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Padmashree Subhash Palekar
Indian Agriculturist

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Padmashree Subhash Palekar - Explains that God first created the earth, water, vegetation and then vegetarian animals including human beings. Then, to control the animal population, God created non-vegetarian animals. There were divine laws constituted to manage this entire system with balance.

Venkata Narasimha Raju - "We are the leaders in the market when it comes to mango ripening. In the past 7 years, approx. 30,000 tonnes of fruits have been ripened at our establishment."

Dr. R S Minhas - In addition to being the Chairman of Stone Fruit Growers Association, Dr.R S Minhas is also heading an Organization working for small and marginal farmers of Himalayan region in the field of organic farming

Partha Varanashi -- Takes you from the surface to an in-depth understanding of the world around us and we realise that what we need the most in agriculture is in-depth understanding, respect and trust in nature and patience.

Raja Kumaran -- An electronic integrated company who is into the manufacturing of irrigation automation controller systems since 2010. Our business theme is irrigation automation.

M Ramakrishnan -- "We do quality assessment using images and artificial intelligence. I will briefly walk through what we do and how we bring value to the agricultural ecosystem."

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Padmashree Subhash Palekar

Indian Agriculturist

When human practices go overboard and unruly, there are chosen people who are gifted to see beyond what is there and advise corrective measures. For Padmashree Subhash Palekar, agriculture is not just science or a means of living. It is much beyond passion. Agriculture to him is divinity.

Palekarji explains that God first created the earth, water, vegetation and then vegetarian animals including human beings. Then, to control the animal population, God created non-vegetarian animals. There were divine laws constituted to manage this entire system with balance.

1. Vegetarians will eat only plant bodies - this applied to human beings too.
2. Vegetarian animals are not to eat non-vegetarian animals at any cost.
3. Non-vegetarian animals will eat only vegetarian animals to control its population.
4. Non-vegetarian animals will not eat plant bodies at any cost.
5. Non-vegetarian animals are not to eat other non-vegetarian animals.

Which category would human beings fall under?

84L living beings are distributed among so many food chains by God. Human beings are not part of any food chain. All human characteristics sync up to the characteristics of other vegetarian animals. We are not anybody's food and neither is any other animal our food. When humans eat unnatural food it tends to deposit in human cells as toxic garbage and these toxins destroys our immunity which leads to various health issues.

Our immune system is safeguarded by 4 parts:

1. White blood cells
2. T Lympocyte cells
3. B Lympocyte cells
4. Macro phase

There is a supply chain to this immune system through:

1. Enzymes
2. Good bacteria
3. Food fiber

Is natural and organic farming the same?

No, it isn't. Like human beings, plant bodies also have in-built immunity systems. It is to be noted that plants and human beings have similar intestinal systems. All activities that exist in human bodies exist in plant bodies too. As per Indian philosophy, every living body requires 5 elements for its existence. Minerals taken up by plants from the soil, gets into the human system when we consume plants. Water granted by way of monsoons enters the soil and ultimately enters our human systems. The solar energy is the 3rd major element which is granted by the Sun. 12.5 kcal solar energy is conserved in 1 sq. ft. leaf surface area in one day. We intake this as well when we consume plants. CO_2 is taken in from the air by the leaves owing to photosynthesis. The cosmic energy comes in from the cosmos. These are all bestowed upon us by God. All living beings are hence constituted by these 5 elements, which in turn is constituted by 108 elements. 108 elements are divided into 4 groups:

Soil is Annapurna, an ocean of nutrients! The nutrients get transferred to plants through roots by help of microorganisms. Almost 70% of the atmosphere consists of Nitrogen, which is taken by nitrogen-fixing bacteria, which is supplied to plants through soil. This is again a natural process. All this is evidence to the fact that we do not need any chemical fertilizer, manure, etc. that needs to be added to the soil. Per my theory, none of the manure or fertilizer is any plant body's food. These are wrong claims made by the agricultural universities and organic farming followers. Nitrogen fixing bacteria exists in the dung of the desi cows.

Then, there are 3 forms of phosphate - monovalent ortho-calcium-phosphate, divalent ortho-calcium-phosphate and trivalent ortho-calcium-phosphate. Plant roots need monovalent phos-

phate, which is not present in the soil. It cannot take in the other two forms of phosphate. Microorganism's species that are phosphate solubilizing bacteria convert divalent and trivalent into monovalent and make it available for plants. Potassium exists in the soil in surplus. However, it exists in the form of multi particle but the root needs it in single particle. This conversion is also done by microorganisms.

Desi cow dung is rich in these microorganisms. This clearly means God has given the duty of feeding plants with the required nutrients to microorganisms. God has not given any role to human beings to interfere in the growth and development of plant bodies. Everything exists in a balance. All these chemical fertilizers and organic manure and fertilizers etc. is highly unacceptable by plants. Hence, it is all deposited in the 60L crore cells of plant bodies as toxic garbage which destroys immunity of plant bodies and hence our immunity systems as well.

Even organic cultivation is not good enough?

For example, if you eat sugar it doesn't get accepted by the human body because it is processed food as there is chemical intervention in it and human body only accepts naturally-grown sugar cane juice. If you prepare jaggery with this sugar cane juice by use of lime then human body accepts it because it is a natural produce. This jaggery doesn't pose any side effects either. The unaccepted food gets deposited in the human cells as toxic garbage, which kills immunity.

Oils manufactured in wooden oil mills without mixing any chemicals is edible and acceptable by our bodies. Refined oils on the other hand is processed by use of many chemicals which is unacceptable for our human body.

Likewise, any artificial product does its part in hurting our immunity system.

Even organically grown food is not natural.

If you observe nature, you see that even among animals, the young ones of one animal never feeds on the milk of another. This rule applies to human beings as well. We are only supposed to breast feed for milk when we are a child. We don't have the authority to feed on animal milk. Hence, all duties, actions and roles are specifically described by the divine.

Today the microorganisms are not present in the soil because we have killed them with the application of organically produced manure, vermicomposting, fertilizers etc. They have in them many things in them, which are poisonous for the microorganisms. So, just like chemicals, organic fertilizers are equally harmful.

To conclude, we are not to interfere with nature; it is against the will of God!

Hence, my philosophy of farming is termed Spiritual Farming.

How would you comment on the horticulture produces from where we expect a high yield?

In forests, there are huge trees with uncountable export-quality fruits where there is no human intervention. You test the leaves of these trees in any laboratory and you will find out that these trees are not deficit of any kind of nutrients. Whereas, in human-made orchards, among all the yield you get, there is so much of waste produce as well. Hence, the miracle of nature can be realized only with no human intervention.

What is your take on training trees to have their canopies in a particular manner?

I think agricultural universities are misguiding farmers and governments. They say that this is to get more yield. This is wrong at the very foundation. They say that plants compete with each other for nutrients. That is baseless argument. Plants do not compete with each other for nutrients. They only compete for solar energy and moisture.

In the forest there is a 5-level model - you have huge trees, medium trees, bushes, plants and creepers. All these produces fruits in abundance with no competition whatsoever. This is the model that we should also follow. This can fetch farmers a minimum of Rs 3L per year from 1 acre after 3 years and Rs 6L per year after 6 years. It is trusting God and reaping benefits.

Do you give practical training of your methods anywhere?

Yes! We have workshops getting posted on YouTube every Sunday morning. You get a live video at 7:30am - 10:30am in Hindi and 5:30pm - 8:30pm in English. You can download those videos and see it at any time. These workshops provides all kinds of information about Subhash Palekar Natural Farming.

I am now writing newly updated books, which will be published in

multiple Indian languages. It will be out by December. Then, there are field visit programs that you can be part of. We declare the dates on YouTube, WhatsApp groups etc. My WA number is 9850352745. You can include me in your farmer groups and we can have daily discussions about this methodology of farming.

Post Corona crisis, I will hold workshops across India, which you can be a part of. We can send you invitations.

What do we do when there are pests and insect attacks?

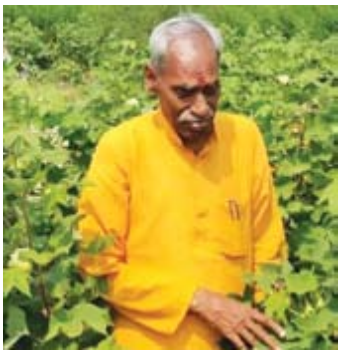
You can control the nutrient but not the water and environment. All poisons enter the plant body through water. But we do have our remedies through which things can be brought under control. But these remedies are not ready made. You need to prepare them at your place and use them as required. With these home-prepared remedies, mulching etc. you can be sure to keep away all insect and disease attacks from your farm.

Can your concept of farming make India a food-surplus country in a sustainable manner?

Yes, 100%. Our population today is 135 Cr. We are producing 26cr metric tonnes of food and we have only 35 cr acre land under cultivation. It is estimated that in 2050, our population will be about 160 Cr. Hence, by the time we need our production to double. Current chemical and organic farming is set on a decline when it comes to production. But switching to natural farming will make you witness a miracle in the first year itself. Food crisis can be solved only through Subhash Palekar Natural Farming. If there are other techniques that come in as pure, we will accept. But as of today, there are no such technologies across the globe which can sustain the future generation.

You are in the government committee to double farmers' incomes. What is the progress in that space?

I am not in any committee. We do not want anything from any government. I am giving free service to State and Central governments. During the last election to parliament, Modiji promised that if he got re-elected he ensured double income for farmers. He thought that government of India is pouring money to research institutions etc. and trusted that they will come up with a sustainable and guaranteed technology. But none of them succeeded in that mission. Then, the Government of India began to check out if there is any such viable technology registered in India. Finally, they realized only Subhash Palekar natural Farming is sustainable with a capacity to solve many issues like global warming, farmer suicides, cease urban migration etc.



Can we stand up to the global food security challenges being an agricultural-strong country?

Yes, absolutely! I have visited Africa and seen that there are huge amounts of fertile land lying uncultivated. In fact, we can utilize all such fertile lands across the globe and bring it under Subhash Palekar Natural Farming. Food crisis will definitely get solved using this method. But, it is most essential to control the population as well. Today the global population is 750 Cr. It is estimated that within 25 years it will shoot up to 900 Cr. If population is not controlled, we can never strike a balance. We cannot cut down forest land and set it up for cultivated land because that will be a huge disaster. Our earth needs 33% forest land for sustaining the environment.

Do you approve tissue-culture plants?

No, I do not approve anything that is not natural. Honestly, local banana production gives more produce than tissue-culture banana. We are thoroughly against tissue culture. In that case, we can all take tissues from our bodies and create children in laboratories. There is no need of families or parents. Tissue culture is a demon technology.

Please tell us how to prepare jeevamruth at home.

It is a long process. Take 200 litres of water and add 5-10 litres of desi cow urine, 10kg local cow dung. Then prepare the slurry of 1 kg jaggery in a small quantity of water and add this to the above mixture. Take a small quantity of this water, add 1kg of pulses flour and stir it in well to dissolve. Add this solution to the main mix. Take handful of field soil and add it as a bioculture. Stir it well and cover with a gunny bag and leave it for 48 hours for fermentation. It should not be exposed to sunlight or rain. Morning and evening stir it for 1 minute. After 48 hours the jeevamrutha is done. You can use 200-400 litres of jeevamrutha per acre every 15 days. It gives you fantastic results. You have to also spray jeevamruth as a food spray on the standing crop by mixing 2 litres of jeevamruth in 100 litres of water. After 15 days, mix 3litres of jeevamruth in 100 litres of water and spray. After another 15 days, spray a mix of 5 litres of jeevamruth in 100 litres of water and so on and so forth. The results are fantastic.

Will farmers have to deal with weeds in natural farming?

Weeds do not come uninvited into your farm. Weeds come because of urea. Urea not just promotes growth of plants, it helps weeds as well. Hence, stick to natural methods.

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Pepper

Biju Narayanan

Pepper Cultivator, Kannur, Kerala

Mr Biju Narayanan is a mechanical engineer turned agriculturist who today is the proud owner of Ullikkal Agro Farms. Ullikal Agro Farms stands tall with different varieties of a crop regally termed as black gold – pepper!

"My main area of expertise is cash crops like cashew, pepper, arecanut, coconut, etc. I also grow a large variety of fruits and spices. Among the spices my specialisation is pepper farming," says Mr Biju.

Ullikkal Farms is host to 54 varieties of pepper - one of the largest varieties of pepper cuiltivation in India. "Farming is highly profitable and gives great honor if you do it mindfully and with passion. Recently, I had a chance to represent India at the IPC (International Pepper Community)" according to Mr Biju.

Mr Biju has always been on the search to devise a methodology to improve his profits and this journey consumed everything from the history to the best practices one should adopt for cultivating pepper.

Giving an insight into this spices' history, Mr Biju says, "Pepper cultivation began gaining visibility by 3rd century BC. Our ancestors began this practice of cultivating pepper a very long time ago. In Kerala, government controlled the spices trading during the Samoothiri rule. All foreigners coming to our country were greedy towards pepper. Romans are said to have emptied the pepper treasury. Pepper, also known as the Black Gold, was traded for plants like rubber and cashew. By the time India got independence, pepper cultivation spread across to Karnataka and Tamil Nadu as well. In 1961, the artificially created pepper variety named Panniyoor-1 created quite a revolution in agriculture. Paniyoor-1 almost erased traditional varieties of pepper but it met its demise along with other pepper varieties with the onset of Quick Wilt in the 1980s. This led to farmers withdrawing from pepper cultivation. Having said that, seedlings were taken from India and cultivated in Vietnam, Cambodia, Sri Lanka etc. Soon, Vietnam soared to the position of the highest pepper producing country."

What is the Vietnam Model?

The Vietnamese took to many cost effective measures which we could adopt with a few subtle changes. They could cultivate 4 times more than what we could on one acre of land.

This is achieved through high density farming - 8ft x 8ft which is about 800 plants in one acre. In addition they use high-tech farming, i.e, adoption of irrigation with fertigation, top shoot seedlings etc. They kept the plant height to about 12ft.

This is a very cost effective method and also eliminates the need for skilled workers during harvest. They also used non-living supporters like dead trees and concrete beams. This way they ensure that all of the fertilizers are used up only by pepper plants.

Is this model sustainable in India?

Now when adopting a technology from elsewhere, it is important to tweak it for the conditions we have in our region. In my plantation:

1. I adopted the 8ft x 8ft methodology
2. I used Jackfruit and sheemakonna as supporters. That is one pit, I have a jackfruit plant, a sheemakonna plant and pepper seedlings. I also used asbestos pipes with holes. Asbestos pipes are highly cost effective pipes.
3. I went for drip irrigation with fertigation
4. I followed the Vietnamese model of shortening pepper plants and keeping them at 12ft. This is very useful in keeping the labor cost low.
5. I use grinding machines to obtain good quality pepper.

You can check out my YouTube channel - Biju's Pepper Garden: https://www.youtube.com/watch?v=l-pM8WpFBhk to see my pepper farm.

Some important points you must note are:

• Try cultivating more varieties because each variety has its own merits and demerits. To raise pepper profitably, focus on getting maximum yield under any adverse conditions.

For example, the Panniyoor - 1 is a high yielding variety but it yields only once in 2 years and it doesn't grow in shady areas and succumbs to quick wilt.

• For larger plantations, include at least 4 varieties to ensure an average yield per year.

• Your choice of land is of course, a prime factor. Choose varieties best suited for the land type.

o For shady land, varieties like Vijay, Koombukkal, P5, P2 etc.
o For dry areas: P8 and Manjamunda
o For rocky areas: Kalluvalli, Karimndi etc.

• Native varieties that we ignore often have their own demand in the international market. Ayampiri, Kalluvalli etc are very much sought after varieties among exporters. Tellicherry Extra Garbled Pepper (TEGP) is said to have the most qualitative value in the international market. TEGP was taken away by foreigners from Thalassery,

Kerala and today we can't find this variety in our country. It has a value of about Rs 22000/kg in the international market vs an average cost of Rs 400/- per kg.

• Use of machines, like pepper grinders, and plastic covered mulching can increase pepper quality.

What about native varieties?

It is a great opportunity to work towards bringing back native varieties. I was once approached by foreign companies for native peppers. They had a minimum requirement of at least 500kg per variety which was something I couldn't meet. There were willing to double the price as well. That is the potential of this market. So, if things are done right, success will surely be yours!

What kind of climate - temperature, rainfall altitude etc. - for pepper cultivation?

Pepper grows well at an altitude between 1000 ft - 3000 ft above sea level. The temperature of the place should be between 27 degrees - 35 degrees Celsius.

Can it be grown as an intercrop along with cashew?

Yes, you can. In my YouTube channel. You can see how effective it is to have cashew and pepper as intercrops.

How good is Thekkan pepper - can it be grown in hot temperatures?

Thekkan variety is more or less a fancy variety. You may get a little more outcome from Jeeramundi. In my experience these are not great varieties. It does well in our Wayanadu plantation but not in Kannur. This is perhaps due to the temperature and altitude difference. These varieties are better grown at high altitudes and low temperatures.

Can we grow pepper in areas that have 35 degrees to 40 degree temperatures?

Temperature should be up to 35 degrees Celsius. In my place, temperatures can soar to 37 degrees and 38 degrees as well. But that is not great for pepper if it is a constant scenario. Ideal temperature is 27 degrees - 35 degrees. Varieties like P8 and Manjamunda is better for hotter weather conditions.

Can we grow pepper with artificial support?

Yes, you can. Very shortly, I will be posting a video in which I will show how to use asbestos for pepper cultivation. That is a cost effective method. You can also see how to employ shady nets. Usage of shady nets is expensive but it is effective.

Do you supply plant seedlings?

Yes, we can do that. Among the 58 varieties, about 29 varieties are commercially viable. I can give you planting material.

Which variety is best suited for Karnataka?

P8, Koombukal, Vijay and Manjamunda has shown good results at Chikamaglur, Shimoga and Ennapuram.

Can we grow these varieties organically in a poly house?

Yes, sure you can. I use organic manure on my farms.

How long does pepper take to yield if we go with open field cultivation along with cashew?

That depends on the variety you grow. It is usually 15 months later that you begin getting your yield.

What is the output one can expect from an acre of pepper cultivation?

You can get a minimum of 1 kg dry pepper from each plant after 4 years. After 6 years you begin getting 1.5 - 2 kg.

Can we visit your farm?

Oh yes, you may.

What is the price of 1kg pepper in the international market and which are the countries that we can participate in trade?

The price per kg differs for each variety. The minimum requirement is 500kgs for export. Most of the European countries are good for export. The French company I deal with has branches in various European countries.

Can you supply pepper in bulk?

Yes, of course.

Are there any bush varieties in pepper?

All pepper varieties have bush varieties as well. I have 18 varieties of bush peppers.

How can we solve fungal infection on pepper plants?

Following good agricultural practice will keep fungal infection at bay. You have to do a one year planning. Start from April - use dolomite or lime. I can give you detailed information if you send me an email.

What is the minimum price per kg in India for pepper?

Minimum price is about Rs.500 per kg.

Please talk about the native varieties of pepper in Karanataka?

Most Kerala varieties are good for cultivation in Coorg as well. The native varieties like manjamunda, karimundi and kalluvalli are available in Karanataka.

What is your opinion about the Brazil variety?

Our Indian variety is much better than Brazil varieties. It is more profitable also. Foreign countries come to India for good quality pepper seedlings?

You had suggested using jackfruit as a supporting material. Jackfruit requires a spacing of 24x24; so, how do you manage the jackfruit plants?

The jackfruit plants' branches are cut to suit the spacing for pepper. Watch my YouTube video or call me to understand how to do this, better.

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Quality Assessment

Quantity, in all industries, has become more or a less a once upon a time thing. The focus today is quantity with quality. Along with his team, Mr. Ramkrishna of Intello Labs works effectively in the quality space.

"We do quality assessment using images and artificial intelligence. I will briefly walk through what we do and how we bring value to the agricultural ecosystem."

One of the major problems in the food business today is food loss. There is tremendous amount of loss realised across the supply chain in different parts of the agricultural ecosystem. About 20% of the fresh produce gets lost in the supply chain.

Also, consumers are getting more demanding in terms of quality, safety, nutritional value. They are also wiling to pay premium charges for better quality goods. Food businesses struggle to meet these expectations. That happens because the existing tools, technologies and processes from our traditional approach are non optimal. There is high level of subjectivity involved in the way people assess quality. You do not have super scale labors. So anybody who is an operations person starts assessing quality and doesnt really understand it enough. There is zero auditability. You cannot determine what happened 1 week prior. If it is termed good quality we just accept it. Then, later you see bad items, dump and losses. There is a cost of resources. One may say that it is cheap to hire low cost labor and put him on the field to assess quality. But eventually, when you look at the total cost of dump, rejections, consumer compliance, management time to address all these issues, etc makes it an extremely expensive exercise. When we have used the technology and assessed the quality, showed the data to different clients we get a response that they never knew that the problem was so severe. That is how transparent technology can make things.

Intello Labs has come up with an AI based product that can be operated through a mobile phone or fixed cameras which help you click images of the item. Once the image is clicked, the algorithm starts analyzing each element in the picture and generating a report. You get a quality score on the percentage of good and bad items within the product. Over a period you get to see brilliant dashboards - trends and reports that help you take informed decisions. It helps you assess if you should stop procuring certain products at certain seasons, etc.

"To delve deeper, the algorithm starts drawing contours around every element in the image. It is streamed by uploading few hundred types of images of the same defect. Depending upon the organisation's definitions, practices and threshold, it shoots an output."

M Ramakrishnan

Vice President, Sales and Marketing,
Intello Labs, New Delhi

Tell us about your products

The mobile app is called as Intello Track Solution. It is portable and can be deployed across the supply chain. It can be used at the farm gate level, collection centre, warehouse or fulfilment centre. In physical retail stores, companies use it to monitor the shelf quality. All retail operations have Standard Operating Procedures that one is supposed to check the quality of the top-most item 3-4 times a day because that is what the consumer looks at. If they see a bad quality item on top of the shelf, they walk away. They don't sort. Hence, data collection should be streamlined and organized. You should keep track who came and checked and when and what losses were incurred. This helps tighten the process across the board. In physical retail we have had people using this to check the quality of the dump as well.

Another product we have is Intello Sort. We take the same mobile based technology and implement it to a machine so that the machine segregates the good vs bad items automatically. We have a fixed camera, roller belt where the items are rotating 360 degrees so that you get a full assessment of the item and not just its top layer. Depending on whether it is good or bad it moves to another zone. It can be used for multiple commodities. We are training it for round items to start with . Very soon it will be used for apples, oranges, pomegranate etc.

We are have a great reputation and work with established brands across the US, India, Indonesia, Thailand, etc. We also work with someof the most respected accelerators around the globe like Thrive (US), Grow (Singapore), etc. We work with more than 40 different commodities. We know there are other companies in this space but so far nobody has such wide a range in terms of coverage.

A case study

We have developed a case study to show how we have been implementing this in different locations. When one of the largest ecommerce companies in India started off with fresh produce as part of their grocery business, they did not have a well-documented quality manual. So, we worked with them and helped them define and measure quality. They were also very progressive and forward looking. They were not interested in who brought what for them to

sell, they were interested in the quality of the products they would be handing over to their consumers.
Hence, we started with the benchmarking exercise at the consumer end. We did mystery shopping, order from different online stores and from some physical retail stores. We would then measure and compare their quality. We would tell the client at what position they stand in comparison to others in the market.
We would then trace the problem back to the farm level. We would map to where in the supply chain could this have been rectified. It could be at the farm level, packaging level etc. It was a some great quality work. They even shared these findings with all their suppliers and educated them about the quality journey they had embarked on. A few months after this implementation, if they had a problem with say ginger perhaps because it was too muddy, they could have simpler conversations with their vendors. We have been working with them for a year now and within about 6 -8 months of engagement we saw that their customer complaints, refunds etc. started declining by about 50%. There was also a hike in customer score by about 20%.

How do you price your products?

This is a subscription based model. We offer a license and the license fee is a monthly one which depends on the quantum of images you take. Hence, number of commodities influences the number of licenses and hence the number of images and depending on that we charge a certain fee.

Do you offer services to the farmers as well?

We are doing a small test exercise now. It is a free distribution to farmers and FPOs for a short period. We are interested in seeing if this increases the adoption and / or it helps us influence other businesses into adopting our technology. From a revenue generation point of view, this is primarily a B2B model.

What products do you cover?

We cover about 45 different fruits and vegetables like potatoes, onion, tomato, apple, orange, pomegranate, banana, bottle gourd, bitter gourd, etc. Most of the items that are consumed on a daily basis is covered.

Do you have any grading system for arecanuts?

Not right now, sorry because we primarily focus on fruits and vegetables. We can discuss it offline. We need to understand your annual production etc.

This technology I understand is used only for fresh foods right?

Yes. the technology can be used for multiple things. But we as a company are focused on fresh fruits and vegetables. We have done it for cardamom. Hence, it can be done for grains and other spices as well.

Can you explain how things shape up between imaging to analysing?

The image is uploaded to the cloud. On the cloud, the uploaded image is checked anda analysed as per the programming and data that is fed into the system. The algorithm is fed into the system, so that the system can analyse the product for any defects.

How do the farmers get trained about the quality of production - do you provide it?

The farmers typically know a few common quality parameters which people look into. We do help them with the fact that they can also use the app. To share an example, we had a farmer who used our application to sell his oranges. He had his stock at a cold storage at MP. He got our app, got a quality report in pdf format and shared that information on WhatsApp with his contacts. We were worried because he was outright that the oranges were of 80% quality. But we realised that for every grade, there is a buyer out there with a price in mind. He got a buyer who likes the transparency and he closed the deal.
We help in this perspective, We do not do direct training.

Is this app only limited for vegetables or is it something you would do for grains / pulses as well?

As of now we are focusing on fruits and vegetables. We may move into the grains and pulses sector in future. The method, of course, can be used for other products as well.

Can we use this technology for soil analysis?

No, it doesn't work for soil analysis. You can train the technology only with whatever you can see with the human eye.

Do you use this for leafy vegetables as well?

Yes and no. We can do greens as well. We have done it for an ecommerce company. The challenge there is in leaves, you have to manually segregate each leaf to take the image and assess if it is of good quality. So if you are doing a benchmarking exercise, you can do it on a sample. Otherwise on a mass scale, at a farm / warehouse level, it doesn't work easily for leaves.

How about factors like over ripening, etc.?

Ripe / under ripe / over ripe is part of the assessment. That is primarily done by looking at the color of the item. We are not analysing anything that would be interior to the fruit. It is an exterior analysis.

Does this technology bias the outcome?

Not at all. Rather it brings complete transparency in the system. The quality assessment is objective, unbiased and system-driven.

How does your technology compare with what is available around the world?

We have demonstrated impact for large, reputed companies around the world. We have an established client base in the US and APAC. In India, we are working with lot of large retailers, wholesalers and many ecommerce companies. Hence, we have proven ourselves in comparison with what is available in the market across the globe.

Does the sorting and grading happen at the warehouse level and packing level?

It can be deployed across the supply chain. It can be at the farmgate level, collection centre, distribution centre or a warehouse. It can be at a physical store. All that is possible.

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Question

Q&A

Answer

09 SANDALWOOD CULTIVATION

12farmer7: *Hi, I'm interested in Sandalwood Cultivation and looking to know more about same. Could someone please inbox me with details if have first hand info doing, have couple of naive queries. Thanks.*

Answer 1 -- garao56 : Please inform the location and number of acres of land to be brought under cultivation. For further inquiries please contact us for guidance and project reports.

12farmer7: Hi Sir, Thanks for prompt reply. Im considering cultivation near by Madanapalle,AP-517325 location. So far, i haven't bought any land, but have plans go for 5-10 acres.
Please let me know the kind of land i should be selecting for cultivation and if cultivation can survive in said locations climate.
Also, should i be planting host tress in advance before going for sandalwood plantation? If so, How many months before host trees needs to be planted. Also, which would be good host plant for said location?

Answer 2 -- garao56: Well drained red soil type is better. Right from seed dibbling we have to plant Redgram plant as host in the same polythene pouch till tranplantin on the main field.

12farmer7: Hi Sir, Thanks for your reply. If i would like to buy Plants from Nursery, what should be age of the plants i should go for to increase the chances of survival after plantation?
Also, after plantation in main land, which would be the best/good host? Should we plant host in advance to Sandalwood plants? if so, how long before host plantation needs to be done.

Answer 3 -- shanmuga06 : The healthy and very opt for planting the sandalwood will have the following conditions like one year old ,(the seed also belongs to RooT-1),the height of the sandalwood seedling will be one and feet height with black stalk rich green leaves. Any kind of cultivation as well as plantation please note the selection of seeds/seedlings vital role .

10 MIXED CROPPING OF COCONUT PLANTS WITH ARECANUT PLANTS

abhi1994: *Friends I have 2 acres of land in my Village in mysuru district I have plans to do mixed cropping of coconut and arecanut plantation so anyone here plz guide me the best method to this plantation,*
I hope to get best replies as soon as possible friends

Answer 1 -- sriramsree : kindly approach nearby KVK institute,they can support you about subsides and other assistance.

Answer 2 -- venudvg2010 : Don't go for Areca nut. Instead of that you can plant Mahogany which can give you good returns in 8 - 10 years. Don't waste your resources. This is my opinion.

11 ORGANIC FARMING ON CULTIVABLE WASTE-LAND

vibhus: *Dear Experts, I needed some advice on the feasibility of doing organic farming on cultivable wasteland. Please find below my questions-*
. Is a cultivable wasteland in a village lying idle for 3-5 years a good option for organic farming?
2. What will be the steps required for land preparation? How will they be different from the steps of regular agricultural land?
3. Since there has been no chemical farming on the cultivable wasteland for for more than 3 years, will the organic certification can be availed early after the restart?
4. What can be the prospective lease price for an acre of cultivable wasteland?
5. Will there be a big difference in the production cost on cultivable wasteland compared to regular agricultural land?
6. Any other relevant information you want to share.

Answer 1 -- ecojobsin: 1. Yes.
2. Depend on land/soil and atmospheric characteristics, and the crops planned.
3. Yes. It will be easier to get certification as there is no chemical history to be corrected.
4. Lease rate depends on location, infrastructure and other relevant factors applicable.
5. Cost depends on what you want to cultivate, the present conditions of land/soil and atmosphere, water sources and supply arrangements, and other infrastructure required etc.
We provide complete consultancy services for Organic Farming projects with High Value Crops, in all types of land and all climatic locations.

12 FCO CERTIFICATE

lalitvashista: *We are a Process Engineering company . We have tried and tested very high grade Ortho-Silicic Acid (OSA)-Based Plant Stress Manager & Immunity Booster. To sell in the market we need an FCO certificate. Can anyone guide us through the Application process for Maharashtra. We are interested to hire a consultant who can give us this service.*
Secondly we have some more Organic Fertilisers and Insecticides for different crops, improving plant health and also increasing yields per Hectare.. We want Dealers and Distributors to contact us so we can share the product range.

Answer 1 -- garao56 : You are advised to approach the Asst. Director of Agriculture, locally for FCO particulars.