>



## Just 2% farmers use mobile app in field; little IoT post-harvest

As India looks to scale up use of technology in agriculture, a recent study has found that with just 2 per cent of the cultivators in India using mobile applications for farm-related activities and real-time alerts, adoption of tech solutions such as Internet of Things (IoT) remains at a nascent stage. It also found almost 90 per cent of the existing start-ups and tech-based companies have solutions that are focused only on pre-harvest operations and not on post-harvest which has a higher investment potential due to the presence of big companies.

In post-harvest operations, the study, Titled, IoT Adoption in Indian agriculture, that was conducted by industry body Nasscom along with Cisco India among more than 180 enterprises and 40 agritech start-ups found that unclear Return on Investments (RoI) is a big stumbling block for adoption of tech solutions like IoT.

The report showed that at between 27-37 per cent, IoT adoption is significantly low across the agriculture value chain which is further hampered by unclear benefits and longer time to scale.

“Lack of IoT advantages in pre-harvest stages stems from low farmer incomes and large-scale tenant farming; while in the post-harvest stages, with more organized companies and higher investment potential, unclear Return on Investment (RoI) is a stumbling block,” the report said. The study also found that the current state of IoT deployment in Indian agriculture is very nascent and disparate, both

### YET TO TAKE OFF

- ▶ More than 90% IoT adoption in Indian agriculture is in pre-harvest operations
- ▶ More than 180 firms and 40 start-ups found that unclear RoI is a stumbling block for adoption of tech solutions
- ▶ IoT adoption is low across agriculture value chains due to unclear benefits, long time to scale and high cost
- ▶ This is despite the country having more than 450 agritech start-ups and even big firms providing tech-based farm solutions
- ▶ Globally, IoT adoption in agriculture is projected to grow three times between 2019 and 2027

in available solutions, and in the initiatives taken.

“I think, given the state of Indian agriculture we don’t have enough people who make that kind deeper commitment to be able to invest in pre-harvest technological solutions and given that return on investment in post-harvest technological solutions in farming is low we feel that it here that government and industry should come together to provide a sort of ‘uberisation’ of tech solutions like IoT etc,” Sangeeta Gupta, Senior Vice President, and Chief Strategy Officer, Nasscom said.

The study found that awareness and use of IoT solutions in the pre-harvest stages of agriculture is limited to basic sensors, RFID, and limited IoT devices, while in post-harvest stage the most widely used technologies are sensors and RFID devices which are heavily used in processing operations, packaging, storage, and logistics.

Detailing the reasons for low adoption of cutting edge technology in both pre-harvest and post-harvest operations in agriculture, the Nasscom report said that workforce resistance as one of the main reasons for low adoption, along with, high cost of the solutions, limited proof of the technological solutions in reducing cost of farming and unwillingness to change as being the prime reasons for low adoption of tech.

The Nasscom-Cisco report recommended establishing local presence by tech companies along agriculture clusters by giving them access to government, industry, local NGOs and Farmer-Producer Companies (FPCs).

“Within farmer groups we found that response about technology solutions is mixed with some who are more adaptable to new options, but again cost of technology and the impact it can make on them remained a big question mark,” Gupta said. She said findings of the report will soon be shared with the Central and state government for further action.

The report further advised that work should be done on establishing agriculture corridors on the lines of industrial corridors with PPP-mode development and farmers’ equity.

Source : [www.business-standard.com](http://www.business-standard.com)

## Farmers understanding benefits of price-locking at sowing time with options trade

Confident of derivatives trade picking up in agricultural commodities, officials said farmers have begun understanding benefits of the options trading by locking in their price at the cost of sowing of the crop in a big way. A special ‘options familiarisation programme for FPOs (Farmer Producer Organisations)’ has also helped farmers learn a technique to take care of the price risk and concentrate their efforts on increasing the yield of their crops, an official said.

“The success of the programme will most likely encourage them to participate in similar contracts in other agricultural commodities as well,” he added.

The programme was launched by commodity bourse NCDEX in November 2020 wherein FPOs registered as clients with members of NCDEX were eligible to buy a put option and lock-in a price in two commodities -- chana and mustard seed facilitating the farmers/ FPOs to manage the price risk.

The premium cost up to Rs 300 per quintal to purchase put options was reimbursed by NCDEX out of regulatory fee foregone by the market regulator Sebi.

According to an official, more than 40 FPOs participated in the programme and locked in the price on behalf of farmers for a sale quantity of 1,030 metric tonnes of chana and 1,980 metric tonnes of mustard seed. The premium cost of buying put options of more than Rs 80 lakh was subsidised under the programme.

This helped farmers to have the comfort of the price and concentrate on the production of the crop. Prices of produce worth around Rs 15 crore could be hedged between the sowing and harvesting period.

In order to encourage farmers/FPOs to trade on the commodity derivatives exchange, Sebi decided to forego the regulatory fee and allowed exchanges to utilise such forgone money for the benefit of farmers and FPOs by reimbursing mandi tax, charges like assaying, cleaning, drying, and put option premium for incentivizing their participation in the contract of options in goods. A put option gives a right but not an obligation to the holder to sell at a specified price at a specified date. The farmer or FPO buying a put option is protected from the downward price risk while also retaining the upside benefit. In this case, the premium for buying put options on chana and mustard seed was borne out of the regulatory fee foregone by Sebi, thus making it almost cost-free for farmers or FPOs.

“Since the minimum price was assured at strike price of the put option bought, farmers were able to concentrate more on increasing their yield,” the official said.

“Naturally, the minimum price locked-in by FPOs was higher than the cost of production,” he added.

“It was also heartening to see that FPOs understood the features of this product as they themselves decided the strike price and expiry date of the put option to be bought and managed their positions, either by squaring off or holding till expiry. This indicated that FPOs have learned about the product and were comfortable using it,” an exchange official said.

Price protection through the put option also enabled FPOs to avail finance at a reasonable cost as lending institutions like banks and financial companies have certainty about the minimum price that would be realized by farmers for their produce.

Source : [economictimes.indiatimes.com/](http://economictimes.indiatimes.com/)





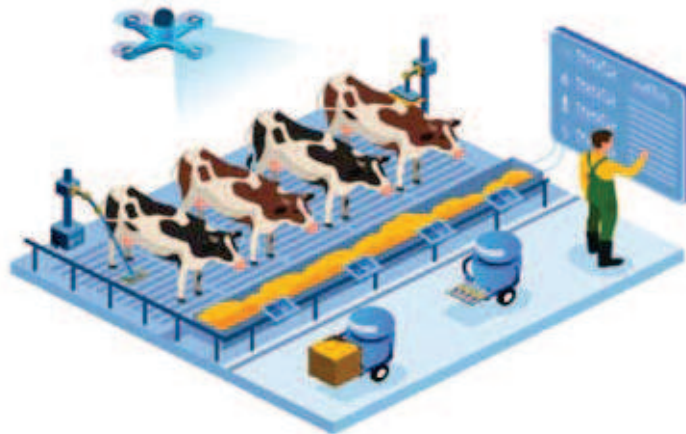
# How digitalization can help improve dairy farming

India is the world's largest producer and consumer of milk. Milk production in the country is expected to continue to report strong growth in the foreseeable future. Milk demand too is expected to rise to 266.5 million tonnes by 2030, according to a study by the National Dairy Development Board (NDDB)

Our per capita milk consumption is well below other major producers, and the cattle yield is also among the lowest. Enhancing yield is one of the key challenges in the Indian dairy sector. In my opinion, it is also a major responsibility so that dairy farmers or milk producers can receive better compensation for their efforts.

This is, however, easier said than done. There are an estimated 96 million dairy farmers in India and the daily production of 440 million liters of milk. Most of these farmers have 3-5 cattle and many of them even fewer. Enhancing milk yields requires improved cattle feed, better cattle health, milk extraction equipment, veterinary facilities, and a host of other factors. Considering the sheer numbers of farmers and bovine cattle, increasing milk yields is a daunting task, to say the least, but the country is on the right track. Efforts are being made to enhance cattle productivity, and the results should start becoming visible in the near future.

Along with improved yields, the major challenge for the Indian dairy farmers is the lack of adequate milk cooling infrastructure. A delay in chilling leads to an estimated three percent or around 5 million tonnes of milk getting spoiled, causing heavy losses to the farmers. Even otherwise, the delay causes a rapid increase in bacterial load, affecting milk's quality and reducing its potential



shelf life. The currently available solutions are inadequate to achieve the desired quality standards. The absence of a continuous and reliable power supply during chilling is also an issue in many villages. A majority of milk collection centers also do not have cooling infrastructures such as chilling centers, cold chains, or bulk milk coolers.

While these are huge challenges, the other way of looking at them is that they also present a huge opportunity for the dairy sector. Solutions to instantly chill milk at the source are available, and efforts must be made for their higher adoption.

According to projections in the government's National Action Plan, there is a requirement of 8,80,000 rapid milk chillers in India, and this translates into a \$3 billion opportunity.

There is a lot of focus on strengthening the milk cooling infrastructure during the collection and distribution stages by the government and the cooperative or private sector. Still, similar efforts are needed at the farmer's doorstep to reduce milk wastage if not completely prevent it.

The value added to milk products in India is also significantly lower than other major producers, and this is also a challenge and an opportunity. According to the government's estimates, there is a

potential to add more than 115 million tonnes of additional processing in the value-added dairy products segment in the next five years. This, too, has the potential to attract thousands of crores of rupees in investment and must be tapped.

Talking about digitalization, it is already playing a vital role in the dairy sector and is expected to become a

critical aspect in the near future. From farm management, which includes using technology to monitor cattle health and productivity, to milk procurement, comprising automatic milk collection systems and bulk milk collection systems, digitalization is everywhere.

Digitalization also has applications in milk testing for evaluating the quality, screening adulteration, and ushered in greater transparency and traceability throughout the dairy supply chain. The opportunities for digitalization are immense, and even more so because of the greater adoption of emerging technologies such as Artificial Intelligence (AI), Internet of Things (IoT), and Cloud.

As a leading dairy technology company, working at the ground level for nearly three decades, the resilience of Indian dairy farmers still amazes us. If India can transform itself from a milk deficient country into the world's largest milk producer in a matter of a few decades despite all the challenges, we can imagine where our dairy sector can be in the next 10 years if we empower our dairy farmers with the necessary tools and infrastructure, and extend them the support they need. In such a scenario, the sky is the limit for the Indian dairy sector.

Source : [www.indianretailer.com](http://www.indianretailer.com)



# Online Meetings



[www.agricultureinformation.com](http://www.agricultureinformation.com)

## Upcoming events

### **JUNE 9, 2021**

**5:00 pm**

Dr. V. Vani on "Post harvest management and value addition of mango and other horticultural produces"

### **JUNE 10, 2021**

**3:00 pm**

Dr. Parameswaranaik J on "Entrepreneurship Development in Sericulture Industry"

**05.00 PM**

Mr. Rajender Kumar on "Soilless leafy and herbs under retractable roofs"

### **JUNE 11, 2021**

**05.00 PM**

Dr. Priya P. on "Integrated nutrient management in field crops"

### **JUNE 14, 2021**

**3:00 pm**

Mr. Deepak Kumar on "Proper guidance from soil testing to market linkage to increase income"

**05.00 PM**

Dr. Satendra Kumar on "Integrated fish farming system models for viable rural livelihood"

### **JUNE 15, 2021**

**3:00 pm**

Mr. Vimal Panjwani on "Renewable energy for agriculture / farmers"

**05.00 PM**

Dr. Amit Mandal on "What is Biofloc Technology: How it helps to enhance aquaculture productivity"

### **JUNE 16, 2021**

**3:00 pm**

Mr. Akash Gupta on "The organic ventures in providing services in processing, trading, livestock, input, wild harvest"

**05.00 PM**

Dr. Anandkumar Naorem on "Spineless cactus: An unconventional yet intriguing dry land fodder"

### **JUNE 17, 2021**

**3:00 pm**

Mr. Yogesh Thite on "Spirulina processing and marketing"

**05.00 PM**

Major Ved Prakash Sharma (Retd) on "Food Forest Model – For high density natural precision farming"

### **JUNE 18, 2021**

**3:00 pm**

Ms. Kranti Choudhari More on "Direct marketing of farm products by farmers to consumers"

**05.00 PM**

Mr. Rajkumar Chandrasekar on "Revolutionising aquaculture with latest technology"

### **JUNE 21, 2021**

**3:00 pm**

Dr. Jyoti Dhakane-Lad on "Utilization of agro-biomass for green packaging and hometextile"

**05.00 PM**

Dr. Basavaraju Pu'alingaiah on "Agro-forestry: Scope and Sustainability"

### **JUNE 22, 2021**

**3:00 pm**

Mr. Nilesh N. Jadhav on "My experience in starting and successfully running a nursery project"

**05.00 PM**

Mr. Prakash Francis on "Banana fiber extraction process"

### **JUNE 23, 2021**

**3:00 pm**

Mr. Yashpal Morey on "Irrigation system designing and water management in agriculture"

**05.00 PM**

Mr. Arvind V on "Mango softwood grafting for be'er yield"

### **JUNE 24, 2021**

**3:00 pm**

Mr. Amarendrababu Chekuri on "All about Sandalwood plants"

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# Online Meetings



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## Recently Completed Meetings

### **Mr. Narayanan Alwar on “Vertical axis wind pump for small irrigation”**

Mr. Narayanan Alwar is the GM Solutions in VodafoneIndia Limited, Pune, Maharashtra. His interest is sustainable agriculture, windmill, vertical axis wind pump for small irrigation and concentrated solar energy for agriculture use.

### **Mr. Narendra More on “How we produce high quality dutch roses, red rose, pink rose, white rose and gabriel rose”**

Mr. Narendra More is the Proprietor of Jaibadi Bijasani Rose Nursery in Pune, Maharashtra. They are Manufacturer and Supplier of all kind of roses plants all over India. Jaibadi Bijasani Rose Nursery is famous for Crop Production of Dutch Rose Plant, Red Rose Plants, Pink Rose Plants, White Rose Plants and Gabriel Rose Plants. These products are highly admired for their long shelf life, and high freshness features. Offered products are grown using top grade ingredients as per the set industry standards and norms. To know more view <https://bit.ly/3tysyU0>

### **Mr. BK Menon on “All about turmeric and curcumin”**

Mr. BK Menon is the Proprietor of Green Planet Agri in Bengaluru, Karnataka. To know more view <https://bit.ly/3w2VDIz>  
Mr. BK Menon says curcumin is the main active ingredient in turmeric. It has powerful anti-inflammatory effects & a strong anti-oxidant curcumin boosts immunity. Curcumin in turmeric has been studied by NIH – National Institute of Health Baltimore-USA and Johns Hopkins Medical College Hospitals USA as a beneficial herb in Cancer treatment.

### **Prof. (Dr.) Kumaraswamy S on “Integrity of Soil Ecosystem Services: Social-Construct Perspectives”**

Prof. (Dr.) Kumaraswamy S is the Professor and Dean (Faculty of Agriculture) in Sri Sri University in Cuttack, Odisha. His interests are Soils & Human Ecology; Regenerative Agriculture; Agro-ecology and sustainability; Water and soil resources services in agricultural landscapes, Shifting cropping landscapes and their impact on the rural economy, Controlled environment agriculture and technology Interventions, Precision farming, Regenerative agriculture; etc.

### **Mr. Yogesh Kumar Verma on “Subsidies and cultivation of olive farming”**

Mr. Yogesh Kumar Verma is the Deputy Director at Agriculture Department, Government of Rajasthan in Jaipur, Rajasthan. His interests are olive cultivation, protected cultivation and fertigation. Rajasthan Olive Cultivation Limited runs under the brand name Rajasthan Olive Cultivation is owned by Yogesh Kumar Verma located at S.I.A.M. Campus Agriculture Research Institute, Durgapura, Jaipur, Rajasthan. Mr. Yogesh Kumar Verma says a pilot project on Olive cultivation was conceived after the visit of team of farmers and agriculture experts to Israel to study technical feasibility and economic viability of the Olive cultivation in Rajasthan.

### **Dr. B.J. Pandian on “Water Management conservation in agricultural crops”**

Dr. B.J. Pandian is the Principal of Kumaraguru Institute of Agriculture, Erode, Tamil Nadu. His interest is Water Management. To know more view <https://bit.ly/3eAmMuL>

### **Dr. Deborshi De on “Role of integrated radical farming in sustainable agriculture”**

Dr. Deborshi De is the CEO of Smart Management Consultancy in Kolkata, West Bengal. His interest is Food and Agriculture. Dr. Deborshi De is a food-technologist, scientist, an educationist and a social entrepreneur. Running several startups of his own along with his own research areas in food technology and sustainable agriculture. He is leading awareness campaigns on the over usage of chemicals, developing on farm composting techniques, integrated pest management solutions by traditional Indian methods, process counselling, certification system implementation and creating access to market of several agro-commodities especially for medium, small scale and marginal farmers. To know more view <https://bit.ly/3dKI0qs>

### **Dr. Priyabrata Das on “How smart devices, AI/ML will revolutionize modern agriculture”**

Dr. Priyabrata Das is the Co-Founder and CTO of Napuor Organics in Bangalore, Karnataka. His interest is IoT in agriculture. To know more about Napuor Organics view <https://bit.ly/3tn0JOn>

### **Dr. Vijay Kumar Arora on “How to manage soil health for beer yield”**

Dr. Vijay Kumar Arora is a Consultant Faculty at Maharana Pratap Horticultural University in Karnal, Haryana. He has worked as Assistant Professor (1982-1995, 13 years), Associate Professor (1995-2003, 8 years) in CCS Haryana Agricultural University, Hisar. Dr. Vijay Kumar Arora has carried out research on soil science and water management for 38 years.

### **Mr. Venkataswami Reddy Surasani on “Our experience -Agri retail space with Hub & Spoke model of supply chain”**

Mr. Venkataswami Reddy Surasani is Co Founder & Director of Kissan Agri Mall Pvt Ltd, Kurnool, Andhra Pradesh. Mr. Venkataswami Reddy Surasani interests are Retailing is one of the traditional business operations, which has repercussions in all the sectors of the economy. The huge potential of the rural market along with the benefit that can be accrued by organizing the existing fragmented market has led to the concept of organised agri input retailing or ‘one stop shops’

### **Mr. Priyanshu Jain on “How hydroponics (soilless farming) is changing the dynamics of Agriculture in India and globally”**

Mr. Priyanshu Jain is the Founder of Agri Joy LLP in Agra, Uttar Pradesh. His interests are Hydroponics and Sustainable Agriculture. To know more view <https://bit.ly/3gthMdQ>



### **Mr. Rajender Kumar on “Profitable vegetable cultivation in tropical dry regions”**

Mr. Rajender Kumar, Business Development Manager-South & East Asia, Cravo Equipment Ltd., Canada. The retractable roof production system or RRPS has been developed by Cravo over the last 35 years, to help growers create superior results using a system that combines the benefits of climate optimization, nature and protection. They have built up substantial experience through research and by partnering on projects across 6 continents in the fruit, berry, vegetable, flower and reforestation sectors. To know more view <https://bit.ly/3kJeymi>

### **Dr. N. Inayathullah on “Recent technology & development in aquaculture industry and how it fulfills human needs”**

Dr. N. Inayathullah is the Founder & CEO of Shrimp Care Solutions in Pondicherry. He says, application of scientific knowledge and technology always help mankind to transform life at ease and paved way for a better future. Technologies applied in aquaculture are also not an exception to it. Rapid development is implemented for the last few decades in aquaculture industry that satisfies the protein requirement of human across the globe; besides ensuring employment opportunities and foreign exchange for many underdeveloped and developing countries.

### **Mr. R. Dinesh on “Guidelines for good on-farm shrimp feed management”**

Mr. R. Dinesh is an Assistant Professor (Aquaculture) at Mandapam Centre for Sustainable Aquaculture of Tamil Nadu, Dr. J. Jayalalithaa Fisheries University in Ramanathapuram, Tamilnadu. His interests are Aquaculture, Aquaculture Nutrition, Aquatic Animal Health Management. To know more view <https://bit.ly/2QJcKir>

### **Dr. Yugraj Yadava on “Improvements in value chain in the fisheries sector”**

Dr. Yugraj Yadava is the Director of Bay of Bengal Programme Inter-Governmental Organisation in Chennai, Tamilnadu. His interests are sustainable development of marine & inland fisheries; safety at sea of small-scale fishermen, improvements in the value chain in the fisheries sector and sustainable development of shrimp farming in the country.

### **Mr. Upendra Singh on “Eco-Tourism - A Step towards doubling the farmer's income”**

Mr. Upendra Singh is the Co-Founder of Farm Trip Private Limited in Jaipur, Rajasthan. His interest is agriculture. To know more view <https://bit.ly/3tiEoR6>

### **Mr. Malik Kumar Meena on “Agritech startups in India -Different categories, problems they are solving and their operations”**

Mr. Malik Kumar Meena is the Manager at Sickle Innovations, Gandhinagar, Gujarat. He has done MBA from Institute of Rural Management Anand (IRMA). To know more view <https://bit.ly/2PKgzNA>

During this meeting, Mr. Malik Kumar Meena will give a brief overview of Agritech startups in India. It will include information about startups working in different categories, what problems they are solving and about their operations. It will be useful for the students, people in agritech industry to know about startups and for farmers to find suitable solutions related to crops they are producing.

### **Ms. Rishya Pankaj Kapil on “Technological advancement in the field of agriculture by taking the example of the smart farm of IFFCO Kisan in Bijnor”**

Ms. Rishya Pankaj Kapil is Senior – Executive at IFFCO Kisan Sanchar Limited in Moradabad, U-ar Pradesh. Her interest is technological advancements in agriculture. To know more view <https://bit.ly/3dEE6y5>

### **Ms. Simone Strey on “A digital end-to-end solution to support sustainable small-scale farming”**

Ms. Simone Strey is the Co-Founder and CEO of Plantix, Indore, Madhya Pradesh. Her interest is Plantix – grow smart. To know more view <https://bit.ly/3gzCetC>

### **Mr. Kalle Sreenivasulu on “Date palm cultivation - economics & marketing details”**

Mr. Kalle Sreenivasulu is the Managing Director of Vikas Biosciences Pvt. Ltd. in Hyderabad, Telangana. His interest is Date Palm (Khajoor) Cultivation. Date Palm is the highest income crop among all Agriculture/Horticulture crops. Mr.Kalle Sreenivasulu says in India many farmers earn good income through date farming and it is majorly grown in Andhra Pradesh, Telangana, Karnataka & Tamilnadu in South India apart from Gujarat, Rajasthan and other North Indian states. To know more <https://bit.ly/39JPFDD>, <https://bit.ly/3fFexjc>

### **Dr. Chandra Kiran Sant on “Realistic perspective of Indian Dairy Industry”**

Dr. Chandra Kiran Sant is the Dairy Advisor at Livestock Management Centre in Mumbai, Maharashtra. He is also associated with \* Gomati Cooperative Milk Producers Union, Tripura as Expert Dairy Development for improving the milk quality & quantity as well as oversee installation of 40000 LPD Dairy Processing Plant. To know more view <https://bit.ly/3dAjWqq>

### **Dr. Probir Kumar Pal on “Monk fruit (a non-caloric new natural sweetener) cultivation details and market demand”**

Dr. Probir Kumar Pal is the Principal Scientist at CSIR-IHBT in Palampur, Himachal Pradesh. His area of interests are:

- Development of agrotechnology for medicinal and aromatic crop to increase the productivity and quality.

- Natural sweeteners (Stevia, Monk Fruit)

To know more view <https://bit.ly/3d1p2AU>

### **Mr. Balakrishna Nadhubee on “Cashew plantation - Cultivation, harvesting, processing and marketing”**

Mr. Balakrishna Nadhubee is the Managing Partner of Sudha Electrical Contractors in Puur, Dakshina Kannada District, Karnataka. His interests are cashew plantation; cultivation, harvesting and processing of cashew; cashew nut processing and cashew apple processing.

### **Mr. Kirtisingh Rana on “My experience in developing a Kesar mango orchard”**

Mr. Kirtisingh Rana is a farmer from Vadodara, Gujarat. They grow kesar mangoes which are ideal for the soil and weather conditions in his place. Mr. Kirtisingh Rana says kesar mangoes start to flower in December and they are able to start harvesting the fruit from April. Weather plays a big part in mango because of the 6 month period between flowering and end of fruit picking. Any inclement weather and thunderstorms could ruin the crop.

**Online meetings are available only for Premium Members**

# Dr. Bir Singh Negi

Former Advisor, APEDA



## Schemes and Programmes for Food Processing and Value Addition of Fruits and Vegetables

**D**r. Bir Singh Negi is the former Advisor, APEDA and has worked in various capacities to earn his wide experience in horticulture, post-harvest management, food processing, and organic farming. He was Director Horticulture with Government of Uttarakhand, Director Tea Board, Director Herbal Research and Development Institute, Government of Uttarakhand, and retired as Additional Commissioner, Ministry of Agriculture and Farmers' Welfare, Government of India.

Dr. Negi talks about various incentives under schemes and programmes for food processing and value addition of fruits and vegetables in India as follows.

India has a vast land area of 2.97 million sq.km with a population of 1.30 billion and is one of the most stable democratic countries. It has freshwater reservoir of 15 million hectares. India is the third largest food producer in the world after China and USA and is second largest producer of fruits and vegetables after China with 310.45 million MT. The government had launched a flagship scheme during 2004 - 2005 to double the horticulture production from 150 million MT including fruits, vegetables, flowers, spices, plantation crops, medicinal and aromatic plants, mushroom etc. India is the largest producer, consumer, and exporter of spices. More than 50 types of spices are

cultivated. Pepper, cardamom, ginger, garlic, turmeric, cumin, fennel, coriander and chilli are the major spices. India is also the treasure house of medicinal and aromatic plants. India processed food market include about 34 % grains and pulses, 32 % Beverages & others, 15% dairy products, 9% meat and marine products, 8% oils and 2 % fruits & vegetables.

India has many major food processing industries, both global and domestic standards. Nestle, Pepsi, Coke, Delmonte, Kellogg's, Unilever are some of the global industries. ITC, Dabur, Britannia, Parle, and Amul are Indian multinationals along with domestic companies like Reliance, Bharti, Wipro, Tata, and Dabur.

There is a huge unexplored opportunity underlying in food processing industry. Food processing sector comprises of mainly three segments- primary segment includes fruits cleaning, cutting, sorting, grading etc . The second segment includes preparation of pulp, flakes, and paste, while the third segment is all about preparing final products like jam, jelly, juice, bakery products, oils and drinks.

Dr. Negi points out that Maharashtra is a leading State in production horticultural products. In fruits (banana, grapes, pomegranate, citrus fruits) and vegetables (onion, tomato, beans, brinjal, and cauliflower etc). It is followed by Andhra Pradesh, Gujarat, Tamil Nadu,

Uttar Pradesh, West Bengal, Bihar, and Madhya Pradesh in production of various horticultural products.

Dr Negi says that India has many advantages such as:

- Proactive government policy with attractive fiscal incentives
- Investment in logistics, ports, and supply chain infrastructure
- Rich demographic dividend with high focus on skill development
- Availability of skilled personnel
- Opportunity for investors across the food processing supply chain

The country is ranked number 1 in the world in terms of production of milk, buffalo meat, ginger, okra, banana, papaya, mangoes, and guavas. It is ranked 2nd in the world in production of green peas, potatoes, tomato, sesame, and other commodities. It ranks 3rd in total food production next only to China and USA. The country stands 1st in terms of employment generation in food processing sector and number of factories, and 3rd in terms of output. There are 37,175 registered food processing units with fixed capital of USD 24 billion and output of USD 114 billion. The country has been witnessing higher growth in agriculture and manufacturing sector due to the strategic geographical location and proximity to food importing nations such as Middle East.







Processing of various sub segments of food in the country is very low as compared to other developed nations. Wastage in other perishables is also high in India. According to ICAR, due to lack of modern harvesting technologies and cold chain infrastructure, processing levels of fruits and vegetables in India stand at 2% while other countries do more than 60%. Processing of perishables fruits and vegetables is only 2%, marine products 23%, poultry 6%, meat 21%, and dairy products is 35%.

### FDI regulations in the food processing sector:

Dr. Negi points out that India permits 100% FDI for manufacturing sector under automatic route. FDI is applicable to retail trading sector, and 100% FDI under approval route permitted for food products manufactured or produced in India, such as floriculture, horticulture, cultivation of vegetables and mushroom. FDI is also permitted 100% for plantation crops under automatic route for rubber, tea, coffee, cardamom, palm oil and olive oil.

Dr. Negi says that export has tremendous opportunity in India. On an average every year, about 23.10 million MT of agricultural products valued at Rs. 1.31 lakh crores are exported. Total 3.59 million MT of fruits & vegetables, such as mangoes, walnuts, grapes, banana, pomegranate, onion, okra, chillies, mushroom, and potatoes have been exported to countries like UAE, Bangladesh, Malaysia, Netherland, Sri Lanka, Nepal, United Kingdom, Saudi Arabia,

Pakistan, and Qatar. There is a remarkable increase in horticultural products and progress in area expansion for higher production.

### Indicative opportunities in food processing:

Dr. Negi says that the opportunities in food processing include:

- Fruits and vegetables processing
- Cold storage
- Reefers
- IQF
- Packhouses
- Ripening chambers
- New packaging technologies for increased shelf life, retaining taste and texture
- Easy to hand and space efficient better storage facilities and logistics
- Energy efficient technologies
- Food testing labs
- R & D infrastructure

In 2018-19, processed food such as mango pulp, dried and preserved vegetables, processed vegetables and fruits, confectionery, cereal preparations, animal products, alcoholic and non-alcoholic beverages, and other miscellaneous preparations worth USD 4.60 billion were exported to countries such as USA, Vietnam, Iran, Saudi Arabia, and UAE.

### The key incentives for food processing:

- 42 mega parks at a cost of Rs. 98 billion
- NABARD has special fund of Rs. 2 thousand crores for food parks and processing units
- Loan facilities to processing units and cold chain under priority sector lending
- Preconditioning, precooling, ripening, waxing, retail packing, and labelling of fruits and vegetables exempted



from service tax

- Concessional customs duty for imported equipment
- Income Tax deduction on capital expenditure for cold chain or warehouse
- 100% income tax exemption for new food processing, preservation, and packaging units for the first 5 years and 25 to 30% thereafter.

Dr. Negi points out as key fiscal incentives the following:

- Paradigm shift in government strategy
- Focus on catalysing private investment
- Reforms in agriculture marketing to help processing sector
- Food and safety standards act to prescribe the quality and safety standards for food products

Vision Document of Ministry of Food Processing Industries (MoFPI) talks about trebling the size of investment in processed food sector by increasing the level of processing of perishables from 6% to 20%, value addition from 20 to 35% and share in global food trade from 1.5% to 3%. The outlay proposed for government support for food processing sector has increased from Rs. 650 crores in 10th five-year plan to Rs. 15077 crores during 12th five-year plan.

The MoFPI is working in close collabo-

