

## FORGET ME NOT

The day of November 10 is a day to ensure that we really won't forget. Forget Me Not Day has been around since World War-I, although it's often lost in the hustle and bustle of preparing for Thanksgiving. Charles Spurgeon English Particular Baptist Preacher said, "A good character is the best tombstone. Those who loved you and were helped by you will remember you when forget-me-nots have withered. Carve your name on hearts, not on marble." When each war ends, many soldiers who returned wounded would require longer care to recover. During 1920s, there were not many organizations and services that supported the wounded soldiers. Thus Judge Robert S. Marx, who fought as a soldier in World War I, found a spark for the forget-me-not day when he was wounded on November 10th, 1918. Although there is a common misconception that Forget Me Not Day pertains to people losing touch with one another, it's actually a day meant for us to celebrate our troops. The day serves to honour all past and current United States Military veterans who bear the permanent scars of battle. The day is dedicated to all past and presents US military veterans who have been permanently scarred by battle. The day was called Forget-Me-Not Day and funds were raised by selling forget-me-nots. The first published occurrence of this day was on December 17, 1921. Forget Me Not Day as we know it was established following World War I, when Judge Robert S. Marx, himself a WWI veteran, declared the holiday in honor of veterans who had suffered physical losses in the line of battle - those who had lost limbs, blood, and other integral body parts. Since Robert S. Marx was a law practitioner before joining WWI as a soldier, he continued practicing Law after his recovery. Soon, Robert S. Marx was chosen Judge, and his interest in the military veterans' affairs was seen afloat. He was seen making speeches and raising funds for this cause. Forget-Me-Not flower stands as the symbol for National Forget Me Not Day. It grows in open, rocky places and the mountain areas of Alaska. Forget-Me-Not is the day is reminiscent of the Great War. Wounded soldiers returned at the time, requiring long-term care after the conflict finished. While the situation of wounded veterans was not new, there were no services available to meet their needs. In addition, the administration was unprepared for the large number of wounded soldiers who returned. There were few programmes and organizations available to offer veterans the care and support they required. In 1921, a campaign to commemorate and provide assistance to returning soldiers began in earnest. And it all started with a single injured soldier. Forget-me-not represent true love and giving someone this flower means you truly love and respect this person. It is a testament to your relationships and promises the other person that you will never forget them in your thoughts. A symbol of fidelity and being truthful to someone you love. Let us send forget me not flowers to our loved ones as a simple way to show them how much they mean to us.

Acting Without  
Passion

In tantra, it is said that sexual interaction has three different purposes. The first purpose is progency, the second is pleasure and the third is superconsciousness. Those who consider superconsciousness to be the purpose are yogis, those who consider pleasure to be the purpose are human beings, and those who consider progeny to be the purpose are animals.

All religious people, whether Hindus, Muslims or Christians, believe that the main purpose of sexual life is to procreate. It also says in the Bible that the main purpose is to create more adherents, so that the religion becomes powerful and influential. That however, was not the purpose of Christ. Christ was a swami but his disciples were leaders, not swamis. They made a socio-political order out of the spiritual life of Christ.

The best definition is the tantric and yogic definition: having a passionless mind, with an attitude of worship for all women. Give your respect and devotion to every woman, whoever she is. Whatever physical relations you have with her, they are immaterial. Relationships with the opposite sex can be based on many ideas. You can be a total friend to your wife, your mother, daughter or sister, and you can give her immense and total love. Sex is not the only way of interaction. In my personal opinion there can be no greater definition of brahmacharya than this. All the other definitions have some sort of unscientific basis. Many create conflicts and contradictions, but in tantra there is no suppression, contradiction or licentiousness.

The concept of brahmacharya is not very clear in western society and that is why a lot of problems have developed. Some people have tried to become brahmachari but the conditions of western society were not suited to absolute abstention. Naturally those people were not able to manage it correctly and their behaviour reflected this. You see, sexual abstention definitely affects the quality

—Swami Satyananda Saraswati

## Soil-health: Key to sustainability

## ■ COURAV SABHARWAL

**S**oil-quality is a key determinant of sustainable agriculture that is influenced by the various physical and chemical properties whilst considering the influence of climate and external inputs. Various current land and crop management practices have resulted in degradation of soil quality, thereby, adversely impacting the sustainability of agricultural inputs. For example, excessive use of fertilizers has resulted in a nutrient surplus in parts of the world, resulting in water and air pollution, and disturbing human health and the environment. On the other hand, an imbalance in the supply of nutrients can reduce soil fertility and organic matter, affecting soil microbiota and resulting in erosion. A healthy soil ecosystem involves design and management to maintain a healthy and sustainable ecosystem that is not limited to nutrient cycling, biological control of biotic and abiotic factors and regulation of water and air supply. Many approaches are considered to reverse the changes of reduced soil quality while trying to replenish them. United Nations Convention to Combat Desertification (UNCCD) recommends systematic conservation agriculture practices that integrate crops with livestock and trees to create a healthy and complementary ecosystem. Approaches such as switching to biological plant growth agents instead of synthetic ones, and an integrated approach to water and soil management are also being pursued. An emerging approach, established by several research activities, is that use of carbon sequestration will have a positive impact when it comes to promoting a healthy soil ecosystem. Apart from increasing the soil quality and promoting plant growth, it can increase water availability to plants, reduce the impact of pollutants and improve soil and plant resilience to external environmental conditions. It's also equally important to establish preventive measures to prevent further degradation of soil. A comprehensive action plan is needed to implement soil-friendly processes on a global scale. This requires the involvement of stakeholders across all societal segments, including farmers, researchers, trade associations, industrial participants, and the public. Development of qualitative and quantitative indicators that can continuously monitor soil health and help in developing/modifying an intervention plan to improve the nutrient content, soil microbiota, access to water and air can go a long way in maintaining soil health. Tax credits, financial aid and legislation that encourage the adoption and long-term implementation of soil friendly practices can help farmers choose agricultural inputs that don't harm the soil while replenishing it. A growing focus on sustainability has resulted in an evaluation of agricultural activities and their contribution to climate change. Various studies have underlined the potential environmental degradation that had resulted in the reduced nutrient availability to crops and increased susceptibility to environmental stresses and pathogens. The role of soil microbiota is also crucial for establishing sustainable agricultural

practices. Treating the soil ecosystem as a diverse food web and regulating the growth of beneficial microbes and plant pathogens can help in establishing a healthy soil microbial population that can help in promoting plant growth and yield but also help in maintaining healthy soil. Soil microbiota is often used as an indicator for soil health; hence, careful selection of growth promoters, plant protection agents, and microbial inoculants that are of biological origin causes minimal impact on the soil ecosystem as opposed to chemically derived ones. Further, they can also help in water conservation and improve water availability to plants.

Soils help meet societal needs, providing food, energy, and nutrients. They also help minimize the impact of climate change and promote healthy ecosystems. Below are three reasons why soil is so important:

Soil organisms ensure sustainable food systems and mitigate climate change. Plants and animals rely on soils for food, shelter, and more. Soil is also home to fungi, algae, and unicellular and multicellular organisms that are invisible to the naked eye, such as bacteria and protozoa. As they move through the soil, microorganisms help improve drainage and soil structure, making soil more fertile and productive. Soil plays a critical role in the carbon cycle: the continuous process by which carbon atoms travel between the atmosphere and Earth. For example, in breaking down organic matter in the soil, microorganisms release carbon dioxide into the atmosphere and create nutrients and minerals that feed plants and crops. Soil also naturally absorbs carbon from the atmosphere in a process known as sequestration. Healthier soil absorbs more carbon, reducing the effects of greenhouse gases. Soil's essential roles

Farmers rely on soils to make food production possible, feeding people and livestock. Soil also acts as a purifier: As surface water travels through the ground to replenish aquifers, soil filters out toxins and impurities, making it drinkable. Soil also provides raw materials for infrastructure. For example, soil is an important element in making bricks for buildings.

One can consider these resources for insights into soil's role in sustainability and creating a healthier world.

► Awe International, 'Saving Our Soils for Future Generations': An exploration of why healthy soils are essential for sustainable societies.

► Natural Resources Conservation Service, "The Heart of Soil: The Importance of Soil Health Principles": An examination of healthy soil's role in sustainable agriculture.

► Soil Science Society of America, "Soil Basics": A deep dive into soil: what it is, its different types, and its function.

► Sustainable Agriculture Research and Education, 'Why Soil Organic Matter Is So Important': A comprehensive explanation of organic matter's role as the foundation for healthy plants, animals, and humans.

Soil conservation contributes to sustainability and offers the following benefits:

► Improves soil quality and productivity.

Increased fertility improves crop yields, reduces the need for chemical fertilizers, and saves money.

► Optimizes water infiltration. Better filtration increases water storage, preventing soil from drying out.

► Provides food and shelter. Soil-producing vegetation provides nourishment to all types of animals and offers protection from the elements.

Soil conservation also helps to minimize the following:

► Loss of fertile and arable land, impacting crops and livestock production, as well as the economy

► Pollution and sedimentation flowing in streams and rivers, affecting fish and other species

► Erosion and environmental degradation and desertification of land, potentially increasing flooding and negatively impacting forest ecosystems

Soil conservation is key to environmental sustainability. It helps protect natural resources and watersheds, restores habitats for plants and wildlife, improves water quality, and makes soil healthier. Soil conservation also creates economic opportunity. Productive and healthy soil helps farmers meet increased demand for agricultural commodities from a growing global population, driving economic growth. Tilling turns over about 10 inches of topsoil and allows farmers to plant more seeds with less effort. A downside of tilling is that it removes the plant covering, potentially leaving the soil bare, decreasing the amount of nutrient-rich organic matter, and reducing its ability to absorb water and retain nutrients. Tilling can also make the soil more susceptible to erosion. In no-till farming, seeds are planted in narrow furrows, eliminating the need to plow. No-till farming protects the soil from moisture loss due to high temperatures because cover crop residue remains on the surface of the soil. The residue layer also helps infiltrate water into the soil and increases organic matter and microorganisms, further enriching the soil.

Terrace farming is an agricultural practice that uses terraces, or steps, built into the slopes of hilly or mountainous areas to create a water catchment system for crops and is commonly used in growing rice. Rainwater carries nutrients and vegetation from one terrace to the next, so the soil remains healthy. Terrace farming also reduces soil erosion and improves soil productivity in otherwise idle plots of land.

Like terrace farming, contour farming involves growing crops on hills, but instead of changing the structure of a hill, the farmer uses its natural slope. In contour farming, a farmer plows the soil parallel to the hill's contours, creating rows of small dams that minimize runoff of essential nutrients, organisms, and plants, while increasing water infiltration in the soil. The U.S. Department of Agriculture (USDA) reports that contour farming can reduce soil erosion by as much as 50 per cent.

Instead of planting the same crop year after year on the same plot of land, crop rotation

involves planning out growing seasons for different crops. This method of sustainable agriculture requires long-term planning, with crops changed every season. In addition to improving soil health and organic matter, crop rotation reduces the need for fertilizer and pesticides, lowering costs. It also helps prevent excess chemicals from entering water supplies, improving water quality.

Windbreaks are rows of trees and bushes planted between fields of crops, reducing the erosive power of the wind on the soil. Windbreaks also provide homes for living things. From an economic standpoint, using trees that produce fruits and nuts in windbreaks can diversify farm income.

The U.S. Environmental Protection Agency (EPA) defines wetlands restoration and protection as "removing a threat or preventing the decline of wetland conditions." Wetlands provide a habitat for living creatures of all types. They also act as buffers, protecting farmlands from floods. Like windbreaks, buffer strips are designated areas of land planted with trees and bushes. Instead of protecting soil from the wind, their purpose is to prevent water runoff and reduce erosion.

In areas where soil has degraded, the reestablishment of forest cover can improve soil and restore ecosystem health. This method provides shade for crops and is particularly useful for forest farming, which cultivates high-value crops, such as those used for medicinal purposes. Earthworms are among the most productive organisms in soil. They digest plant matter, releasing essential nutrients into the soil, and their tunnel networks create air channels that help water move through the soil.

Unsustainable agricultural practices can affect soil health, which in turn affects the global climate cycle. Poorly managed soil can release excess carbon dioxide, a greenhouse gas that contributes to climate change. Restoring degraded soil and using soil conservation practices in agriculture can effectively sequester carbon, helping build resilience to the effects of climate change. Soil conservation also promotes sustainable and economic development to meet the U.N. Sustainable Development Goals (SDGs): 17 goals focused on providing a "sustainable future for all." According to the European Environment Agency, seven SDGs directly correlate to soil conservation practices, including SDG 6 - Clean Water and Sanitation: Through drainage and purification, soil helps to provide clean water for drinking and farming; SDG 13 - Climate Action: Through sequestration, soil can play a pivotal part in combating climate change by reducing atmospheric carbon and SDG 15 - Life on Land: Healthy soils are essential for sustainable management of forests, fighting desertification, and reversing land degradation.

Building the resilience of our ecosystems is critical to addressing the challenges of a changing climate. One key factor sits right under our feet: soil. Through soil conservation, we can work to minimize the impact of climate change and support the long-term needs of society.

## Knowing about 'Harad' &amp; its uses

## ■ PROF (DR) R D GUPTA

**H**arad (*Terminalia chebula* Retz) is a well known species of sub-Himalayan or Shivalik region and grows upto an elevation of 1500 m above mean sea level. It also abounds in the deciduous forest of Peninsular India. It is an important associate in dry deciduous forests of Shivaliks, Kandi belt of Jammu (J&K) State, Himachal Pradesh and Uttarakhand as well as Punjab and Haryana. In Jammu region, it grows in areas of Jammu, Udhampur, Kathua and Rajouri districts upto 1000 mt. In Himachal Pradesh, it grows gregariously form on poor rocky sites upto 1050 m either pure or with *Pinus roxburghii* in Kangra and Hamirpur districts. Whereas, in sporadic form, Harad is found in Bilaspur, Nahan and Nalagarh areas. Harad is known to have laxative or purgative properties. Besides this, 'Harad' possesses anti-amoebic, anti-tumour and cardiotonic properties. It has proved useful in diabetes and arrests the activity of HIV virus. "Harad" is a component of famous Ayurvedic preparation - "Triphala", and fruits are also used for drying cotton, wool and leather, and for tanning purpose.

**Medicinal Values:** The fruit is well known for its medicinal value as laxative, astringent as treatment for chronic stomach ulcers. It is main constituents of "Triphala" which is known for stomach disorders. Finally, powdered fruit is used as denitrifice in toothache, and considered useful in curing gum bleeding and ulceration. The fruit paste is used in burns and fruit extract as wash in watering eyes and also in asthma. The main quality is to regulate the functioning of the body. The dried "Harad" fruits are being exported in the form of preservative (murbha), preserved in honey or sugar syrup, since, it regulates body functioning. It is also found useful in diabetes especially to pregnant and nursing mothers. It arrests the activities of HIV virus and is used as one of the ingredient in formulations against AIDS.

**Fruit of the "Harad"** is the best source of tannin for tanning leather, and for dying cotton and wool. The fruits are extensively used as auxiliaries with other dye stuff. In combination with iron salts it gives black dyes and with alum yellow dyes. About 30 per cent requirements of tanning industry is met from the fruit of this species. It is remarkable to note that collection and processing of "Harad" fruit is a thriving business and has developed into a cottage industry in many areas of Jammu Shivaliks.

**Botanical Description:** "Harad" is a moderate to large sized

deciduous tree, attaining a height of 15 to 24 m and a girth of 1.5 to 2.5 m. The girth of tree named 'Raja Reed' near a village Muthwar in Jammu as 3.44 m at breast height. It has a cylindrical bole of 4 to 9 m with round crown, spreading branches and a short trunk. Its bark is dark brown, often longitudinally fissured, exfoliating woody scales. Leaves are elliptic or ovate in shape, 8.16 cm in length and 4.8 cm wide. They become silvery and shining and almost glabrous when mature. Flowers are bisexual yellowish white in colour with terminal panicle spikes. Fruits drupe, ovoid from narrow base, usually 2.5 to 3.5 cm long, 5-ribbed on drying. Wood of the tree is very hard, fairly durable and is used for agricultural implements and other purposes. The tree is, however, important mainly on account of its fruit, which is the best of commercial myrobolans used for tanning in the Indian sub-continent.

**Climatic Requirement:** The tree shows fairly a wide adaptation to climate. Under natural conditions, it grows in localities with maximum and minimum temperatures from 37 to 48 degree and 1 to 15 degree respectively. Harad is an important species of the forests of Jammu, Himachal Pradesh, Punjab, Haryana and Uttarakhand Shivalik. It can withstand dry conditions prevailing in Kandi belts, where it is contributing a lot to the economic well being for the people by providing an additional income to the poor villagers ensures livelihood to the poor villagers.

**Soil Requirement:** Harad can be found on a variety of geological and soil formations. In Shivaliks, including Kandi belt, it grows on boulders and conglomerates having thin soil layer. It grows on clay and sandy soils also. However, the best growth of the 'Harad' can be found on loamy sand, sandy loam and loam soils. Plantation can be established through raised seedlings nursery during July-August. Generally, 1-2 years old plants with a ball of earth are planted for their better survival. Seed sowing in the nursery is done in the months of June or July. The fruit stones are sown after removing the hardened fleshy covering. Removal of hardened fleshy covering can be done by soaking the fruit stones in cold water for 24 hours followed by stratification in cow dung for about 5 weeks. Optimum spacing in nursery is 15 x 15 cm. Germination starts within 15 days after sowing the seeds and takes about 90 days to complete, with 60 per cent germination. The seedlings become ready for out planting after 1 or 2 years. The seedlings are

raised in nursery with clay-loam or sandy loam soils.

The bud grafting technique has been proved successful, especially in "Raja Harad" species. For this purpose, bud material can be had from the superior tree grown in the nursery for further experimentation and multiplication. Vegetative propagation is the only alternative to achieve the twin objectives of quality yield and germplasm conservation. The plus trees of *Terminalia chebula* can be multiplied through vegetative propagation and seed orchards can be established for producing genetically improved seed. Harvesting of fruits is done when they become ripe i.e., when their colour turns yellowish or reddish. Generally, the harvesting starts from middle of October to middle of November and continues upto end of December depending upon the climate. In cooler climate, the ripening of the "Harad" fruits can be prolonged upto March and they begin to fall soon after ripening. After harvesting, fruits are spread for sun drying in open.

Following steps are involved in processing of the fruits:

i) Sun drying: The harvested fruit are sun dried for 3 to 4 days to reduce the moisture content and to dry them.

ii) Grading: The fruits are graded according to their size, viz., small, medium and large.

iii) Roasting: The fruits are roasted in an iron pan (Karahi) having sand. The pan is kept over a "bhati", heated by burning firewood or brushwood. A wooden spatula is used to stir the fruits constantly in the pan while roasting process is going on. A sieve is used to separate the roasted fruits from the hot sand once they are sufficiently roasted. This stage is determined by change in colour of the fruit to golden brown. It usually takes 15 to 20 minutes to get roasted to the desired extent.

iv) Pressing with a gunny bag: The hot roasted fruits are pressed by hand with gunny bags. This helps in filling any holes on the surface of fruit and to provide a typical luster and strength to the fruit.

v) Spreading under shade inside the house and storage: The roasted and processed fruits are spread on the floor in the rooms within the houses for 5 to 7 days, and, thereafter stored in gunny bags.

**(The author is Ex-Associate Dean cum Chief Scientist (KVK) SKUAST-J).**

PROGRESSING J&K  
UMEED empowers rural women of J&K  
Dream of rural women to become economically independent realizing

able basis. Through UMEED, hundreds of women are not only scripting their success stories in Jammu and Kashmir but are motivating others to come out of poverty and become successful entrepreneurs. UMEED is immensely helping women entrepreneurs to exhibit and market their products.

JKRLM is turning the wheel of transformation for J&K women to become progressive and

self-employed entrepreneurs. The UMEED programme under JKRLM is a centrally sponsored scheme to encourage women to be self-dependent and self-sufficient. It also encourages women to make small savings so that their Self Help Groups (SHGs) eventually become bankable at reduced rate of interests. Manzoor Ahmad Bhat, 36, and Sarita Jan, 32, couple from Nambal area of Ashmugam started from

nothing. Now they have four employees working for them with the help of UMEED scheme. The couple is very grateful to government which helped them earn decently and live a respectable life as well as emerge as source of livelihood for others. Similarly, in village Marta of Rannagar, District Udhampur, many women directly benefited from the UMEED scheme and they established their own businesses.