इंडियन कॉफ़ी
IndianCoffee

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Coffee Board of India Participated in Shanghai Global Food Trade Show 2019, Shanghai, China

Recipe - Chocolate Coffee

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कॉफ़ी सारणी **CoffeeTable**

विषय-सूची C O N T E N T S

संपादक के नाम पर पत्र **Letters to the Editor**

Your views, opinions & observations are welcome as long as it is in the spirit of the magazine's principles and values, and may be sent to: editor.indiancoffee1@gmail.com
The publisher reserves the right to respond/publish the same in this magazine.

स्वच्छ भारत

स्वच्छ भारत अभियान

सुरक्षित आवास, शुद्ध वातावरण
यही हमारा स्वच्छ भारत देश है
हम "स्वच्छ भारत" को
सफल बनाएं।

कॉफ़ी बोर्ड

वाणिज्य एवं उद्योग मंत्रालय
भारत सरकार

From the Secretary's desk

Coffee Times

Management of coffee by-products and wastes generated during coffee processing throughout the coffee value chain from farm-to-cup is a challenging task. Coffee pulp, coffee effluent, coffee husk and Spent coffee grounds are the different coffee by-products/wastes generated during the processing of coffee at different stages. The coffee wastes and by-products from coffee processing at estate level and also at curing works have been mostly utilized as a source of organic manure. In recent years a great deal of work has been done on utilization spent coffee grounds, which is currently estimated at about eight million metric tonnes. Adopting proper disposal of coffee wastes and by-products and turning them into value added products will improve economic condition of the growers besides contributing to positive image of coffee and sustainability. We present an article on the utilization of coffee wastes in this issue for the benefit of coffee fraternity.

In the last issue, we have discussed about the importance of Shade trees to the coffee plantations. Now we come to the question of "what kind of trees to plant" and "how to manage them". The significance of management of shade trees in the coffee plantations has been well recognized in India for over two centuries. The science of selecting right kind of shade trees for coffee plantations and its management has been narrated in the article "Shade" which is reproduced in this issue for the benefit of growers.

As a part of promotion of Indian Coffee in global market Coffee Board of India has participated in the FHC-Shanghai Global Food Trade Show-2019 held at Shanghai, China during November, 2019. The FHC is a major platform for global food and beverage companies to showcase their products. This kind of trade shows create lasting impressions, incredible Face-to-Face Marketing opportunities resulting in direct sale opportunities. A brief report on the Board's participation in the Trade Show is presented in this issue for the benefit of our readers.

Apart from the above, regular features viz., Market Watch, Calendar of Coffee Estate Operations; Coffee Recipe etc. are presented in this issue.

Hope our readers will enjoy the contents of this edition over a cup of coffee!

Dr. Srivatsa Krishna
Secretary

E.F. STUDER

Coffee Shade

When coffee is grown without shade, as in Brazil, the soil is exhausted in a relatively short time, and a shift is necessary to a new location. In India, where coffee is being grown for over a century, the soil shows no signs of exhaustion. The plant may weaken due to diverse causes and need replacement, but the soil has retained its fertility and can continue to grow coffee. The reason is not far to seek and is found in the *Shade* under which coffee is grown.

The depression years and accompanying labour shortage, has forced many a planter to thin out his shade too much, in order to obtain larger crops, or, neglect regulation of the shade altogether; both of these have affected the estates adversely.

The first effect of the shade is to prevent the loss of top soil by erosion which ruined many of the earliest plantings, especially in the Malabar-Wayanad and the western slopes of Coorg Ghats. It was not so in Mysore where the practice of growing shade was adopted by the pioneer planters.

The second benefit conferred by shade is the enrichment of the soil by the leaf, branch and twigs mulch from the trees. We must not forget either that the shade trees afford shelter to innumerable birds, which are not only pleasant to see and many of them to hear, but are incalculable service not only by their droppings, but as insect-eaters. Dr. Chokkanna estimates the mulch from the shade trees amounts to about 10,000 lbs. per acre annually in deep shade. The potential value of this mulch is equal to 120 lbs. Nitrogen, 70 lbs. Potash and 20 lbs. Phosphoric acid.

A third benefit is the preservation of any excessive temperature and consequent loss of moisture of the soil. It is reckoned that the difference in temperature between soils exposed to the sun, and one under shade in the same area, in day time may amount even to 60^0F. A severe drying of the soil affects the plant by stopping the free access of air to the roots; the water supply is decreased and the feeding roots which are near the surface dry up.

Wind is an important drying agent of the soil. Especially the dry East wing of summer depletes the soil of large quantities of water. Wind belts in selected places are the answer. The well-established shade not only protects coffee from the sun's rays but shields it from those parching winds which sweep across the plains and dry up the soil.

Neglecting to provide a shelter against the sun's rays, and some protection for the soil against the denuding effect of tropical rains, can well lead to widespread deterioration of coffee.

In a cool and moist atmosphere the activity of the micro-organisms which break up the fertilizing constituents in the soil to make them available for the plant, is encouraged; and, shade provides this atmosphere. In the higher ranges where frosts occur shade is an important element of protection of the plants.

These multiple benefits from shade fully justified Elliot when he said that the greatest point connected with coffee is **shade**. He even mentions that with plenty of good shade trees on the land, one can close the plantation gates, and abandon the land, and, as long as cattle were kept out of it, return ten years later, saw down the coffee, grow suckers from the stumps, plant up vacancies, and in four or five years the Estate would be as good as ever, and the land even better. For, it would not have been exhausted by crop, and the fallen leaves from the shade trees, would have enriched the soil, provided that the trees were of the best kind, but that the same could not be done with bad shade trees.

Now we come to the question of "what kind of trees to plant" and, "how to manage them".

The most popular kinds of shade trees belong to

the *Ficus* family. They are the *Cub Busree*, the *Gonee*, the *Kurry Busree*, *Eelee Busree*, the *Heb* Mitlee and the *Atti*. All these give a good pattern of light and shade and also a good deposit of leaf mulch. They have large spreading branches, and will suit any facing and gradient. The first place amongst these is adjudged to the *Mitlee* and *Cub Busree* by common consent.

The *Nerul*, the Hessan, the *Wartee*, the *Godda*, the *Tare* and the *Jaak* are also widely found. The *Nerul* (*Nerale;Nirol*) is a fairly quick grower, is easily established and can be used as a good general standby shade tree. The *Tare* deservedly a great favourite in the Tamil country does not seem to have the same reputation in Mysore. The *Jak* with its thick leaves is wholesome and should be used especially in hot facing its foliage is sufficiently thick to keep out strong sunlight, but not dense enough to prevent a free circulation of air. But there is an objection to the *Jak* on account of the attraction the fruit offers to all the stray cattle. If the fruits are removed while still immature and put into the compost pit, or else buried, there would be no danger from the stray cattle. It is also said that *Jak* helps the spread of *Green Bug*; but this is a minor pest in Mysore.

The *Malle Gerguttee* also called *Neer Atti* grows to gigantic proportions. It is not commonly planted, but I have always found it good. A tree looking very much like the *Neer Atti* is the *Nai Nerale*. This is also planted sometimes.

We have representatives of the *Albizzia* family (*Leguminosae*) in the *Bagees: Kal Bage* and *Hotten Bage*, and *Albizzia moluccana*). The *Bage* with its think foliage will suit a northern facing. *Albizzia moluccana* is a quick grower. It is said that in four or five years these plants planted 30 feet apart will cover the coffee plants completely. This species is not to be found to any great extent in Mysore. It is said that when the tree is well established its roots interfere with those of coffee.

Of the exotics, I shall mention the ubiquitous *Silver Oak* and the *Dadap*. The popularity of the former is declining now; but there was a time when it was used exclusively on high elevations. The ease with which it was regulated and the abundance of its mulch, may have accounted for its early popularity; but its narrow spread and the poorness of its mulch in mineral constituents have doomed it as also possibly it's too exclusive use at one time.

The *Dadap* had proved a great blessing. Its quick growth, especially in new clearings, and its fertilizing value, both by the mulch and the root nodules, need only be mentioned regarding its advantages. The idea is prevalent that mature *Dadaps* are harmful to coffee; but I know from personal experience that this is not so. I can mention certain estates in South Mysore, which give the best returns and they have huge *Dadaps* growing.

Dr Chokkanna has a very attractive table showing the manurial value of the mulch from nine kinds of shade trees. It can be seen next-door in the Research Department stall in the exhibition.

The list of shade trees mentioned is far from complete; but it includes all the best species commonly found in Mysore. If one plants a section from these, one will be sure to have best for his coffee as regards shade. The selection as a matter of course will have to depend on the latitude, facings, temperature and nature of the soil. Yet, one should be careful to have a mixture of shade trees and not too many of the same *Jat* together.

The shade should be neither too great nor too little. It is generally on the heavy side in Mysore estates. In hot facings and in situation exposed to high winds, a thicker shade is required, while a lighter one suits cool facings. Steep slopes require thicker shade particularly to prevent soil erosion. The planter must be guided by local experience since it is impossible to write precisely on the subject of shade. As a general guide it may be stated that about twice as much shade is required on a southern as on a northern slope; that rather more shade is required on a

western than on an eastern aspect; and, that the eastern slope required less shade than a southern aspect.

The spacing at which shade trees should be planted, or left, when clearing jungle, depends on the area covered by their lateral branches. The aim should be to have the smallest number of trees per acre. If the number is too large, the leaf-deposit from the trees decreases, as they will have practically no lateral branches of any size. For this reason, trees like the *Howlige* are not suitable for shade, except in the bottom of ravines where they may be planted in order to shade the upper side of ridges. Too many trees standing amidst coffee compete with the latter and affect it adversely.

The height to which shade trees grow deserves consideration. If the height is too low there is the danger of the temperature increase in the atmosphere near the coffee plants; if the shade is too tall the "drip" from the branches will be injurious to the coffee plants. The latter, if it occurs will necessitate growing of a light secondary shade to break the fall of droplets from the "*drip*".

Shade trees are far from static and they require constant regulation by pruning and topping to maintain the proper shade. Management of shade trees is a work of great importance. It is also one of great difficulty: for example, a person who marks down shade trees for removal as being unwanted, should at the same time have a thorough knowledge of the kinds most worthy of retention. The guiding principle for shade regulation should be an even distribution of light and shade and we can achieve this by treating the main laterals in the same way as we do coffee primates while pruning.

In their early stage of growth it is usual to prune the lower branches of shade trees to prevent interference with the coffee plants. If we are not careful with this pruning we will obtain trees that become too tall in a short time.

It is necessary sometimes to remove a shade tree wholesale. If the shade is excessive the coffee will not crop well; if the shade is deficient or composed of a bad class of trees, the coffee plants will be certain to suffer from stem borer and leaf disease. The cheapest and safest way of removal of unwanted shade trees is by way of ringing the tree and applying an arsenical poison to the wound just below the cambium. The nearer the ground the cut is, the larger the number of suckers that will have to be removed until the tree dies. It is advisable therefore, to make the cut as high as possible.

Before concluding, I must say a word about 'clearings'. Having planted the young shade trees there arise the question of providing shade from them; for, without it their growth will be slow. We require, therefore, some quick growing trees as nurses for the good *jat* shade trees. In olden days the Charcoal tree (*Gorkal*) was planted as a nurse tree for the more desirable trees. The Castor was also used. Nowadays the *Dadap* is used exclusively and in large numbers. One *Dadap* to every coffee plant is the rule. These are easily removed after the more desirable trees are ready to take their place.

According to Elliot, young shade trees in clearings should be planted in lines running from East to West, and the trees should be planted so close that they may, in five or six years time, touch each other. The object of this formation is that the declination of the sun is southerly during the clear sky season; a close shadow may be cast from the South to the North, so that the spaces between the lines may have a lateral shade cast on them. When the trees being to crowd each other, every alternate one should of course be taken out, and this may be repeated a second time if necessary.

Good clearings will make good fields; and good shade will help them to best crops.

Featured in Indian Coffee September 1951. This paper was presented at the first Planters' and Research Workers' Conference, organised by the Coffee Board, held on April 20 & 21, 1951 at Chikmagalur.

Anusha K,
Extension Inspector **and**
Muralidhara HR
Senior Liaison Officer
Coffee Board, Somwarpet

Coffee by-products

Coffee is one of the most important commercial crops of the world. It is the second most traded commodity next to the petroleum products and most consumed beverage in the world. The term coffee is referred to a wide range of products from freshly harvested fruits to separated green beans and cup of beverage that is consumed finally. Coffee being the most consumed and traded, the industry results in a high volume of by-products and wastes, both on farm and commercial areas causing pollution. Coffee all over the world is cultivated over 11 million hectares (Michon Scott, Climate and Coffee, 2015; https://www.climate.gov/news-features/climate-and/climate-coffee). In India itself coffee is grown over an area of 4, 54,722 Ha out of which 2, 28,910 Ha is Arabica and 2, 25,812 Ha is Robusta. The total production of coffee in the world is 5.7 Million Metric Tonne (MMT) of Arabica and 4.26 MMT of Robusta, totalling to 9.96 MMT (ICO Report 2019). Under Indian scenario, Arabica production is 0.1 MMT and Robusta production is 0.22 MMT (www.indiacoffee.org).

Coffee production leads to an average production of 25 MMT of solid residues including coffee husks, pulp, spent coffee grounds, and defective coffee beans which are relevant source of pollution and environmental threat. Coffee berries are processed either by dry or wet method. In most of the cases, wet processing is regarded for producing high quality product. Approximately 90 percent of Arabica and 10 percent of Robusta coffee is processed by wet method. During wet processing, 16.46 MMT of wet pulp is generated in the world, of which 0.08 MMT is produced in India. During dry processing, the solid wastes generated are coffee husks and low quality defective beans. Around 4.4 MMT of cherry husk and 13.89 MMT of parchment husk are produced globally during curing of coffee, out of which India contributes 0.21 MMT cherry husk and 0.27 MMT of parchment husk. Finally the roasting and grinding industry leads to production of 8.0 MMT of spent coffee grounds used for liquid coffee. Apart from these, single use coffee cups also leads to plastic pollution crisis in the world. Approximately 2.25 Billion cups per day and 820 Billion cups per annum were dumped globally as waste and non recycled plastics. Around 5000 cups are used in a minute over the world. It is claimed that such cups are made of paper. But, it's not the whole truth. Coffee cups are made of paper which is obviously recyclable. But, to make it waterproof and to hold drink, it is lined with polyethylene plastic. Disposable paper cups contain 5% polyurethane plastic which make composting and recycling extremely difficult. As this being a difficult procedure, most of the cups goes to landfills. Actually only one percent of single use cups are recycled in the world. An item which is used only once takes centuries to break down and cause a great disaster to earth. Besides, all these wastes and by-products, coffee industry uses enormous quantity of plastic in packaging of coffee powder to retain the freshness and quality of coffee.

In 2016, the world generated 242 million tonnes of plastic waste. This waste primarily originated from three regions-57 million tonnes from East Asia and the Pacific, 45 million tonnes from Europe and Central Asia, and 35 million tonnes from North America. The visibility of plastic waste is increasing because of its accumulation in recent decades and its negative impact on the surrounding environment and human health. Unlike organic waste, plastic can take hundreds to thousands of years to decompose in nature. Hence, there is a large need to find an alternate to plastic which is eco-friendly and easily degradable on the earth.

The by-products of coffee industry have got a large scope to replace plastic in the world. Many scientists and organizations have been seriously studying and researching in this line. The most popular findings and research carried upon are presented here.

Coffee Pulp

Coffee pulp is the first by product obtained during wet processing. Annually, an average of 16.45 MMT of coffee pulp is produced globally. Coffee pulp contains caffeine and tannins, which make its toxic in nature, resulting in disposal problem. Hence, it is essential to treat and manage it by organic means. Coffee pulp is heavily loaded with organic matter, which makes it an ideal substrate for microbial processes for production of value added products. When the effluent is disposed into water sources without proper treatment, oxygen level reduces and makes aquatic life impossible. Several solutions and alternative uses of coffee pulp have been studied. These include as fertilizers, livestock feed, compost etc. Attempts have been made to detoxify it for improved application as feed and to produce several products as enzymes, organic acids, flavor and aroma compounds (Pandey A et al., 2000). Coffee pulp is also used for bioethanol production. Coffee pulp may also serve as useful replacement of yellow corn maize in diets of farmed catfish (Fagbenro and Arowosoge,1991). Coffee pulp can replace upto 20 percent of commercial concentrates in dairy cattle feeds, with no adverse effect on animals and 30 percent cost efficient (Rajkumar Rathinavelu and Giorgio Graziosi, 2005).

Coffee pulp can be treated and used as organic fertilizer. Composted coffee pulp contains 0.5 percent nitrogen, 0.15 percent phosphorus and 0.5 percent potassium. The pulp kept in piles for 3 to 12 months turns into rich, black humus that can be used for composting. The use of organic fertilizer helps to improve soil properties. Use of organic fertilizer also reduce the need for inorganic fertilizer and saves the money of farmers.

Coffee pulp can also be used as planting soil for mushroom production. After fermenting for two days, the pulp is pasteurized with hot water, drained, dried, and mixed with mushroom spores. Then, they are filled in plastic bags. After 3 to 4 weeks, mushroom grows out of the holes and can be collected.

Coffee Effluent

Processing of coffee by wet method requires large quantity of clean water. The approximate water requirement for production of one tonne clean coffee is 85,085 L for Arabica and 93,000 L for Robusta while using conventional pulper and washer. Studies have revealed that quantum of effluent generated and pollution load is about 12,000 to 60,000 L and 18,000 to 70,000 L for every tonne of clean Arabica and Robusta coffee processed respectively. India produces around 1.8 to 2 million cubic meter of effluent annually. This effluent is highly acidic and contains dissolved and suspended biodegradable organic matters. These effluents pollute the receiving water bodies if not treated properly before discharge. After efficient neutralization by lime treatment, it can be used for irrigation on plantations.

Coffee Husk

Coffee husk is probably the major residue from coffee berries processing. It is the main by-product from the dry method which is composed of dried skin and parchment husk. Around 4.4 MMT of cherry husk and 13.89 MMT of parchment husk is produced globally during curing of coffee. Cherry husks can be reutilized as substrate for biogas and alchohol production. They can also be used as biosorbents for cyanides, removal of dyes and heavy metals from aqueous solutions and as biosorbents for defluoridation of water. It can be used as a substrate for

mushroom production and for composting. Coffee husks are also used utilized as a potential functional ingredient in food production. The ground coffee husks are used a food supplement in smoothies, granolas, and juices. High concentration of caffeine and tannins in husks could be extracted for use in energy drinks. Fibre in coffee husk can be included in energy bars by grinding the whole coffee husk, thereby including antioxidants and fibre into the product. Coffee husk products can be also launched as allergic friendly as it is gluten free. Coffee husk is a useful substrate for yeast and mould production as it contains high amount of fermented sugars.

Coffee husk has become a major boon to replace single use plastic cups and saucers in day to day life. A company called Huskee has invented reusable coffee cups. HuskeeCup features coffee husk as a raw material. It is made from a unique **eco-composite polymer** which has been chosen after undergoing extensive research and development. HuskeeCup is made from coffee husk, which is reusable and recyclable. It is cheap and crack resistant both in café and home environment. It is designed to keep coffee hotter for longer, durable and comfortable to hold.

Like any other husks, coffee husk can be used for producing paper in paper industry. By this four billion trees, or 35% of the total trees that are chopped down for use in paper industries can be saved (https://us.ecoffeecup.com/). 20 million trees are used to produce single used paper cups every year. This can also be saved by using Huskeecups and saucers.

Spent Coffee Grounds

Spent Coffee Grounds is produced from brewing coffee. Spent coffee grounds are usually disposed either in landfill sites or as burning fuel in boilers in coffee industry. This solid residue has an additional disposal problem as it can be used for adulteration of roasted and ground coffee. Approximately, 8 MMT of spent coffee ground is produced per annum globally.

Spent coffee grounds are used to manufacture an innovative durable espresso and cappuccino cup which smells coffee. The spent coffee grounds are mixed with biopolymers, starch, cellulose, resins, wax and oils. The resulting composite material was biodegradable, light with smell of coffee and look of dark wood. Espresso and Cappuccinno cups were made from this by a German company, Kaffeeform.

Spent Coffee Grounds can also be used for production of fabrics. A new technology is developed by a Taiwan company to produce yarns from coffee wastes. Fabric made by this technology has natural anti-odour qualities, dries faster than cotton and better UV ray protection. Spent Coffee grounds have an ideal ingredient for textile ink. The grounds are mixed with vinegar, strained, and then cooked to let extra fluids to evaporate. The ink thus produced is used for printing in t-shirts.

Spent coffee grounds when blended with orange peels produced bioplastics which is biodegradable in some studies (Manasi and Rohith, 2019).

Spent coffee ground is a source of biodiesel production, bioethanol production and as burning fuel in industries. It is a source of natural phenolic antioxidants and is used as a biomaterial in pharmaceutical industry, food industry and in polymer industry.

Furniture are produced from spent coffee grounds and recycled plastics. The materials produced are extremely robust, waterproof and scratch resistant. It does not require neither sanding nor finishing because of its matte finish.

Spent coffee ground can be used to produce table lamps, floor lamps and bowls. These are natural, biodegradable and renewable. It conserves colour and smell of coffee. Coffee grounds can be utilized as an additive and lightening raw material in ceramic manufacturing for construction purposes. Incorporating 4 percent of coffee ground to the bricks causes an increase in strength of brick. Coffee grounds could be reutilized as a secondary clay raw material to form adequate clay construction ceramics which could reduce the energy consumption of a building (Samuel Jaddu et al.,2016).

Some of the brands and materials made out of spent coffee grounds and other by-products of coffee listed under www.materialdistrict.com are presented shortly here.

Coffee Polymer

Coffee polymer is a material consisting of 30% coffee grounds and 70 other biobased raw materials. There are three versions available- Espresso polymer, Cappucino polymer and Americano polymer. It is biobased and biodegradable. It is perfect for long term products like chairs and tray.

Biocaif

BioCaif is a composite material consisting of ground coffee waste and a bio-polymer, Polylactic Acid (PLA). They consist of a coffee cup, a takeaway lid and stirrers. The coffee cup is supplied in a 6oz, 8oz and 12oz cup and is aimed to be used within cafes. The BioCaif lid was developed so that the cup can be used as a reusable cup. The BioCaif stirrers are produced in sheet form and are simply snapped off before use.

Morning Ritual

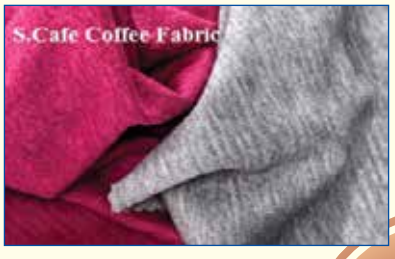
Morning Ritual is a series of biodegradable containers made of coffee grounds and newspaper waste. After coffee ground waste is collected from local coffee shops, it is mixed with newspaper pulp and a natural binding agent. The mixture is molded by hand, and the final colour and scent of each item are the result of the various types of coffee used.

Coffee to burn pellets

Coffee to Burn pellets are pellets for a pellet stove made from waste materials- coffee grounds and sawdust. The pellets have a higher caloric value than ordinary pellets, emitting more heat, and contain 25 per cent more energy than other pellets, saving fuel and decreasing CO2 emissions. Coffee to Burn is produced in the Netherlands.

S.Café Coffee Fabric

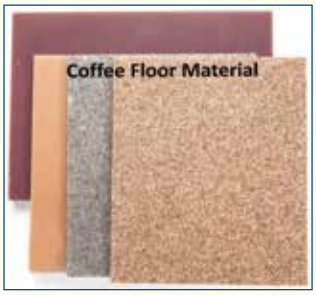
S.Café is made from a combination of used coffee grounds and polyester. In a low-temperature, high-pressure and energy saving process, the coffee grounds are combined with the polyester yarn surface, changing the characteristics of the filament and



adding properties like fast-drying, UV-protection and odour control.

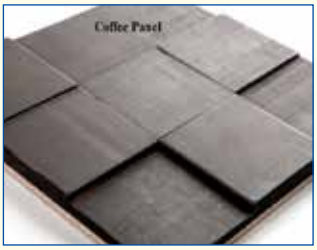
Coffee Floor Material

This seamless floor comes in a matte finish and has a closed and resilient surface. It gives a warm feeling and a unique colour and pattern coming from the coffee grounds. Touch of nature is a floor covering made with a resin based on linseed oil, and can be binded with vegetable granules and chips, such as cork granules, bark chips, wood chips, but also coffee ground and fruit residues like berry seeds or olive leaves, to obtain a range of colours and patterns based on nature. These liquid biobased formulations are based on agricultural sidestreams, curing at room temperature to give resilient seamless floors, panel coatings, tabletops, countertops and furniture surfaces.



Coffee panels

Coffee panels are composite materials produced from coffee grounds and a biopolymer, polyactic acid or polylactide. These composite materials incorporate a percentage of coffee grounds, which may vary between 60% and 70% ,PLA, with and without the addition of any chemicals.



Coffee based material

Coffee Based is a company that focuses on reusing waste materials. Coffee based developed two base materials: a sheet material and granulate. Both are made with coffee grounds mixed with a biopolymer. The sheet material is flexible and still smells like coffee. It has a bit of a leather-look. The material is suitable for vacuum forming. The granulate is suitable for injection moulding.

Decafe

Decafe is a composite material made from heat and pressure-treated coffee grounds. Decafe is a patented material created by Raul Lauri. Raul Lauri has produced a number of objects and product designs with Decafe including a lamp that looks like a coffee cup itself, various bowls and tea light candle holders that enhance the coffee aroma of the material.

Coffee Flour

Seattle based company Coffee Flour is converting this coffee pulp to flour that can be used in everything. The flour does not taste like coffee, but it is suitable as a sugar substitute.

CaffeInk

Dutch start-up CaffeInk developed an environmentally friendly ink as an alternative to black ink made from fossil-based carbon black pigment from coffee grounds.

Coffee sneakers

Nat-2's vegan, unisex sneakers are made from recycled coffee, coffee grounds and coffee plants. The coffee material is applied to a based layer, giving it a smooth and fine feel. The coffee's texture remains visible, and you can smell the coffee. Depending on the shoe style, the material covers up to 50% of the shoe's surface.

Coffee industry even though produces huge quantity of by-products, the research carried out in various parts of the world has proven that these by-products are of great value to replace the plastics effectively and efficiently. It is also proving that the industry not only contributes to sustenance of environment by cultivation

but also proves as eco-friendly and sustainable source of biodegradable by-products as alternate to plastics in the globe.

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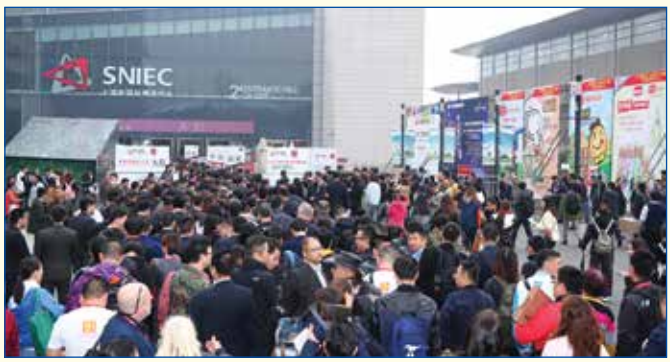
Coffee Board of India Participated in Shanghai Global Food Trade Show 2019, Shanghai, China

Introduction

It's interesting to note that a nation known for tea, has history of origin and tradition of drinking tea is rapidly shifting to coffee culture. It's no secret there's a lot of tea in China. But, coffee is increasingly becoming the caffeine fix of choice for China's rapidly growing urban middle class. Coffee consumption in China has nearly tripled in the past four years, with coffee imports growing 16 percent a year. The average person in mainland China consumes just three cups of coffee a year compared that to 250 cups per person in the UK and 363 cups in the U.S., There's lot of room for the bean business here to grow. In this line to boost Indian coffee exports to china, the Coffee Board of India has participated for the first time in Coffee and Tea Drink Expo-2019 part of FHC-Shanghai Global Food Trade Show with pavilion at prime location. The event was held at famous venue Shanghai New International Expo Centre (SNIEC), Shanghai. Peoples from around 48 countries and regions representing the coffee, tea and food industry participated in the show. FHC-Global coffee and tea drink expo stood out as an extremely important event in China in general and for Shanghai in particular and of course to the whole world of coffee. Apart from the exhibition several programmes like cappuccino championship, cupping sessions, bartender contest and culinary competitions etc. were also organized at the venue.

Promotion of Indian coffee at FHC-Shanghai Global Food Trade Show

Coffee Board of India participated in the FHC-Shanghai Global Food Trade Show 2019, Shanghai, China from November 12 - 14, 2019. The event was held at famous venue Shanghai New International Expo Centre (SNIEC), Shanghai. The venue was occupied by 3000 exhibitors from 48 countries and regions. The exhibition area expanded to 120000 square meters, and the three day exhibition witnessed 118274 visitors. Dr. Srivatsa Krishna, Secretary and CEO, Coffee Board participated in the expo accompanied by S.Soundara Rajan, Assistant Subject Matter Specialist, Pathologist, RCRS, Thandigudi and Hadagali Vishwanatha, Junior Liaison Officer in the delegation. The main objective of the participation was to showcase the Indian Specialty Coffees in the world market. Coffee Board Pavilion in the expo was designed and decorated with wall posters with impressive backdrops depicting typical sustainable coffee cultivation and eco-friendly approach, which represented the uniqueness of the Indian coffee of shade grown, handpicked and sun dried. Vast populations of China are shifting from tea to coffee culture shown interest in attempting business with Indian exporters. China imports around 60% in the form of green beans, 30% in roasted form and 10% in soluble coffee. Nine members from six leading exporters of Indian specialty coffee participated in the event and



View of the venue where expo was held

Opening Ceremony

Russian buyer keenly knowing the Specialty Coffees of India

A buyer having look at the Specialty Coffees of India

put up their premium products in the Coffee Board pavilion. They were Vintage Coffee Pvt Ltd., represented by Balakrishna Tati and Jawahar Conjeevaram, Neelagiri Coffee Works, represented by Abdul Rasheed Vettan., SLN Coffee Ltd, represented by Siddarth Sikaria, Shruthi Sikaria and Chandra Biswas., Badra Estates & India Ltd., represented by Ambat Sukumar, Hindustan Unilever represented by Gupta Ashish, Tata coffee Ltd., represented by Jitendra Manghnani. The prime Indian grades of Arabica, Robusta and Specialty Coffee viz., Monsoon Malabar, Mysore Nuggets Extra Bold, Robusta Kaapi Royale and all other commercial grades alongside GI tagged coffees were displayed in the pavilion. The Coffee Board of India pavilion was visited by retailers, micro roasters and Chinese importers. The Coffee Board of India was given slot to brew and supply the Indian Specialty Coffee at the cupping and brewing pavilion in the expo. Q-graders from different countries tasted the Specialty Coffee during the cupping session and enthralled by the aroma of Monsooned Malabar Coffee. Liquid coffee made out Mysore Nuggets, Bababudangiri Arabica and Monsooned Malabar became crowd puller in the mega event. Buyer seller meet was held at consulate of India where Dr. Srivata Krishna, CEO, Coffee Board of India presented on coffees of India and S.Soundara Rajan presented on uniqueness of coffees of India. Exalted Meeting with largest catering brand "YUM" group China who are looking into coffee business.

Coffee in China

China is one of the emerging markets for coffee consumption. Soluble coffee (instant coffee) accounts for 90% of its consumption. As per International Coffee Organization (ICO), coffee consumption in China is around 1.15 lakh tons. The US Department of Agriculture's 2018 report on the coffee market shows that the Chinese domestic consumption of coffee has almost doubled over the past four years. Starbucks plans to open 3000 new stores in china over the next five years, Canada's Tim Hortons also plans to open more than 1,500 stores, while British chain Costa Coffee plans to roughly triple its number of Chinese stores by 2022. Chinese coffee consumption has been rapidly evolving, with a growing awareness of quality. However, the local coffee culture is still different from what you'll find in countries such as the US. For instance, people rarely grind and brew coffee at home. "Instant coffee still makes up the vast majority of consumption" – something that is common in many traditional tea cultures, including the UK. China imported 120 million kilograms of soluble coffee in 2018/19. This is another significant increase from 41 million kilograms in 2013/14. China is on track to follow Japan's path to becoming one of the largest coffee-consuming nations in the world. The world's second-largest economy offers a compelling growth story because of its fast-expanding consumer base and its increasing purchasing power. The population of China's middle class is on track to double to

Dr. Srivatsa Krishna, Secretary, Coffee Board of India at Cupping Session

Hadagali Vishwanatha, JLO at Cupping Session

600 million by 2022, while disposable income grew 8% a year in the past five years and is projected to grow at a compound annual growth rate of 9.6% from 2019-2020, according to studies by McKinsey and National Bureau of Statistics of China. Notably, many of these middle-class consumers reside in third- and fourth-tier cities, rather than Shanghai or Beijing. They are still big cities, with populations surpassing 4 million people. That means they have a lot of untapped potential, as consumers take some of their lifestyle cues from their peers in China's more-established urban centers. Millennials, too, are having a significant impact on China's coffee consumption. This group of 450 million consumers born after 1980, known to be the most-educated and well-travelled generation in China, accounted for 40% of total coffee sales on Alibaba's e-commerce platforms during 2018, the company reported.

Export of Indian coffee to China

China is the potential market for Indian coffee, the Indian total coffee exports to China have increased from around 307 metric tons during 2014 to 547 metric tons in 2018 however India exported about 632 MT to China during 2017 and registered a compound annual growth rate of 11.5 per cent. Soluble coffee constitutes major chunk in India's total coffee exports.

India's Coffee Exports to China for last five years

Year	Green Coffee (MT)	Instant Coffee (MT)	R&G Coffee (MT)	Total Qty. in MT	Value (Rs. In Lakhs)	Value in (US $ Lakhs)
2014	52.8	254.8	0.0	307.6	583.0	9.51
2015	66.6	354.0	0.0	420.6	636.0	9.84
2016	186.6	299.8	0.0	486.4	674.0	9.99
2017*	360.0	272.0	0.0	632.0	1000.0	15.28
2018*	139.9	406.9	0.033	546.8	867.8	12.8
Average (2014 to 2018)	**161.2**	**317.5**	**0.013**	**478.7**	**752.2**	**11.5**

(Source**:** Market Research & Intelligence Unit, Coffee Board, *Based on the permits issued,)

Prospects for Indian coffee in China

According to Euromonitor International Report, Coffee registered moderate growth in both retail volume and current retail value terms in China during 2018, following the return to positive growth the previous year, further growth in coffee is anticipated to be driven by fresh coffee. Key players invested in expanding product

Q-graders from China at Cupping Session

Cup Tasting

Dr. Srivatsa Krishna, Secretary, Coffee Board of India presenting on Indian Coffee at Buyer Seller Meet

Dr. Srivatsa Krishna, Secretary, Coffee Board of India with 'YUM' China officials

Buyer ended on visitor book

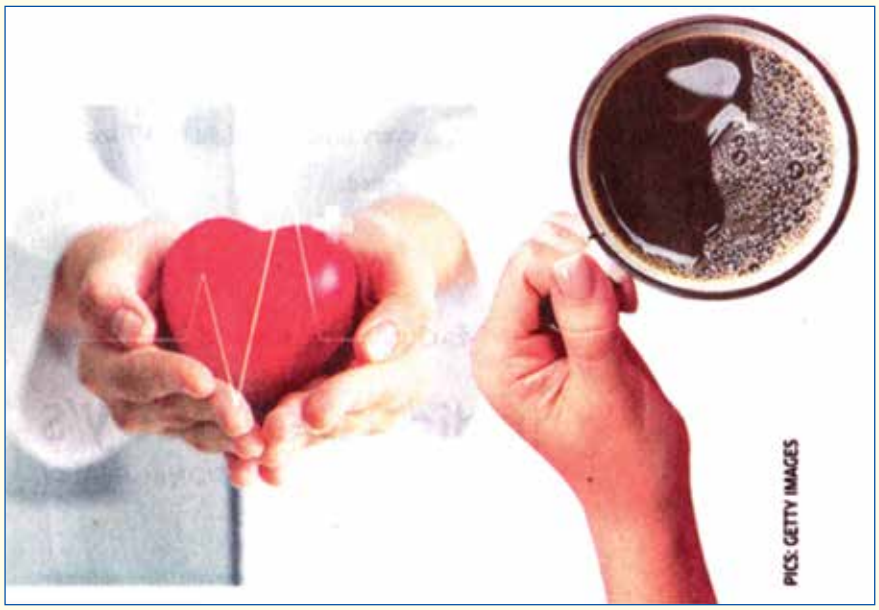
awareness and penetration as coffee culture continued to develop in China. Various products were introduced to traditional channels such as hypermarkets and supermarkets to enable accessibility. Some consumers are expected to switch from instant coffee to more premium options for reasons of quality and flavour. Numerous imported instant coffee brands from South East Asia performed well in the internet retailing channel in 2018-19, such as Old Town White from Malaysia and G7 from Vietnam. As consumers are exposed to more options in instant coffee, curiosity is likely to result in consumption on impulse.

India's coffee exports to China are not substantial but, India is trying to make inroads into China's growing market. India is becoming a major instant coffee producer in the world and has all the potential to increase its instant coffee exports to China – a huge market which is very near to India. India has exported around 400 MT of instant coffee in 2018 as compared to 250 MT in 2014 which is double the fold shows the potential market for instant coffee.

Frappuccino's - a Tea to Coffee trend in China

Until the 1990s coffee was rarely served in China except at luxury hotels aimed at foreigners. When Starbucks opened its first outlet there in 1999 it was far from clear that the country's avid tea-drinkers would take to such a different and usually more costly source of caffeine. Starbucks tried to entice customers unused to coffee's bitter taste by promoting milk- and sugar-heavy concoctions such as Frappuccino's. Now China's coffee market has been drawing global attention as coffee shops with the newest drinks in hand represents a new lifestyle choice for urban Chinese consumers. As their living standards improve, Chinese consumers like to explore new products and experiences—especially from the West.

How Coffee is kind to your heart



Drinking one to four cups coffee daily reduces metabolic syndrome, says a new study

Coffee comes with the potential of reducing the risk of developing a major cardiovascular issue which is known for affecting more than one billion people across the globe, says a recent study.

A report from the Institute for Scientific Information on Coffee (ISIC) highlights the potential role of coffee consumption in reducing the risk of developing MetS (metabolic syndrome), which increases the risk of cardiovascular problems, including coronary heart disease and stroke. The report, titled 'Coffee and Metabolic Syndrome: A review of the latest research', summarises the research discussed at a satellite symposium hosted by ISIC at the 13th European Nutrition Conference organised by the Federation of European Nutrition Societies (FENS) in Dublin, Ireland.

Moderate Consumption is key

Associate Professor Estefania Toledo's research into the SUN (Seguimiento University of Navarra) cohort involved 22,000 people and specifically considered caffeinated and decaffeinated coffee. The study concluded that moderate coffee consumption (one to four cups per day) was associated with reduced risk of MetS, whilst higher intakes were not. This was reported for both regular and decaffeinated coffee.

The research suggests that polyphenols contained in coffee may be involved in the inverse association, specifically phenolic acids and flavonoids. Toledo also reviewed research that suggests that moderate coffee consumption is associated with a reduction of C VD, cancer, all-cause mortality and type 2 diabetes.

Obesity link unclear

The study, presented at FAPESP Week France, highlighted that drinking coffee daily is associated

with a reduced risk of MetS in observational studies. Specific conditions of MetS, namely type 2 diabetes and hypertension, are also inversely associated with coffee consumption. Associations with obesity are less clear.

The inverse association between coffee consumption and metabolic syndrome was shown in both men and women. Meta-analyses have suggested that moderate consumption of both caffeinated and decaffeinated coffee may be associated with a reduced risk of metabolic syndrome.

Source : Economic Times

Nothing like a cup of coffee

With the recently-opened outlet at IIT Madras, India Coffee House hopes to expand its business across the country

India Coffee House, which traces its roots back to 1936, has a spunky new outlet at IIT Madras. Launched earlier this week, it is part of the Coffee Board of India's efforts to promote coffee consumption in the country and to tap into nostalgia.

"The challenge is to compete with other players. We sell the same coffee, but have not priced it as luxuriously as them," says Dr. Srivatsa Krishna, IAS, Secretary and CEO, Coffee Board of India. The idea, Srivatsa says, is to provide a space where people can have coffee and conversations at an affordable price, costing not more than ₹20. "Not everybody can afford a fancy cafe in today's scenario. The shop at IIT Madras is manned by us. So far, we have signed a deal with IIT Delhi, University of Hyderabad, and IIM Bangalore, which will come up in six months' time," he adds.

A coffee is only as good as its beans. So, from where does India Coffee House source its beans? "We source our coffee beans from estates at Coorg, Chikmagalur, and Tamil Nadu," he says, adding that India Coffee House serves 'pure' filter coffee without chicory.

The Coffee Board of India has also started its first blockchain coffee market, where customers can walk in and buy coffee powder at the various outlets. "We are planning to open over 200 outlets throughout the country, in the next one year," he adds in conclusion.

Source: The Hindu

DECEMBER

South -West Monsoon Areas

1. Harvesting and processing of Arabica to be continued
2. Commencement of Robusta harvesting. Cover the ground with mats to avoid gleanings while harvesting.
3. Scuffling in new clearings.
4. Cleaning of paths around the estates to prevent fire accidents.
5. Liming for correction of soil pH, wherever necessary.
6. **Nursery**-collection and drying of jungle soil and FYM

North-East Monsoon Areas

1. Spraying with 0.5% *Bordeaux* mixture to be completed. Rest as above

JANUARY

South-West Monsoon Areas

1. Harvesting and processing of Arabica coffee.
2. Continuation of Robusta harvesting and processing. Cover the ground with mats to avoid gleanings while harvesting Robusta.
3. Collection of Arabica gleanings and disinfestations/disposal of berries infested with berry borer.
4. Collection of left over fruits and off-season berries in berry borer infested blocks.
5. Control measures against root mealy bugs, if necessary.
6. **Nursery**: Preparation of germination beds and sowing of seeds. Before sowing, seeds may be treated with *Vitavax* 75 WP at 0.66g/kg of seeds or Bavistin 50 WP at 1g/kg seeds to protect t against collar rot.
7. Cleaning of paths around the estates to prevent fire accidents.
8. In young clearings, watering young seedlings when necessary.

North-East Monsoon Areas

1. As above except item 5.

FEBRUARY

South-West Monsoon Areas

1. Continuation of Robusta harvesting and processing. Cover the ground with mats to avoid gleanings while harvesting Robusta.
2. Collection of left over fruits and off-season berries in berry borer infested areas.
3. Collection of Arabica gleanings and disinfections/disposal of berries infested with berry borer.
4. Pruning of Arabica. Delay pruning if hot, dry weather conditions prevail.
5. Pre-blossom manuring.
6. **Leaf Rust:** Pre-blossom spraying with 0.5% *Bordeaux* mixture against leaf rust and anthracnose (twig die-back)
7. Control measures against root mealy bugs, if necessary.
8. Collection and destruction of pupae of hairy caterpillars.
9. Cleaning of paths around the estates to prevent fire accidents.
10. **Nursery**: Preparation of secondary beds, filling & arranging of poly bags and transplanting.
11. Preparation of land for new planting, removal of under-growth and selective felling of trees and their disposal.
12. Blossom irrigation during the second fortnight for Robusta.
13. In young clearings, watering young seedlings when necessary.

North-East Monsoon Areas:

1. As above.

NOVEMBER 2019

In this column, the extracted information from November 2019 Coffee Market Reports of ICO on global production, global prices, world consumption and global exports as well as Indian domestic prices and exports are covered.

Global Production and Consumption

World Supply/Demand Balance (in thousands 60-kg bags)

Coffee Year (Oct. to Sep.)	2015	2016	2017	2018	2019*	% change 2018/19
PRODUCTION	**154996**	**158625**	**160376**	**169001**	**167399**	**-0.9**
Arabicas	91181	100776	96698	98328	95680	-2.7
Robustas	63815	57849	63678	70673	71718	1.5
Africa	15756	16729	17376	18304	18201	-0.6
Asia & Oceania	49484	45652	46608	48662	49577	1.9
Mexico & Central America	17106	20322	21725	21345	21544	0.9
South America	72651	75921	74667	80691	78078	-3.2
CONSUMPTION	**155491**	**158642**	**162555**	**165345**	**167901**	**1.5**
Exporting countries	47548	48488	49793	50510	51018	1.0
Importing countries (Coffee Years)	107943	110154	112763	114835	116882	1.8
Africa	10951	11130	11527	11724	11939	1.8
Asia & Oceania	32863	34573	35697	36742	37838	3.0
Mexico & Central America	5295	5226	5321	5401	5474	1.4
Europe	52147	52045	53148	53896	54542	1.2
North America	28934	29559	29941	30454	30965	1.7
South America	25299	26111	26922	27128	27141	0.1
BALANCE	**-495**	**-18**	**-2179**	**3657**	**-502**	

*Preliminary estimates

The ICO maintains its preliminary forecast of a small global deficit of about 502,000 bags in coffee year 2019/20. Despite a slowdown in growth, consumption is predicted to overtake production during the course of the year. Most of the growth in consumption, in both absolute and relative terms, is expected to come from Asia & Oceania. On the production side, Brazil's smaller off-year Arabica crop and adverse weather in parts of Central America and Asia could continue to affect prices in the coming weeks. However, the impact of these factors may be muted due to the recent weakness of the Brazilian Real as well as the upcoming on-year crop in Brazil.

Prices

Domestic Market Prices: ICTA (Bengaluru) Weekly Auction Prices (Rs./kg)

Month/	Nov'19	Nov'18	Nov'19	Nov'18	Nov'19	Nov'18	Nov'19	Nov'18	Nov'19	Nov'18
Week	I		II		III		IV		Average	
Plant . 'A'	236.50	---	238.50	215.00	236.50	211.00	237.50	215.00	**237.25**	**213.67**
Arb.chy. 'AB'	134.00	---	---	159.00	---	170.00	---	---	**134.00**	**164.50**
Rob.Pmt. 'AB'	---	---	---	---	---	---	---	---	**---**	**---**
Rob.Chy. 'AB'	137.50	---	138.00	149.00	139.00	150.00	136.50	---	**137.75**	**149.50**

International Spot Prices – ICO Daily Group Indicator Prices of Arabica (Other Milds) and Robustas

The ICO composite indicator rallied in November 2019, reaching a 12-month high, even as the Brazilian Real slumped to a record low against the US Dollar. November 2019 marked the first time in the last 12 months when the ICO Composite Indicator consistently stayed over 100 US cents/lb. The daily price of the ICO composite rose from 102.74 US cents/lb at the beginning of November to a high of 111.86 on 25 November 2019, before closing the month at 111.77 US cents/lb. While the daily price has been on an upward trend since mid-October 2019, the November average of 107.23 US cents/lb was 10.1% higher than last month.

Prices for all group indicators rose in November 2019. Brazilian Naturals saw the largest increase, of 12.1%, to 109.94 US cents/lb, reflecting in part the biennial decline in the production of Brazilian Arabica as well as the weakness of the Brazilian currency. Other Milds rose 11% to 140.98 US cents/lb, while Colombian Milds rose 10.6% to 146.12 US cents/lb. The differential between Colombian Milds and Other Milds continued its ascent in November 2019, rising 0.8% to 5.14 US cents/lb. Prices for Robustas increased 6.8% month-on-month to 73.28 US cents/lb.

Arbitrage between Arabica and Robusta coffees, as measured on the New York and London futures markets, increased sharply to 50.31 US cents/lb, its highest level since January 2017. The New York futures market rose 10.6%, to an average of 113.31 US cents/lb in November 2019, as certified stocks fell to their lowest level since June 2018, while the London futures market climbed 8% to 63 US cents/lb.

Exports:

Global exports in October 2019 totalled 8.91 million bags, their lowest monthly level since September 2017. This represents a drop of 13.4% compared to the same period in the previous year, and of 2.4% compared to October 2017. Shipments of Robustas fell 21.6% to 2.82 million bags and Arabicas fell 9% to 6.08 million bags. Other Mild Arabicas saw the largest decline, falling 23.2% to 1.33 million bags, while Brazilian Naturals fell 9.5% to 3.44 million bags.

Colombian Milds, conversely, saw an increase of 13.5% to 1.31 million bags compared to October 2018. The depreciation of the Colombian Peso against the US Dollar for much of 2019 could be a contributing factor for higher shipments of Colombian Milds.

Exports from South America amounted to 5.29 million bags in October 2019, led by 3.42 million bags from Brazil. Brazil's exports—which accounted for 38.4% of the total coffee exports in October 2019— fell 12.9% compared to October 2018, owing to its smaller 2019/20 off-year crop. Despite the monthly fall in shipments compared to 2018, Brazil's export total to date for its 2019/20 crop year is at a record level of 23.62 million bags. This is 7.2% greater than its next highest level of 22.04 million bags, reached in April–October 2014.

At 1.21 million bags, Colombian exports grew 13.9% in October 2019 compared to the same month in 2018. Green coffee exports rose 15.5% as the main harvest began, while the small but steadily growing volumes of roasted coffee exports grew 41.4% to 16,934 bags. Exports of soluble coffee fell 9.2% compared to October 2018. However, the year-to-date total of 672,791 bags was the second highest total of soluble exports for Colombia for the period. The United States continues to be the major destination for Colombian coffee, accounting for 44.8% of its October 2019 exports. It was followed by Germany, which accounted for 9.2% of the total coffee exports in the month.

Exports from Asia & Oceania fell by 23.5% to 2.26 million bags in October 2019. The decline chiefly reflects smaller shipments from Viet Nam, whose Ministry of Agriculture and Rural Development estimated exports of 1.45 million bags for the month. The sharp fall in exports was accompanied by reports of farmers delaying sales of their beans due to low domestic prices for coffee. A decline in shipments was also observed in India, where production has been affected by erratic weather patterns, heavy rains and flooding for the past two years. Local reports have additionally attributed lower harvests to an increased incidence of the white stem borer earlier in the year. Exports from India were estimated at 350,000 bags in October 2019, 2.5% below the same period a year earlier and 22% below the same period in 2017. Meanwhile, exports from Indonesia—which had fallen in coffee year 2018/19 amid tightening supplies from Sumatra—more than doubled to 342,464 bags in October 2019.

Uganda's exports of 378,238 bags led shipments from African countries, followed by Ethiopia. The total volume of exports from the region was 958,055 bags. In comparison with the same month in the previous year, Arabica exports from Uganda fell 30% to 75,501 bags, while Robusta exports rose by 24.6% to 302,737 bags. Exports of Arabica from Uganda have declined for most of 2019, dropping 16.6% in the first ten months compared to the same period in 2018. However, the increase in Robusta exports have more than offset the fall, and as a result total exports from the country increased 7.4% for the same period. The Uganda Coffee Development Authority attributed this increase to good main and secondary harvests on account of favourable weather in 2019.

With an export volume of 403,635 bags, Mexico & Central America started the coffee year with a 17.3% decline in shipments compared to October 2018. The region's total exports were dragged down by falling shipments from Costa Rica, Honduras and Mexico. Honduras—which is Central America's largest Arabica producer, and the world's fourth largest—saw its shipments fall by 25.8% to 74,980 bags. Besides falling prices, harvests in the country are reported to have been affected by an increased incidence of pests and diseases, as well as an ongoing drought that led to the declaration of a national emergency in September. Elsewhere in the region, Costa

Rica's shipments dropped by 66.2%, to 11,853 bags, which was its lowest monthly export volume since August 1980. The fall is expected to continue into November 2019 as the country reels from a recent outbreak of coffee leaf rust.

Indian coffee exports (01.01.2019 to 30.11.2019) in MT

Sl. No.	Exports	Provisional exports		Provisional re-exports		Total provisional exports	
		Indian coffee	corresponding period last year	Provisional re-exports	corresponding period last year	Total provisional exports	corresponding period last year
		1	2	3	4	(1+3)	(2+4)
1	Ar. Pmt.	35574	37924	7	0	35581	37924
2	Ar.Chy.	9715	12364	0	0	9715	12364
3	Rob.Pmt.	32682	24511	0	0	32682	24511
4	Rob.chy.	144279	146169	0	0	144279	146169
5	Roasted seeds	74	97	0	0	74	97
6	R&G	176	226	1	0	177	227
7	Instant	25776	26517	79625	80209	105401	106726
	Total	**248275**	**247809**	**79632**	**80209**	**327908**	**328018**

Compiled by: *Dr. D.R. Babu Reddy, Dy. Director (Market Research), Coffee Board, Bengaluru*

Chocolate Coffee

Chocolate Coffee is an easy to make beverage recipe. Try this coffee recipe after a long and tiring day.

Ingredients

- 200 gm dark chocolate
- 4 cup milk
- 1/2 cup whipped cream
- 1 teaspoon chocolate chips
- 4 teaspoon coffee powder
- 4 teaspoon sugar
- 4 cubes Ice cubes

How to make Chocolate Coffee

- **Step 1**

Break chocolate into small pieces. Put them in a bowl.

- **Step 2**

Add one cup of milk, coffee powder and sugar.

- **Step 3**

Keep the bowl in microwave oven on high (100%) for one minute.

- **Step 4**

Take the bowl out and mix well. Put the mixture in a blender and blend.

- **Step 5**

Add remaining milk and some ice cubes and blend again.

- **Step 6**

Pour the mixture into glasses. Put some whipped cream and chocolate chips on top.

- **Step 7**

Serve immediately.

Courtesy : www.awesomecuisine.com

नवंबर 2019

इस,कॉलम में भारतीय स्वदेशी मूल्य एवं निर्यात के साथ-साथ, वैश्विक उत्पादन, वैश्विक मूल्य, वैश्विक उपभोग एवं वैश्विक निर्यात पर आईसीओ कॉफ़ी बाज़ार रिपोर्ट नवंबर-2019 की सार-सूचना सम्मिलित हैं।

वैश्विक उत्पादन एवं उपभोग

वैश्विक आपूर्ति/ माँग शेष (हज़ारों में 60 कि.ग्रा. के बैग्स)

फसल वर्ष (अक्तूबर से सितंबर तक)	2015	2016	2017	2018	2019*	2018/19 में परिवर्तन की %
उत्पादन	**154996**	**158625**	**160376**	**169001**	**167399**	**-0.9**
अरेबिका	91181	100776	96698	98328	95680	-2.7
रोबस्टा	63815	57849	63678	70673	71718	1.5
अफ्रीका	15756	16729	17376	18304	18201	-0.6
एशिया एवं ओशियानिया	49484	45652	46608	48662	49577	1.9
मेक्सिको एवं मध्य अमेरिका	17106	20322	21725	21345	21544	0.9
दक्षिण अमेरिका	72651	75921	74667	80691	78078	-3.2
उपभोग	**155491**	**158642**	**162555**	**165345**	**167901**	**1.5**
निर्यातित देश	47548	48488	49793	50510	51018	1.0
आयातक देश (कॉफ़ी वर्ष)	107943	110154	112763	114835	116882	1.8
अफ्रीका	10951	11130	11527	11724	11939	1.8
एशिया एवं ओशियानिया	32863	34573	35697	36742	37838	3.0
मेक्सिको एवं मध्य अमेरिका	5295	5226	5321	5401	5474	1.4
यूरोप	52147	52045	53148	53896	54542	1.2
उत्तर अमेरिका	28934	29559	29941	30454	30965	1.7
दक्षिण अमेरिका	25299	26111	26922	27128	27141	0.1
शेष	**-495**	**-18**	**-2179**	**3657**	**-502**	

*प्रारंभिक अनुमान

आई सी ओ ने कॉफ़ी वर्ष 2019-20 में लगभग 502,000 बैग्स की अल्प वैश्विक घाटे के साथ अपना प्रारंभिक पूर्वानुमान बनाए रखा है। प्रवर्धन में कमी के बावजूद, वर्ष के दौरान उत्पादन से अधिक उपभोग का अनुमान लगाया गया है। संपूर्ण एवं सापेक्ष दोनों स्थितियों में, एशिया एवं ओशियानिया के उपभोग में अधिकांश वृद्धि अनुमानित है। उत्पादन के संबंध में, ब्राजील में अरेबिका की अल्प अवधि के असंतुलित फसल प्रापण से तथा मध्य अमेरिका एवं एशिया के कुछ भागों में विपरीत मौसम के कारण आगामी सप्ताहों के मूल्य प्रभावित हो सकते हैं। ब्राज़ीलियन रियाल के मूल्यह्रास के साथ-साथ वहाँ के प्रवर्धित फ़सल वर्ष के कारण यह प्रभाव कम होने की संभावना है।

मूल्य

स्वदेशी बाज़ार मूल्य : आईसीटीए (बेंगलूरु) के साप्ताहिक नीलामी मूल्य (₹/कि.ग्रा.)

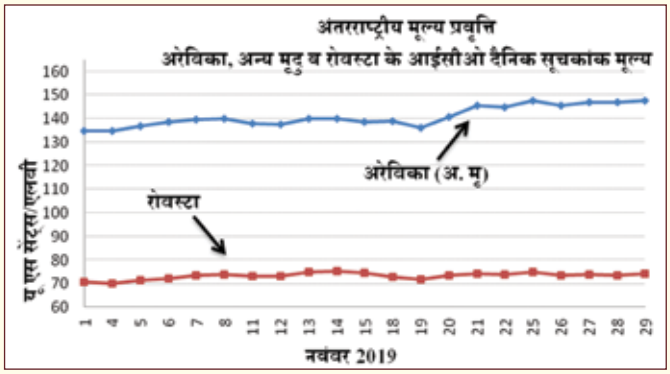
महीना /	नवंबर 19	नवंबर 18	नवंबर 19	नवंबर 18	नवंबर19	नवंबर 18	नवंबर 19	नवंबर18	नवंबर19	नवंबर 18
सप्ताह	I		II		III		IV		औसतन	
प्लांटे 'ए'	236.50	---	238.50	215.00	236.50	211.00	237.50	215.00	**237.25**	**213.67**
अरे.चेरी 'ए बी'	134.00	---	---	159.00	---	170.00	---	---	**134.00**	**164.50**
रोब.पार्च. 'ए बी'	---	---	---	---	---	---	---	---	---	---
रोब.चेरी 'ए बी'	137.50	---	138.00	149.00	139.00	150.00	136.50	---	**137.75**	**149.50**

अंतर्राष्ट्रीय तत्स्थान मूल्य - अरेबिका (अन्य मृदु) तथा रोबस्टा के आई सी ओ समूह सूचकांक मूल्य

नवंबर 2019 में, अमेरिकी डॉलर की तुलना में ब्राजील रियाल के मूल्य के पतन के बावजूद भी, आईसीओ समष्टिक सूचकांक विगत 12 महीनों के बाद उच्च स्तर पर पहुँच गया है। विगत 12 महीनों के बाद, सर्वप्रथम नवंबर 2019 में, आईसीओ समष्टिक सूचकांक उल्लेखनीय रूप से निरंतर 100 यूएस सेंट्स/पाउंड से अधिक मूल्य के साथ स्थिर रहा है। नवंबर के प्रारंभ में, आईसीओ समष्टिक दैनिक मूल्य 102.74 यूएस सेंट्स/पाउंड से बढ़कर 25 नवंबर 2019 तक 111.86 यूएस सेंट्स/पाउंड के उच्च स्तर पर पहुँच गया तथा महीने के अंत में 111.77 यूएस सेंट्स/पाउंड तक पहुँच गया, था जबकि अक्तूबर 2019 के मध्य से दैनिक मूल्य में वृद्धि होने लगी, नवंबर का औसत 107.23 यूएस सेंट्स/पाउंड रहा है, जो विगत माह की तुलना में 10.1% अधिक है।

नवंबर 2019 में, सभी समूह सूचकांकों के मूल्य में वृद्धि हई है। ब्राज़ीलियाई नैचुरल्स का मूल्य सबसे अधिक अर्थात 12.1% की वृद्धि के साथ 109.94 यूएस सेंट्स/पाउंड पर पहुँच गया है, जो ब्राज़ीलियाई मुद्रा के मूल्यह्रास के साथ-साथ ब्राज़ीलियन अरेबिका के उत्पादन की आंशिक द्विवार्षिक कमी के बाद प्रदर्शित हुआ है। अन्य मृदु का मूल्य 11% की वृद्धि के साथ 140.98 यूएस सेंट्स/पाउंड तक पहुँच गया है, जबकि कोलंबियाई मृदु का मूल्य 10.6% बढ़कर 146.12 यूएस सेंट्स/पाउंड हो गया है। नवंबर 2019 में, कोलंबियाई मृदु एवं अन्य मृदु के बीच का अंतर निरंतर बढ़ता रहा है, जो 0.8% वृद्धि के साथ 5.14 यूएस सेंट्स/पाउंड तक बढ़ गया है। प्रत्येक माह के दौरान रोबस्टा का मूल्य बढ़कर 6.8% वृद्धि के साथ 73.28 यूएस सेंट्स/पाउंड तक पहुँच गया है।

न्यूयॉर्क तथा लंदन के फ्यूचर्स बाज़ारों के मापन के अनुसार, अरेबिका एवं रोबस्टा कॉफ़ी के बीच का अंतरपणन, जनवरी 2017 के बाद अपने उच्चतम स्तर 50.31 यूएस सेंट्स/पाउंड तक पहुँच गया है। जैसा कि जून 2018 से प्रमाणित स्टॉक अपने निम्नतम स्तर तक पहुँचने के बाद, नवंबर 2019 में, न्यूयॉर्क फ्यूचर्स बाज़ार का मूल्य 10.6% वृद्धि के साथ 113.31 यूएस सेंट्स/पाउंड के औसत पर पहुँच गया है, जबकि लंदन फ्यूचर्स बाज़ार का मूल्य 8% वृद्धि के साथ 63 यूएस सेंट्स/पाउंड पर पहुँच गया है।



निर्यात :

अक्तूबर 2019 में, कुल वैश्विक निर्यात 8.91 मिलियन बैग्स था, जो सितंबर 2017 के बाद का निम्नतम मासिक स्तर था। यह विगत वर्ष की संगत अवधि की तुलना में 13.4% तथा अक्तूबर 2017 की तुलना में 2.4% की कमी दर्शाता है। रोबस्टा के नौभरण 2.82 मिलियन बैग्स के साथ 21.6% की कमी प्रदर्शित की है तथा अरेबिका में यह 6.08 मिलियन बैग्स के साथ 9% कम हुई। अन्य मृदु अरेबिका में सबसे बड़ा पतन पाया गया है, जो 23.2% कम होते हुए 1.33 मिलियन बैग्स तक पहुँच गया, जबकि ब्राजीलियान नैचुरल्स में 9.5% कमी के साथ 3.44 मिलियन बैग्स हो गया। इसके विपरीत, कोलंबियाई मृदु में, यह अक्तूबर 2018 की तुलना में 13.5% वृद्धि के साथ 1.31 मिलियन बैग्स तक पहुँच गया है। वर्ष 2019 में अमेरिकी डॉलर की तुलना में कोलंबियन पीसो के मूल्यह्रास ने कोलंबियन मृदु के उच्च नौभरण के लिए योगदान का कारण हो सकता है।

अक्तूबर 2019 में दक्षिण अमेरिका से निर्यात 5.29 मिलियन बैग्स था, जिसमें 3.42 मिलियन बैग्स ब्राजील से था। ब्राजील 2019-20 अल्प फसल वर्ष के कारण, अक्तूबर 2019 में कॉफ़ी का कुल निर्यात 38.4% था, जो अक्तूबर 2018 की तुलना में 12.9% कम था। 2018 की तुलना में, यहाँ के नौभरण में मासिक कमी के बावजूद, 2019-20 के फसल वर्ष के दौरान, ब्राज़ील का कुल निर्यात 23.62 मिलियन बैग्स रिकॉर्ड किया है। यह अप्रैल-अक्तूबर 2014 के 22.04 मिलियन बैग्स के कीर्तिमान के बाद का उच्चतम स्तर रहा है, जिससे 7.2% अधिक है।

अक्तूबर 2019 में कोलंबिया के निर्यात में 1.21 मिलियन बैग्स के साथ 13.9% की वृद्धि हुई, जो वर्ष 2018 के समान था। जैसे ही फसल कटाई का समय शुरु हुआ, तो हरी कॉफ़ी का निर्यात 15.5% तक बढ़ा, जबकि छोटी रोस्टड़ कॉफ़ी का निर्यात निरंतर बढ़ते हुए 41.4% वृद्धि के साथ 16,934 बैग्स हो गया। अक्तूबर 2018 की तुलना में घुलनशील कॉफ़ी का निर्यात 9.2% कम हो गया। तथापि, संबंधित अवधि के दौरान कोलंबिया ने अद्यतन कुल 672,791 बैग्स

घुलनशील कॉफ़ी के निर्यात के साथ सर्वोत्तम निर्यातकर्ताओं के बीच द्वितीय स्थान प्राप्त किया। कोलंबियाई कॉफ़ी का प्रमुख गंतव्य-स्थान संयुक्त राज्य अमेरिका है, जहाँ पर अक्तूबर 2019 में 44.8% निर्यात हुआ था। इसके बाद जर्मनी का स्थान है, जहाँ पर माह के दौरान कुल कॉफ़ी का 9.2% निर्यात हुआ था।

अक्तूबर 2019 में एशिया तथा ओशियानिया से निर्यात 23.5% कम होते हुए 2.26 मिलियन बैग्स हो गया। इस कमी का मुख्य कारण वियतनाम से नौभरण में हुई कमी थी, जहाँ के कृषि एवं ग्रामीण विकास मंत्रालय ने माह के दौरान 1.45 मिलियन बैग्स के निर्यात का अनुमान लगाया था। कॉफ़ी के स्वदेशी मूल्य में आई कमी के कारण किसानों के द्वारा अपनी फलियों के विक्रय में हुई देरी से निर्यात अत्यधिक कम हो गया। भारत का नौभरण भी कम हुआ, जहाँ विगत दो वर्षों से अनियमित मौसम की स्थिति, भारी वर्षा एवं बाढ़ के कारण उत्पादन प्रभावित हुए। स्थानीय रिपोर्टों के अनुसार, वर्ष के प्रारंभ में हुए सफेद तना छेदक के प्रवर्धित आपतन से हुए फसल की कमी ही इसका मुख्य कारण बना है। अक्तूबर 2019 में भारत से 350,000 बैग्स निर्यात का अनुमान लगाया गया, जो विगत वर्ष की समान अवधि में 2.5% से भी कम तथा 2017 के समान अवधि के दौरान 22% से भी कम था। इस बीच, कॉफ़ी वर्ष 2018-19 में इंडोनेशिया से निर्यात कम हुआ था, लेकिन उस वर्ष के बीच सुमात्रा से आपूर्ति होने के कारण अक्तूबर 2019 में 342,464 बैग्स से दोगुना से भी अधिक परिमाण में निर्यात हुआ।

अफ्रीकी देशों से निर्यात के अधीन, युगांडा के 378,238 बैग्स का निर्यात किया गया, जिसके बाद इथियोपिया का स्थान है। इस क्षेत्र से निर्यात का कुल परिमाण 958,055 बैग्स रहा है। विगत वर्ष की समान अवधि की तुलना में, युगांडा से अरेबिका का निर्यात 30% कम होते हुए 75,501 बैग्स हो गया, जबकि रोबस्टा का निर्यात 24.6% वृद्धि के साथ 302,737 बैग्स हो गया। 2018 में समान अवधि की तुलना में प्रथम दस महीनों के दौरान 16.6% की कमी के साथ 2019 में युगांडा से अरबिका के निर्यात में कमी आई है। हालाँकि, रोबस्टा के निर्यात में कमी से भी अधिक वृद्धि हुई है, इसके परिणामस्वरूप समाना अवधि के दौरान, देश से कुल निर्यात में 7.4% वृद्धि हुई है। युगांडा कॉफ़ी विकास प्राधिकरण ने बताया है कि अनुकूल मौसम के कारण प्राप्त उत्तम व मध्यम फसल ही 2019 में हुई इस वृद्धि का कारण है।

अक्तूबर 2018 की तुलना में मेक्सिको तथा मध्य अमेरिका ने नौभरण में 17.3% की कमी के साथ 403,635 बैग्स के निर्यात के परिमाण से कॉफ़ी वर्ष का प्रारंभ किया है। कोस्टारिका, होंडुरास एवं मैक्सिको से नौभरण में हुई कमी के कारण इस क्षेत्र का कुल निर्यात भी निम्न स्तर पर रहा है। मध्य अमेरिका के सबसे बड़ा तथा विश्व के चौथे सबसे बड़ा अरेबिका उत्पादक देश होंडुरास का नौभरण 25.8% कम होते हुए 74,980 बैग्स तक पहुँच गया है। घटते हुए मूल्यों के अलावा, देश में नाशिकीटों तथा रोगों के प्रवर्धित आक्रमण से फसल प्रभावित हुई हैं, इसक साथ ही सूखे की वजह से सितंबर में यहाँ राष्ट्रीय आपातकाल की घोषणा की गई थी। इस क्षेत्र के कोस्टारिका के नौभरण में इससे भी कहीं अधिक 66.2% की कमी आई, जो 11,853 बैग्स रहा है, जो अगस्त 1980 के बाद, इस क्षेत्र का निम्नतम मासिक निर्यात था। नवंबर 2019 तक कमी की यह प्रवृत्ति बने रहने का अनुमान किया गया है, क्योंकि हाल ही में यह देश, कॉफ़ी पत्ती किट्ट के प्रकोप से प्रभावित हुआ है।

भारतीय कॉफ़ी निर्यात (01.01.2019 से 30.11.2019 तक) मे.ट. में

क्र.सं.	निर्यात	अनंतिम निर्यात		अनंतिम पुन: निर्यात		कुल अनंतिम निर्यात	
		भारतीय कॉ. फी	विगत वर्ष की संगत अवधि	अनंतिम पुन:निर्यात	विगत वर्ष की संगत अवधि	कुल अनंतिम निर्यात	विगत वर्ष की संगत अवधि
		1	2	3	4	(1+3)	(2+4)
1	प्लांटेशन 'ए'	35574	37924	7	0	35581	37924
2	अरेबिका चेरी	9715	12364	0	0	9715	12364
3	रोबस्टा पार्चमेंट	32682	24511	0	0	32682	24511
4	रोबस्टा चेरी	144279	146169	0	0	144279	146169
5	भुने बीज	74	97	0	0	74	97
6	भुने व पिसे	176	226	1	0	177	227
7	इंस्टेंट	25776	26517	79625	80209	105401	106726
कुल		**248275**	**247809**	**79632**	**80209**	**327908**	**328018**

संकलन : डॉ. डी. आर. बाबु रेड्डी, उप निदेशक (बाज़ार अनुसंधान), कॉफ़ी बोर्ड, बेंगलूरु

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