

# Aahaar Kranti

UTTAM AAHAAR, UTTAM VICHAAR



## THE HEALTH FOODS OF INDIA

Decoding  
*Dadima ke nuskhe*



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## Editorial Board

Nakul Parashar  
Nimish Kapoor  
Sumita Mukherjee

## Design

PealiDezine

## Address for Correspondence

Vigyan Prasar, A-50, Institutional Area,  
Sector-62, Noida-201 309, U.P., India  
Tel: +91-120-2404430, 35

## E-MAIL

aahaarkranti@vigyanprasar.gov.in

## WEBSITE

www.vigyanprasar.gov.in

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## EDITORIAL

# Six Fundamentals of Aahaar Kranti

Nakul Parashar

**A**aahaar Kranti, a movement that has been started in the country to create awareness in the masses about our diet, is aimed at creating awareness amongst all about the importance, urgency, and necessity of correct diet and its benefits. Based on the success of two previous food-related revolutions, the green revolution and the white revolution, this one is aimed at diet holistically. The success of these two revolutions was creating self-reliance for production of food grain and milk. These national efforts saved millions of lives at that point in time. Quantitatively, the wheat production grew by 2.5 times during 1967–1972. Similarly, much bigger growth in the production of milk was recorded during 1980–1989. Inspired by these two revolutions, Aahaar Kranti was conceived on the basis of six guiding principles.

- **Ayushman**, which focuses on increasing life expectancy, curbing malnutrition and emphasizing on related metrics.
- **Vidwan** indicates that diet has a major role to play in improving cognitive and academic performance.
- **Ayurvedic** lays impetus on return to the traditional knowledge on nutrition with Ayurved.
- **Krishi Pradhan** provides the revolution the required attention to its agricultural aspect, means to obtain better yield per acre with value-added horticulture.
- **Samruddh** means growth or to prosper. For a country to prosper, associated business opportunities are very important. This point would target delving deep into domestic and export opportunities for the food processing industry.
- **Vishwa Guru** is to become world leader by becoming the agricultural and developmental role model for food production and its distribution for the developing world.

On April 13 this year when Aahaar Kranti was launched, the team kept the geographical vastness and its diversity in sight while planning its outreach. Communication strategies were planned accordingly for the print, electronic, social, and digital media. Short film promos were developed and telecast through various channels available including IndiaScience, the nation's Science OTT Channel, and other social media sites like Facebook, YouTube, and Instagram. India Science Wire, the nation's news feature service that provides ready-to-use features and stories about various S&T content, have been regularly carrying out articles about Aahaar Kranti. Meanwhile, efforts are on to reach out to the bigger portion of the population through radio, where phone-in and other formats like podcasts are being tried out. Several diet charts have been prepared and sent to schools in remote areas of the country for their students. Expecting that we land on the other side of the pandemic in near future, Aahaar Kranti would need *Aahaar Mitr*, volunteers on the ground to interact with the public. Outreach in remote areas would require content duly packaged in formats and languages adaptable to the locals. Target in the first phase would be to reach all the 718 districts of the country.

Indeed, a lot to achieve in times to come, especially when eat-right has gained more relevance than ever before.

COVID times have made it important for one and all to be very careful about the selection of diet and nutrition.

Please stay safe, happy and healthy. ■

Email: nakul.parashar@vigyanprasar.gov.in

## CONTENTS

03

The Health Foods of India

07

Piyal Fruit: A Storehouse of  
Phytomedicines

10

New Variety will Increase  
Soybean Production

12

Arum (Arbi): Treasure of Nutrients

14

Ayurveda Manthan:  
The Science of Healing

16

Training Teachers:  
Education Module 1



# The Health Foods of India

Ajai Chawla

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Until less than a century ago, if a child fell ill, it was a norm among most Indian parents to fall back on their archive of home remedies or in the common parlance – ‘*Dadima ke nuskhe*’. Children were administered such remedies, made to eat specific kind of food and, viola, more often than not, these worked wonders! Coming to think of it such remedies or food culture was ingrained in us as a wisdom that was passed on from one generation to another. However, as the families became nuclear, and our cultures got increasingly influenced by a different world, such wisdom was lost in the wilderness.

Now, the populace afflicted by lifestyle and degenerative diseases primarily due to eating habits, is yearning to find an alternative. A term ‘superfood’ was coined, implying any food that was loaded with nutrients. Superfoods took a new significance in the lives of people since the current pandemic

invaded our lives. Social media enthusiasts seem to be vying to push forward one or the other superfood, touting it as the best bet to increase immunity and tide over the pandemic. For the *Dadimas* of today this was familiar ground, as wasn't it similar to what their own grandmas used to recommend!

But then, are these superfoods really as good as they claim to be? According to nutritionist Rujuta Diwekar, superfoods have at least these five things in common:

- They grow naturally in the same land you live;
- They are rich in micronutrients and taste;
- Every part of the crop/plant can be used in unique ways;

**Amla is extremely sour, but surprisingly, after few minutes of biting, it leaves a sweet aftertaste indicating its potent, rejuvenating properties.**

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- They encourage diversity in your diet; and
- They lead to a sustainable lifestyle, help local economy, and make sound ecological sense.

There may be several such foods in India that fit these criteria but here we are focusing on the more popular ones, that are in use across the length and breadth of our country. Ideally, they fit into the holistic philosophy of Ayurveda, which recognizes that each plant, herb, and food in its natural form is preferred to parts of foods, such as vitamins or minerals.

## **Amla or The Indian Gooseberry as Superfood**

A native fruit to India, Amla or the Indian gooseberry is considered one of the most sacred trees in Indian culture. Biologically known as *Phyllanthus emblica*, this miraculous, all-in-one immunity booster has been used in traditional Indian medicines like



Ayurveda, Siddha and Unani, in culinary dishes and even in Indian versions of shampoos.

Herbal researcher Vidhi Bhatia wrote that the use of Amla “originates from the 5,000 year old traditional Indian medical system of Ayurveda — particularly “*Rasayana*” — a discipline focusing on enhancing good health, supporting the immune system, and rejuvenating and revitalizing the body and mind.”

Amla has a unique taste, which is a mix of various tastes like tangy, bitter, sweet and pungent. It is sour, astringent, bitter, acrid, sweet, cooling, anodyne, ophthalmic, carminative, digestive, stomachic, laxative, aphrodisiac, rejuvenating, diuretic, antipyretic and tonic all at the same time. The fruit is extremely sour, but surprisingly after few minutes of biting into it, it leaves a sweet aftertaste which is indicative of its potent, rejuvenating properties.

Unlike the synthetic, laboratory-made Vitamin C (Ascorbic acid) all of Amla’s benefits can be said to accrue from consuming it in its whole, untreated form. This sets it apart as Amla contains the entire Vitamin C complex range, including synergistic vitamins, minerals (such as calcium, magnesium, potassium, iron,

copper, and more), antioxidants, amino acids, alkaloids, tannins, flavonoids, and other nutrients that are not to be found in laboratory-created vitamin pills. Interestingly, its Vitamin C content is six times more than lemon.

A research by Central Council for Research in Ayurveda and Siddha (CCRAS) has found it useful in vitiated conditions of *tridosha*, diabetes, cough, asthma, bronchitis, cephalalgia, ophthalmopathy, dyspepsia, colic, flatulence, hyperacidity, peptic ulcer, erysipelas, skin diseases, leprosy, haematogenesis, inflammations, anaemia, emaciation, hepatopathy, jaundice, strangury, diarrhoea, dysentery, haemorrhages, leucorrhoea, menorrhagia, cardiac disorders, intermittent fevers and greyness of hair.

The regular intake of Amla helps inhibit growth and spread of various types of cancers like that of breast, uterus, pancreas,

**Barley is a whole grain that is low in calories while rich in fibre, vitamins and minerals. It is a good dietary option for the Diabetics.**



stomach and liver. It can help prevent and/or reduce the side effects of chemotherapy and radiotherapy used for cancer treatment. More than 18 compounds have been identified in Amla fruit that can exert anti-proliferative activity on gastric and uterine cancer cells.

There are various traditional Ayurvedic preparations, such as *Chyawanprash* in which Amla is used as a chief ingredient. It helps improve intelligence and memory power. *Triphala* and *Brahmarasayana* are other classic medicines in which Amla is being used since time immemorial.

### **Barley as Superfood**

Ranked fourth among the most cultivated cereals, barley is said to have been possibly originated in Egypt, Ethiopia or Tibet. *Vedas*, *Upanishads*, *Grihya sutra* and *Shatapata brahmana* describe Yava or barley in much detail. Barley was one of the first staples of the Aryans, and was extensively





used in religious ceremonies and rituals as well as in medicinal preparations. On the day of Basant Panchami, it is customary and auspicious in most parts of India to hang barley leaves along with cow dung on the door mast.

Barley, commonly known as *Jau*, is the fourth most important cereal crop after wheat, maize, and rice. Among the many kinds of cereals and pulses explained in Ayurveda, Acharya Charaka mentioned *Yava* as a food item worthy of daily intake owing to its immense health benefits. This underlines the importance of barley in disease prevention and health management. Charakacharya has also mentioned *Yava* as the best among *purishajanaka*, or food that generates faeces.

Barley is a whole grain that is low in calories while rich in fibre, vitamins and minerals. It is rich in Vitamin B such as thiamine, riboflavin, niacin, vitamin B6, folate and pantothenic acid. It has phosphorus, calcium, and

## Nearly 4000 years ago, Ayurveda named coconut tree the Kalpavriksha, implying a tree that can provide all that is needed for life!

copper that are good for healthy bones. It is a good dietary option for the Diabetics as it has a lower glycaemic index and provides greater satiety. Barley is rich in selenium which helps in maintaining healthy skin. One cup of barley constitutes 22 g of protein. This helps in building muscles and regeneration of cells.

Explained as dry, cold, heavy and sweet, it is a good laxative and an aphrodisiac and increases stability. It pacifies diseases of the urinary tract, eases abdominal pain, corrects fat metabolism, maintains pitta and kapha dosha, and purifies blood. It helps in reducing rhinitis, asthma, cough, pain in thighs, diseases of throat and skin. Barley helps in detoxification because of the presence of beta-glucans. As it is rich in phytochemicals like phenolic acid, flavonoids, and folates, barley exhibits anti-oxidant, anti-proliferative and cholesterol and triglycerides lowering properties.

### Folk Uses of Barley in India

Traditionally in various parts of the country, *Jau sattu* is used in the form of gruel for relief from painful and chronic dyspepsia. Besides, tribal people of Sonbhadra district in Uttar Pradesh prepare a decoction along with the stem bark of *Holarrhena antidysentrica* and black pepper. About 2

## HEALTH BENEFITS OF COCONUT WATER

**01** Coconut water is the richest natural source of cytokinin that inhibits platelet clots that cause heart attacks and strokes.

**02** The presence of cytokinin also shows anti-ageing, anticarcinogenic, and anti-thrombotic properties.

**03** Being rich in sodium, potassium and other electrolytes, tender coconut water is an important alternative for oral rehydration and considered safe and nutritious in pregnancy, for infants as well as in sickness.

**04** It has significant amount of calcium and magnesium necessary for healthy and strong bones.

**05** It is one of the best ways to ensure good eyesight.

**06** In many tropic regions it is given to patients with diarrhoea to replace the fluid loss from the gastrointestinal tract and to reduce the need for hospitalization.

**07** It contains bio-active enzymes that aid digestion and boost fat metabolism and thus aids in weight management.





400 g edible meat and some 30-150 ml of water may provide almost all the daily required essential minerals, vitamins, and energy for an average adult. Green coconut is rich in proteins, minerals, vitamins, calcium, phosphorus, iron, calcium, copper, iodine, chlorine, sulphur, potassium, magnesium, zinc, carbohydrates, electrolytes, enzymes, cytokine, phytohormones and vitamins B complex vitamins like folates, riboflavin, niacin, thiamine, and pyridoxine. The key saturated fatty acid in the coconut is lauric acid (1:12 carbon fatty acid) that increases good-HDL cholesterol levels in the blood.

Some people refer to it as the 'fluid of life' as the coconut milk is the closest to mother's milk. Tender coconut water is a natural isotonic beverage that matches the level of electrolyte balance that we have in our blood.

Coconut oil extracted from the dry kernel (*copra*) is an excellent

**The uniqueness of superfood is in its power in enabling other foods and nutrients to perform their miracles.**

teaspoonfuls of this decoction is given to the patient twice a day for seven days to cure malarial fever.

### Coconut as Superfood

After a hard day's work on a hot summer day, when you are tired and your energy is depleted if there is any drink that can totally rejuvenate and hydrate you, it is coconut water. Manna from heaven itself!!

Coconut (*Cocos nucifera L*), of the family Palmae, is a tree that is cultivated along the coastal belt for its multiple utilities, mainly for its nutritional and medicinal values, and it also serves as an essential ingredient in the kitchen.

Ayurveda documented it 4000 years ago and named it the *Kalpavriksha*, implying a tree that can provide all that is needed for life! It has been known to be *Sheetala* (cold), *Hridaya* (cardio-protective), *Deepana* (digestive stimulant), *Shukrala* (aphrodisiac) and *Laghu* (light). In ayurvedic terms, it relieves *Pitta*, *Pipasa* (thirst) and is *Basti shuddhikara* (diuretic).

Coconut is a complete food in itself as it is rich in calories, vitamins, and minerals. A medium-sized coconut (ideally 5-7 months old) carrying

moisturizing and nourishing agent when applied over the scalp. It is used in cooking and is employed in pharmacy and medicines.

Coconut milk (combination of water and kernel) serves as a tonic for dry, itchy and irritated scalp and is known to promote brain development, bone health and immunity.

As mentioned before, the term 'superfood' is a fairly new term referring to foods that offer maximum nutritional benefits for minimal calories. They are packed with vitamins, minerals, and antioxidants. However, it is neither sharply defined nor is there any standard criteria to classify any food as 'superfood'. However most of the superfoods are plant based.

It is also worth noting that it is not a superfood or any other food for that matter but the combination of foods that performs magic in our bodies. The uniqueness of superfood is in its power in enabling other foods and nutrients to perform their miracles.

A note of caution therefore is necessary at this juncture. Some people have the misconception that they will be protected from certain diseases or health issues if they take one or two nutrient-intensive foods, even though otherwise their diet may be poor. But then this is not likely to work for them.

Amla, Barley and Coconut mentioned in this article as superfoods are but a mere sample of the rich heritage of health foods readily available within our country. In the coming months, in other issues of Aahaar Kranti, we will be focusing on more of them. ■

The author is science communicator and filmmaker. [ajai\\_c@yahoo.com](mailto:ajai_c@yahoo.com)



# Piyal Fruit

## A Storehouse of Phytomedicines

**Dipanjan Ghosh**

A trip to Ajodhya Hill in Purulia District of West Bengal first introduced us to Piyal, a pale and bluish berry-like fruit. This is an extended part of the Eastern Ghat range and home to many hidden treasures and Piyal is one of them. The fruit, popularly known as 'Piyal-paka' among locals, is the fruit of a dicotyledonous tree *Buchanania cochinchinensis* (Lour.), which is a close relative of the mango, cashew nut and pistachio. This tropical forest tree is also known as Almondette, Calumpong nut, Cuddapah almond or Hamilton Mombin, but Piyal and Chironji are the two most popular names. In Sanskrit, it is known as Piyal or Prasavak, whereas in Hindi, Bangla, Marathi and Nepali it is known as Chironji or Piyal. In Kannada and Gujarati, it is known as Charoli, in Malayalam it is Nuramaram, in Odiya it is Charu, in Tamil it is Charam, and in Telugu it is known as Char.

Piyal tree is native to India, Myanmar and Malaysia. It occurs in the wild in the tropical deciduous forests of Northern, Western and Central India

**Piyal roots have anti-diarrhoeal activity probably due to the presence of tannins.**

during the monsoon. Piyal tree is also found in the Himalayan foothills at an altitude of 900-1200 m.

### Botanical Trivia

Piyal is a long-lived, slow-growing, deciduous tree with a spreading crown. It can grow up to 10-16 m in height with a trunk girth up to 75-90 cm. Bark is with numerous

deep and narrow cracks resembling crocodile hide, 10-12 mm thick, dark grey in colour with red blaze.

Piyal tree flowers between January to March and fruiting also starts simultaneously. The fruit is a drupe, oblong, laterally compressed, about 2-2.5 cm long and 1.3-1.5 cm across. Unripe fruits are green to purplish in colour.

Freshly collected fruits of Piyal



Photo: Supriya Samanta

Fruits ripen from April to May and remain on the tree for quite a long time. Each fruit contains single seed, enclosed within a hard-capsulated cover.

### Edible Parts

Ripe fruits are edible. Harvesting of fruits at the right time ensures better fruit quality. Fruits are eaten fresh or dried for later use. The pulp has a pleasant, sweetish, sub-acid flavour. People including children like it very much due to its sweet taste and aroma. However, the usual practice is to eat the fruit-pulp and seeds. The stubby seed within is as soft as a pine nut. Seeds are eaten raw or cooked. Though they can be eaten raw, seeds are often toasted or roasted before use, as this intensifies the flavour. Seeds can be used as a substitute for almond and are generally sold in the local market.

Piyal fruits and seeds are rich in carbohydrates (12.96 per cent), fat (38 per cent), protein (43.24 per cent), dietary fibres (18.50 per cent), minerals including calcium, phosphorus and iron in high amounts (0.95 g) and vitamins (7.72 mg) such as thiamine,

ascorbic acid, riboflavin, niacin, etc. They also possess high calorific value (229.99 K Cal). In addition, seeds contain 34-47 per cent fatty oil. Seed oil contains various fatty acids such as myristic acid, palmitic acid, stearic acid, oleic acid and linoleic acid, glycerides, and  $\beta$ -amyrin.

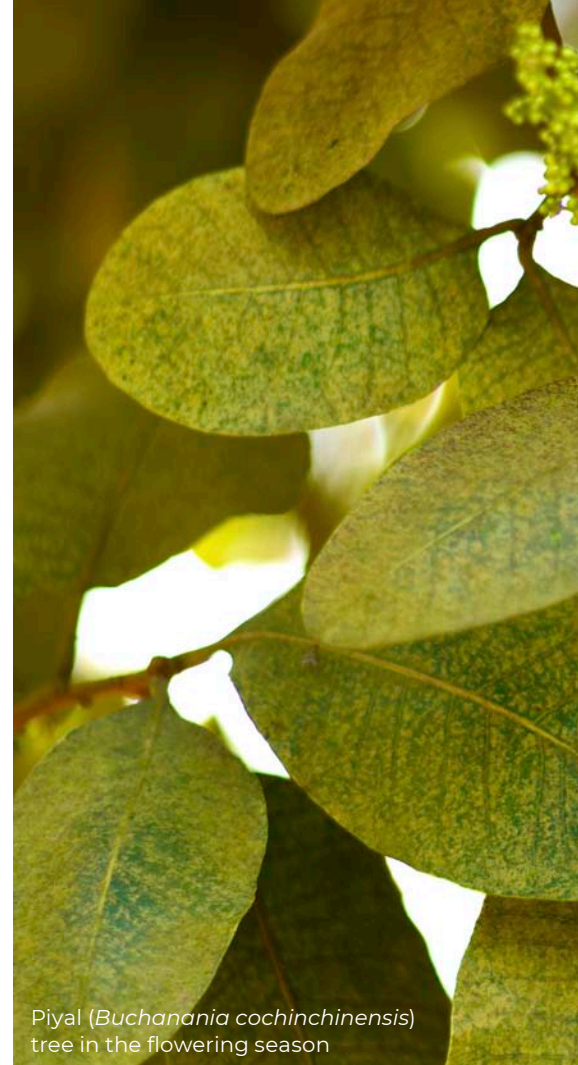
### Traditional Uses

Local people, especially tribals, often consume and sale the highly nutritious seeds of Piyal to sustain and also earn their livelihood. However, in rest of India, seeds are commonly used in sweets. The light-yellow seed kernel and the oil within it have an excellent flavour, somewhat indicative of almonds or pistachios. They are also ground into powders for thickening savoury sauces and flavouring

### Piyal seeds may be a promising alternative to treat progressive neurodegenerative brain disorder like Alzheimer's disease.

batters, and stewed into rich, meaty kormas. In some parts of India, the dried fruit and seed are baked together to make a sort of bread.

Piyal has a long history of folk use in tribal societies across India. For years, rural and aboriginal people of Chhota Nagpur Plateau, Odisha, Madhya Pradesh, and Chhattisgarh mainly use this plant to treat various



Piyal (*Buchanania cochinchinensis*) tree in the flowering season

disorders. It is used in the form of decoction to treat intrinsic haemorrhage, diarrhoea with blood and as tonic. The seeds are also used as an expectorant and tonic. Kernels ground into a powder and used with milk as an aphrodisiac and to treat fever and burning sensation. The oil extracted from kernels is applied on skin to treat skin diseases and also used to remove spots and blemishes from the face. The root is used as an expectorant, in biliousness and also for curing blood diseases. The juice of the leaves is digestive, expectorant, aphrodisiac, and purgative. The gum after mixing with goat milk is used as an analgesic and also used against leprosy in traditional medicine. In Chhattisgarh, fruit and bark extract of Piyal is used to treat snakebite.

Various parts of the Piyal tree







Photo: Dipanjan Ghosh



A mature Chironji or Piyal seed is used as a substitute of almonds or pistachios in Indian cuisine

Photo: Supriya Samanta & Kirity Kumar

such as leaves, fruits, seeds, gum, and root bark are used in the Ayurveda and Unani systems of medicine. According to Ayurveda, the roots are acrid, astringent, cooling, depurative and constipating. Powder of the root bark mixed with honey is useful in blood dysentery. The leaves are used in the treatment of skin diseases. The fruits are used in treating coughs and asthma.

### Curative Properties

With the advancement of pharmacological researches, medicinal properties of Piyal have been rediscovered to some extent in recent times. The alcoholic fruit extract is diuretic, promotes the production of urine and also can be applied in wound healing. Studies reveal that extract of Piyal seeds has positive effect on memory

acquisition and retention and thus it may be a promising alternative to treat progressive neurodegenerative brain disorder like Alzheimer's disease.

Exposure to various environmental factors leads to free radical formation. The most common form of free radicals is oxygen. When an oxygen molecule becomes electrically charged, it tries to

**Various parts of the Piyal tree such as leaves, fruits, seeds, gum, and root bark are used in the Ayurveda and Unani systems of medicine.**



Young Piyal seed (magnified) looks like human brain

collect electrons from other molecules, causing damage to the DNA and other molecules and therefore cause mutagenesis.

Piyal bark can be used against genotoxicity (destructive effect on a cell's genetic material) and oxidative stress in human. In addition, an effective gel-based remedy from bark extract has been formulated to cure wounds, which is under trial at present.

Piyal roots have anti-diarrhoeal activity probably due to the presence of tannins. Also, the ethanolic root extract has good preventive and therapeutic action on gastric ulcers.

The methanolic extracts of leaves and kernel have good anti-inflammatory activity. Moreover, the leaf extract exhibits anti-diabetic and fat-reducing activities in laboratory condition and needs to be further investigated for the treatment of both type I and type II diabetes mellitus. ■

Dipanjan Ghosh is a popular science writer and science communicator.  
dpanjanghosh@gmail.com

# New Variety will Increase Soybean Production

## India Science Wire

There was a time when India was not self-reliant with respect to food production and had to depend on export for procurement of food grains. But the scenario changed after the Green Revolution in the sixties. Today, the country is not only self-reliant; it has become a food-surplus nation. The White Revolution has played more or less the same role in case of milk production. For oilseeds, the country still lags far behind its requirement and is dependent on imports. However, efforts are being made in this direction, and scientists are also experimenting in developing new techniques to make it a success and fill this gap.

A new variety of soybean, MACS (Max) 1407, has now been developed which is relatively more resistant to pests and helps in increasing production. This variety is especially suited for the soil of Assam, West Bengal, Jharkhand, Chhattisgarh and North Eastern states. This new variety of seeds will be made available to the farmers of these states for the Kharif season 2022. It is also worth mentioning here that at present the land covering soybean production in the country is mainly limited to states like Maharashtra and Madhya Pradesh. As such, this will not only reduce the pressure on conventional crop growers but will also encourage crop diversification in the regions of eastern India. The government believes that the next Green Revolution in the country will be possible only through Eastern India.

In such a situation, this new variety of soybean can play an important role in laying its foundation.

In India, 90 million tonnes of soybean were produced during the year

**Soybean is an important crop as oilseeds. Also, it is considered an important and cost-effective source of protein for cattle.**

2019. This important crop is mainly produced as oilseeds. At the same time, it is also considered an important and cost-effective source of protein for cattle. India is one of the leading producers of soybeans. Nevertheless, in view of the ever-increasing requirement of edible oils in the country, there is a need to boost its production. In such a situation, a crop with a high yielding, disease-preventive variety can prove to be helpful in achieving this goal.

Increasing the required production of soybean is a big challenge and scientists found





a feasible solution. For this, Agharkar Research Institute (ARI), Pune, an autonomous institute of the Department of Science and Technology, Government of India, has developed a high-yielding soybean seed in collaboration with the Indian Council of Agricultural Research (ICAR). Using conventional cross-breeding techniques, it has developed seed variety Max 1407, which can give yield up to 39 quintals per hectare. It also has better immunity against insects, which cause great damage to the soybean crop. Leaf roller, steam fly, white fly etc. are prominent among these pests. This seed

**A new variety of soybean, MACS (Max) 1407, is relatively more resistant to pests and helps in increasing production.**

is also suitable for sowing done by machines. Also, the variety is suitable for North Eastern India, which has very high rainfall.

ARI scientist Santosh Jaibhai, who played a key role in this project, has said about his achievement that “Max 1407 has created a potential of 17 per cent more production than the best variety available so far. Also, it has seen an increase of 14 to 19 per cent over the popular varieties. It can be sown anytime between 20 June and 5 July, and there is no damage to the crop during sowing in this period. It is able to adapt better with monsoon in comparison to other varieties of soybean.”

On an average, it takes 43 days for half the crop of Max 1407 to ripen, while the entire crop is fully ready to use within 104 days from sowing. It has white flowers, yellow seeds and black centre. Its seeds contain 19.81 per cent oil and 41 per cent protein. It also consumes less water and fertilizer. ■

Translated by Suman Bajpai

## VARIANT OF SOYBEAN

There are 44 varieties of soybean that have been released for cultivation in India. A complete list of varieties suited for different states of India are available at the website of ICAR-Indian Institute of Soybean Research. The website also lists varieties depending on their maturity, germinability, resistance to insects and pests, resistance to shattering, useful varieties in delayed sowing, protein content, oil content, tofu quality, etc.

Being an economic source of basic nutrition, soybean can combat the protein-energy malnutrition in the



country. Besides, being rich in nutraceutical components like isoflavones, tocopherols and lecithin, use of soybean in daily diet can reduce the risk of numerous killer diseases viz. breast cancer, diabetes, cardiovascular diseases, osteoporosis. Despite these health-promoting virtues, of the total soybean produced in the country merely 5% is tapped for food uses. Apart from the poor awareness about the health benefits of soybean, off-flavour associated with soy products, presence of anti-nutritional factor like trypsin inhibitor, flatulence-inducing components in soybean deter the use of soybean grains for food purpose.



# Arum (Arbi)

## Treasure of Nutrients

### Ankita

To fulfil the requirements of nutrients, people usually resort to vitamins available in the market; but if we look around, we will get almost all the nutrients of daily requirement from the common vegetation available. There are many such plants found in India whose tubers, leaves, and even roots are consumed; one such plant is Arum (Arbi).

Arum is a plant whose every part is eatable. The scientific name of Arum is *Colocasia Esculenta*. It is commonly cultivated for its tubers, which are used as vegetables. Arum leaves are

known as Colocasia leaves or Taro leaves. Arum requires hot and humid climatic conditions and temperature ranging from 21 to 27 degree Celsius to grow. Hot or very dry weather adversely affects its yield. Also, at places where there is a problem of frost, it does not give good yield. It can be cultivated with good yield at places where the average annual rainfall is 800 to 1000 mm and is evenly distributed. Yields are good in shady places, so Arum can be grown as an intercrop with fruit trees.

Arum has a cooling effect on our body. It is rich in starch and its leaves are full of nutrients. Many delicious dishes are cooked using

these leaves. Arum tubers are a good source of carbohydrates and proteins. Its tubers have much more starch than potatoes and sweet potatoes. Its leaves are full of Vitamin A, salts of mineral such as phosphorus, calcium and iron, and beta carotene. Every 100 g of the leaves contain 112 kcal of energy, 26.46 g of carbohydrates, 43 mg of calcium and 591 mg of potassium. It is rich in some important minerals like zinc, calcium, magnesium, copper, iron and manganese.

According to Dr Anand Kumar Singh, Deputy Director General (Horticulture), Indian Council of Agricultural Research, New Delhi, "The green leaves of Arum contain  $\beta$ -carotene, ascorbic acid, folic acid, riboflavin, vitamin-B, vitamin A,  $\beta$ -sitosterol and steroid, and also a rich source of minerals such as calcium, potassium, phosphorus and magnesium. During the harvest season, the leaves and stalks of Arum are prepared. It is later used as a substitute for cereals and vegetables. Arum leaves

contain flavonoids, phytochemical, and anthocyanin. They are also a good source of phytochemical such as phenolic compounds like gallic acid, chlorogenic, and catechins. The medicinal properties of Arum leaves have been extensively researched in India. The tubers, leaves, and stalks of the Arum plant have various medicinal properties. Arum leaves contain phenolic flavonoid pigment antioxidants such as C-carotene and cryptoxanthin, along with vitamin A.”

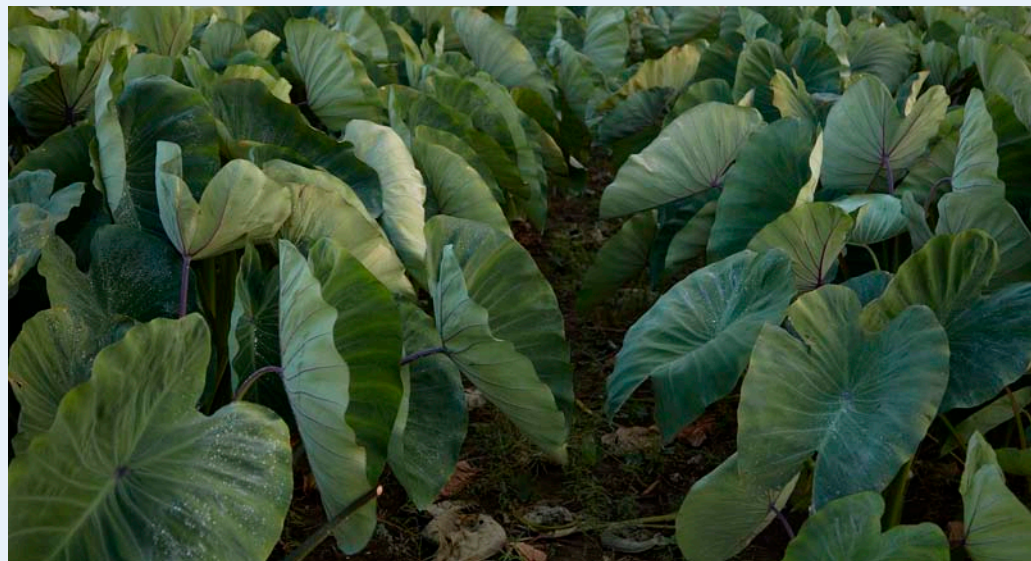
One hundred grams of fresh Arum leaves contain 4825 IU or 161% of our daily requirement of vitamin A. It has a good amount of an amino acid called thionine. It helps in the formation of collagen and elastin. These compounds are needed for healthy skin and eyesight.

The stalk extract of Arum leaves with salt is used to cure swollen glands. Arum is one of the best sources of dietary fibre; 100 g of Arum provides 4.1-11% of the daily requirement of dietary fibre. Therefore, they help in maintaining the digestive system. The fibre present in it increases the weight of stool and normalises defecation. Thus, it prevents some digestive problems like colic, intestinal spasms and constipation. Apart from this, it also reduces chances of colon cancer.

Iron is one of the essential minerals as it helps in the development of red blood cells. Red blood cells transport oxygen to the organs of the body. Arum leaves are beneficial for people who are anaemic, as it contains high amount of iron. The patient should take Arum leaves regularly. Arum leaves also contain omega-3 fatty acids. It controls the contraction and relaxation of blood vessels. If

the circulatory system works well, the blood pressure can be maintained at a normal level. In this way, by using Arum, you can reduce the side effects of high blood pressure. It also helps in preventing other symptoms associated with anaemia like fatigue and weakness.

Vitamin C present in Arum leaves works as a powerful antioxidant that can prevent common diseases such as colds, coughs and some types of cancer.



### **Arum has a cooling effect on our body. It is rich in starch and its leaves are full of nutrients.**

Vitamin C is also necessary for the proper development of bones and joints. Along with promoting overall health, it also boosts the immune system.

Presence of vitamin A in Arum leaves makes it an effective medicinal-nutritious food for our eyes. Consuming Arum leaves regularly is helpful in preventing eye problems like myopia, blindness and cataracts.

Arum leaves contain a good amount of amino acids. Amino acids help in increasing the sperm count in men. Arum leaves are very low in fat and high in protein and therefore good in reducing weight. Arum contains high amounts of folate. It is essential for the development of the foetus, brain and nervous system. But pregnant women should consume Arum leaves once it is cooked thoroughly.

There are quite a few delicious recipes made with Arum leaves.

The soft leaves can be eaten as saag or pakoras and after steaming in the form of rolls with gram flour and spices in it. The stalks of the leaves are cut into pieces and dried and used as a vegetable.

One reason for the low popularity of Arum is that it contains calcium oxalate which can cause irritation if not processed properly during cooking. There is a need to create widespread awareness about the use of Arum, which is rich in various nutrients and medicinal properties, in order to provide adequate nutrition to the masses in India. ■

The author is an independent journalist.  
ankita.jimmc@gmail.com

Translated by Kumar Pratyush

# Ayurveda Manthan

## The Science of Healing



On 15 May 2021 a webinar was conducted on Ayurveda and Health organised jointly by Aahaar Kranti Team and Hindu University of America. The theme of the discussion was how food can be the medicine? The panellists were Dr Tanuja Nesari, Director and Head, Division of Translational Research & Biostatic at All India Institute of Ayurveda, GOI; Prof. Shyamala Prasad, an Ayurvedic practitioner and recipient of Lord Dhanwantari Award; Prof. Leena Patterkine, an educator in biotechnology at the Harrisburg University; Dr Rashmi Kulkarni, entrepreneur in hydroponics as Managing Partner at Integrated Group, Qatar and a GIST volunteer for Aahaar Kranti; Shri Jayant Sahasrabudhe, National Organising Secretary at Vijnana Bharati; and Shri Praful Krishna.

Dr Rashmi Kulkarni introduced Dr Tanuja Nesari to the audiences. In her talk Dr Nesari stressed how Ayurveda is not just the science of life, but it is a knowledge system for a healthy and happy life. It touches upon each and every aspects of the human life. It is not only a medical science but a spiritual and social pillar that creates harmony between the mind, body, and the soul. If the environment around us and everyone around us are clear, clean, and healthy, we remain healthy. She mentioned of Charaka Samhita that has been developed on the basis of Guru-

**Future of medicine is no medicine that would ensure self-maintenance of the body and mind.**

Shishya Parampara in which Atreya taught his disciple Charaka and then from him to his disciples it flowed on. It is said if you treat one person one life is saved but if you develop a doctor, millions of lives are saved.

Dr Shyamala Prasad requested Prof. Nesari to share her vision on the future for Ayurveda and how that can lead the nation to become Vishwa Guru. Prof. Nesari elaborated on the concept of One Health described in Ayurveda that is to be communicated and practiced seriously. This is especially important during the current pandemic situation. All five aspects, Jal, Vayu, Akash, Agni and Prithvi need to be pure in order to minimise the viral load. Ayurveda calls for improving mental, spiritual, and social health that in turn improves our physical health. Prevention is an important concept in Ayurveda. It insists on having a good diet, lifestyle, thought process, a good biological clock, and following Aahaar, Nidra and Brahmacharya. She stressed that future of medicine is no medicine that would ensure self-maintenance of the body



and mind. If this message is propagated around the world, it is going to be the greatest gift from India to the world. This is the soft power of India. Then she talked about 'Aturasya dadi Parimoksha' which means complete or holistic cure of the disease. Ayurveda is not only for non-communicable or chronic disease. The pandemic has taught us that Ayurveda is equally important for communicable diseases as well. Technology has to be integrated with the classical wisdom of Ayurveda so that it becomes contemporary and relevant and offers mainstream medicines. The scientific principles, theories and applications of Ayurveda should be popularised and backed by evidence-based practices.

Later Praful Krishna ji also stressed on the merging of classical with the contemporary when it comes to placing Ayurveda in the present-day lifestyles. He explained that one of the aims of Aahaar Kranti is to establish Bharat's place in addition to making it *Ayushman* (healthy), *Vidyan* (knowledgeable), *Krishi Pradhan* (based on agriculture), *Samridhh* (wealthy), and *Vishwa Guru* (world leader). Ayurveda is not about medicine but it is about Ayu. It is about Embryo to End-of-Life (E-to-E). Prof. Nesari also emphasised on how cultivation to application and management of the entire supply chain and application of technology are needed to make people aware of the importance of food. She talked about Poshan or wholesome diet and requested to incorporate the concepts in the modules of Aahaar Kranti. Science behind the food modules are to

be informed to everyone related to Aahaar Kranti.

Prof. Nesari also pledged to support the Aahaar Kranti movement in creating content in various forms including short videos on Ayurvedic recipes that are helpful in treating various diseases. She explained that how Ayurveda is different from other forms of medicine. It is predictive, preventive, and promotional, that needs active participation of the person



seeking its benefits. It demands changes in lifestyle, dietary habits and thought process. Awareness has to be created that Ayurveda offers simple yet precise solution. Common people must understand that they have simple solutions for complicated illness

**Ayurveda is different from other forms of medicine. It is predictive, preventive, and promotional, that needs active participation of the person seeking its benefits.**

and options for better cure and better outcome in Ayurveda.

Prof. Nesari also had some very easy and practical tips for people who are confined at home during the pandemic time. One must have a good diet, proper sleep, and ingredients like Tulsi, kadah or herbal tea etc. as supplements that strengthen our immunity.

She also discussed the importance of incorporating Ayurveda in our education system. She said, this is probably the best time to do so when the New Education Policy is going to be implemented in the country. Our children must know about the ancient scientists and basic principles that would keep them healthy. They are going to be the future ambassadors of healthy and happy life.

Prof. Nesari also explained that we must understand that in Ayurveda everything starts with examining the disease and then derive the solution. She discussed in length on lifestyle disease like diabetes and how Ayurveda takes a completely different view than conventional treatment of the disease. Ayurveda says if diabetes is due to wrong lifestyle it can be completely reversed with regular exercise and walking and proper amount of food intake.

Prof. Mirajkar requested Dr Nesari to discuss on Viruddh Aahaar (non-compatible food) and she explained it along with several associated concepts including its preparation, time of consumption, order of consumption etc. She confirmed her support in preparing modules with such contents that will be used by the volunteers of Aahaar Kranti in creating awareness among people. ■

# Training Teachers Education Module 1

## Why is it Important? (K7-K12)



## Nutritionally Balanced Diet

### Right Amounts of Macronutrients and Micronutrients

- Important for overall growth, healthy eyes, and bones
- Improves motor and cognitive skills
  - reasoning, learning, logical thinking, behaviour, etc.
- Helps maintain a healthy gut (microbiome)
- Supports in building a strong immune system
- Keeps us free from diseases
- Good for cardiovascular health
- Reduces risk of lifestyle diseases
  - diabetes, hypertension, cancer, tumor etc.

## Consequences of Poor Nutrition

- Poor cognitive function, depression, stunting, wasting, etc.
- Weak immune systems, poor dental health and wound healing
- Overweight and obesity without proper growth and development
- Increased risks of heart disease and stroke, Type 2 diabetes, cancer, osteoporosis, arthritis, autoimmune diseases
  - Eating disorders, chronic constipation, GERD, peptic ulcers
  - Non-alcoholic fatty liver disease



## Spices

Complex combinations of spices are the highlight of traditional Indian cuisine

- Blood sugar levels in check
- Boost heart health
- Pain relief
- Fight inflammation and reduce cellular damage
- Immunity-boosting antioxidants
- Prevent asthma, allergies, and other respiratory issues
- Reduce foodborne illnesses
- Bioactive compounds that help digest food

