



World
Soil Day

विश्व मृदा दिवस

The Relationship between Nature and Human



The Environment is polluted by selfish motives and attitudes which is dangerous for physical, mental, spiritual and social health of a human being along with the animals, birds, plants, flora and fauna.

Relationship between Nature and Human

- Nature is one great gift and it is simple, peaceful, blissful, cool and Playful.
- We get all our needs fulfilled through nature.
- The nature encompasses beautiful colors and shelters the living and nonliving in her lap.
- All those things which makes life possible for instance Water, Air, Fire, Light, Earth, Flora and Fauna etc., are integral part of the environment.
- The environment is one nurturing element which is a gift of nature.



The Mother Earth fulfills us with all attainments.

Nature Conservation

- The actual significance of Nature Conservation is to make it adaptable.
- The Nature and the being are interdependent.
- The Conservation of the nature is connected through our regular lives.
- Nature Protects us only if we make efforts for its conservation.

The Basis of Social Health



In Order to establish bliss, peace and fulfillment the collective consciousness must be healthy. The foundation of this health is the feeling of co-operation, satisfaction, self transformation and attitude of serving along with an awareness. We all need to inculcate these values to make this world Blissful.



Food and Agriculture
Organization of the
United Nations

OUR
SOILS
ARE IN
GREAT
DANGER



World Soil Day
5 December

- It takes hundreds to thousands of years to form a centimeter of soil.
- Most of the organic carbon is stored in Soil.
- Millions of organisms can live in 1 gram of Soil.
- 33% of global soil is already degraded.
- Soils combat to help adapt to climate change
- Food security can only be ensured through Healthy Soils.

Objectives.....

- **Raise awareness among common people about the profound importance of Soil for human life.**
- **Educate public about crucial role played by the soil in food security, climate change adaption and mitigation, essential ecosystem, poverty alleviation and sustainable development.**
- **Support effective actions for the sustainable management and protection of soil resources.**
- **Promote interest in sustainable soil management activities to develop and maintain healthy soils.**
- **Strengthen initiatives of Sustainable Yogic Agriculture Project.**

Soil Sustains Life....




Importance of Soils



**“How can I stand on the
ground every day and
not feel its power?
How can I live my life
stepping on this stuff
and not wonder at it?”**

William Bryant Logan
author, arborist



We need stronger footprints on / for soils!

Thank you for your attention

Importance of Soils

No Food Without Soil

— The Fresh Quotes —

“If You Want To Eat Food, Prevent Soil Erosion Dude.”

science of soil

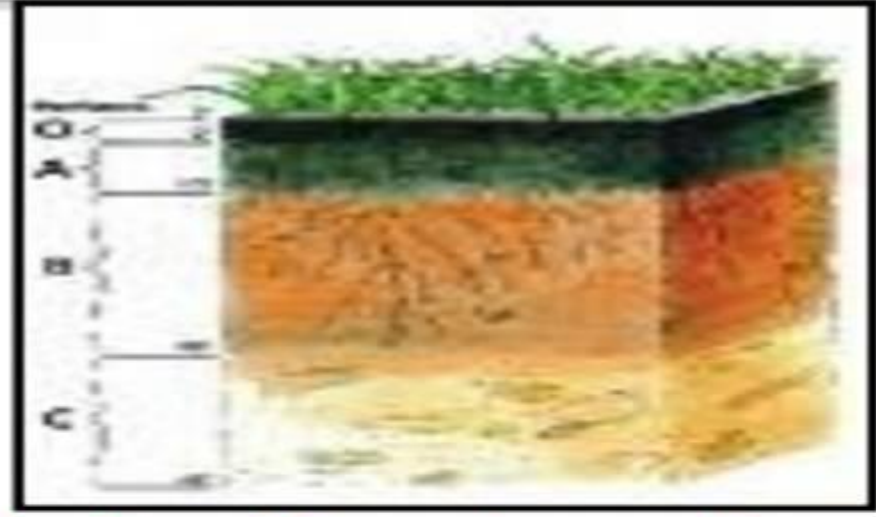
soil is

made of about
45% minerals
25% water
5% organic matter
25% air



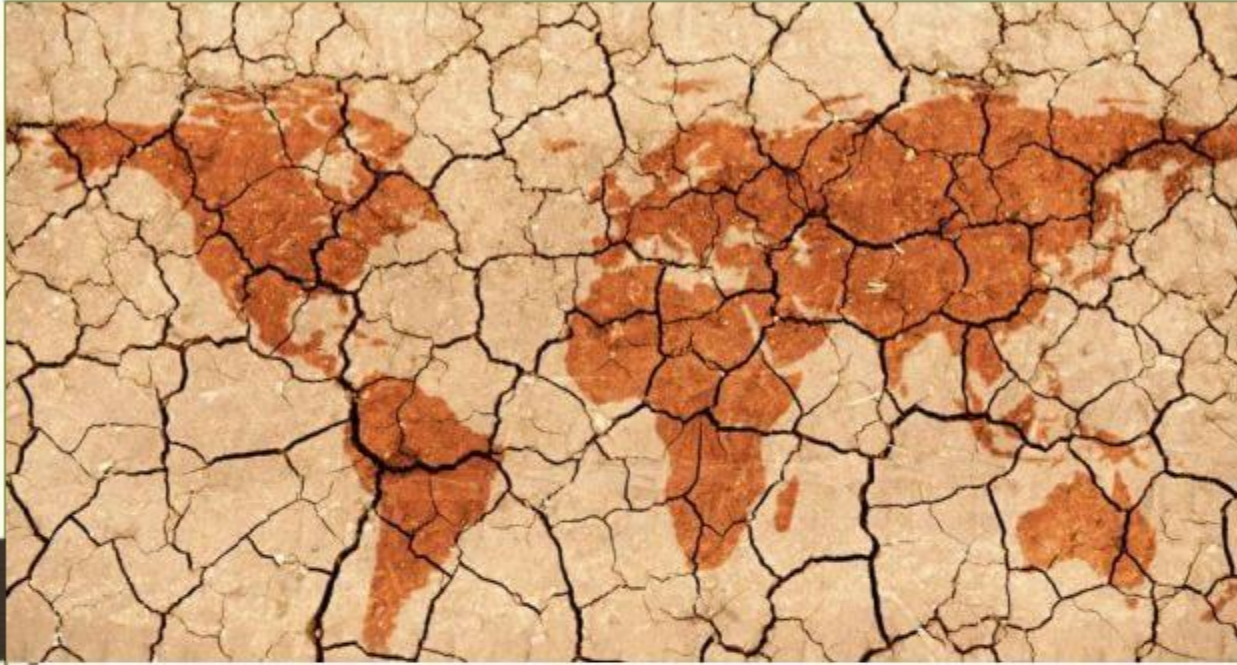
**No Soil,
No Us!**

— The Fresh Quotes —



Soil – Earth's living skin under threat from humanity





**Soil Says:
Save my life
Save Yourself**



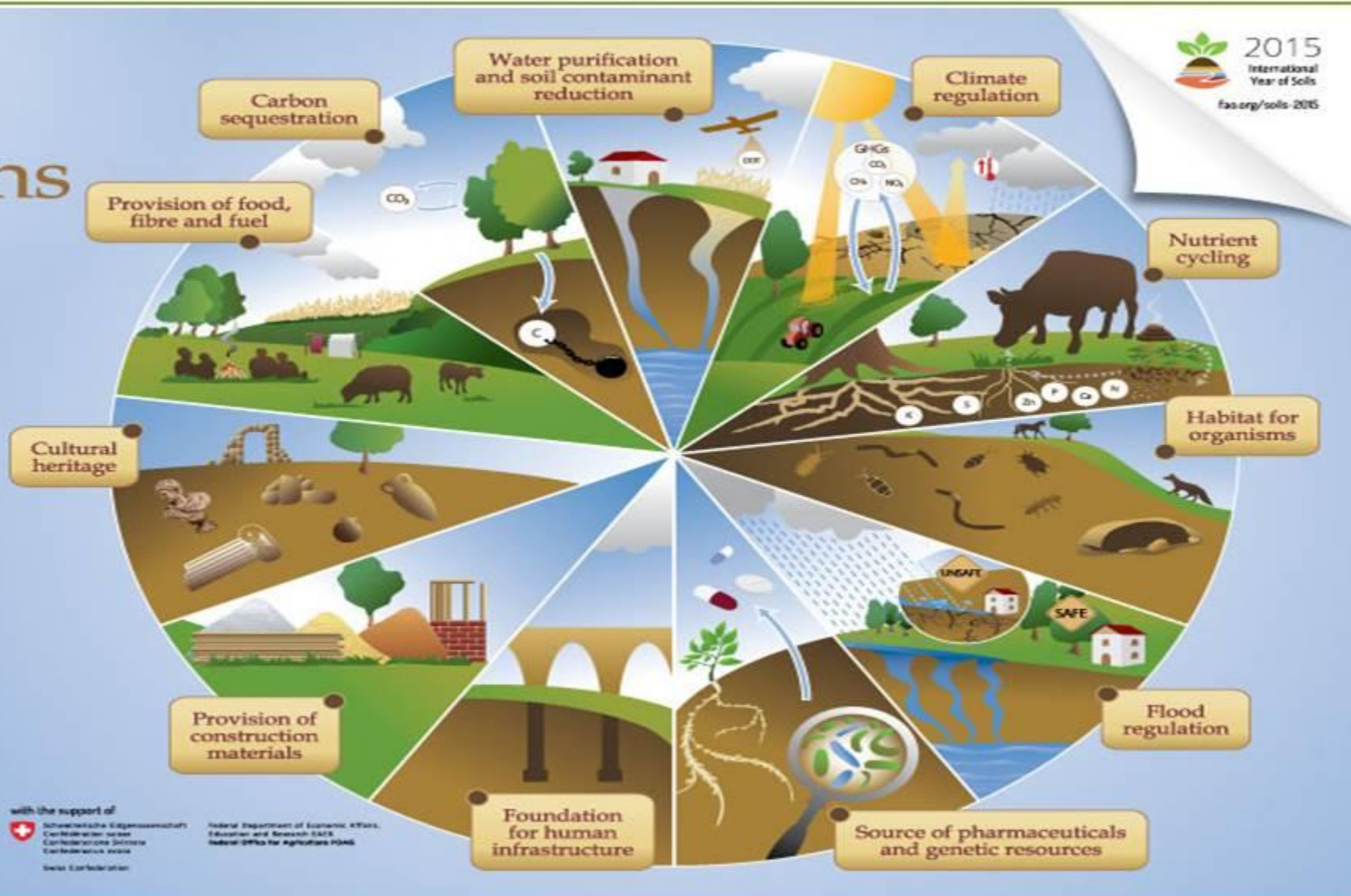
**The Secret is
in the Soil**



a nation that
destroys its
soils destroys
itself.

Soil functions

Soils deliver ecosystem services that enable life on Earth



Food and Agriculture
Organization of the
United Nations

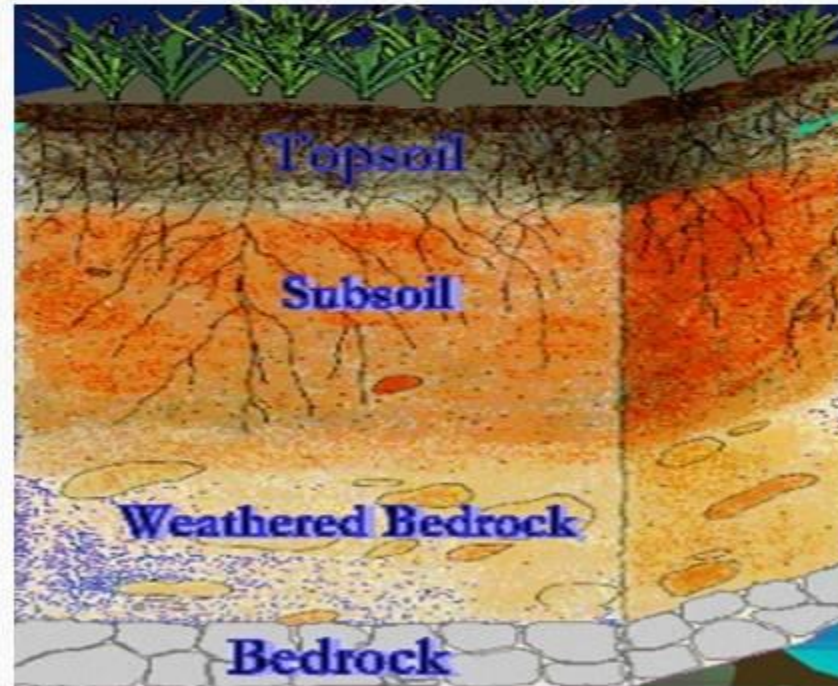


with the support of
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Confederation

Federal Department of Economic Affairs
Education and Research SAFF
Federal Office for Agriculture FOAG

Primary Layers of Soil

- Humus in the top Soil gives the rich brown colour



Soil fertility supports plant growth

Save the physical, chemical and biological properties of the Soil.....

- A good quality soil is both tillable and fertile.
- Provides suitable medium for seed germination and root growth
- Accepts, holds and supplies a balance of nutrients to plants
- Receives, stores and releases moisture for plant use
- Supports a variety of microorganisms that recycle nutrients through decomposition and help plants to resist disease.

Soils are the foundation of Agriculture....



2015
International
Year of Soils

SOILS STORE AND FILTER WATER

Soils improve food security and our resilience to floods and droughts



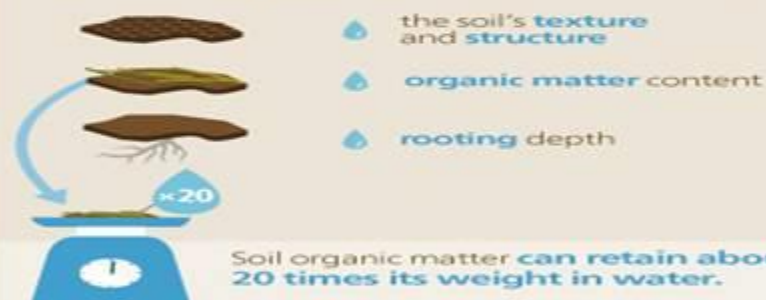
Healthy soils with a high organic matter content can **store large amounts of water**. This is crucial for maintaining food production while also improving resilience to floods and droughts.



What is soil moisture?

Soil moisture content is the amount of water in the soil (by weight).

The maximum amount of water that a soil can retain depends on:



Soil moisture and food security



Water is the "lifeblood" of agriculture — improved soil moisture management is **critical** for sustainable food production.



Inhibiting a soil's capacity to accept, retain, release and transmit water **reduces** its productivity.

SOIL POLLUTION

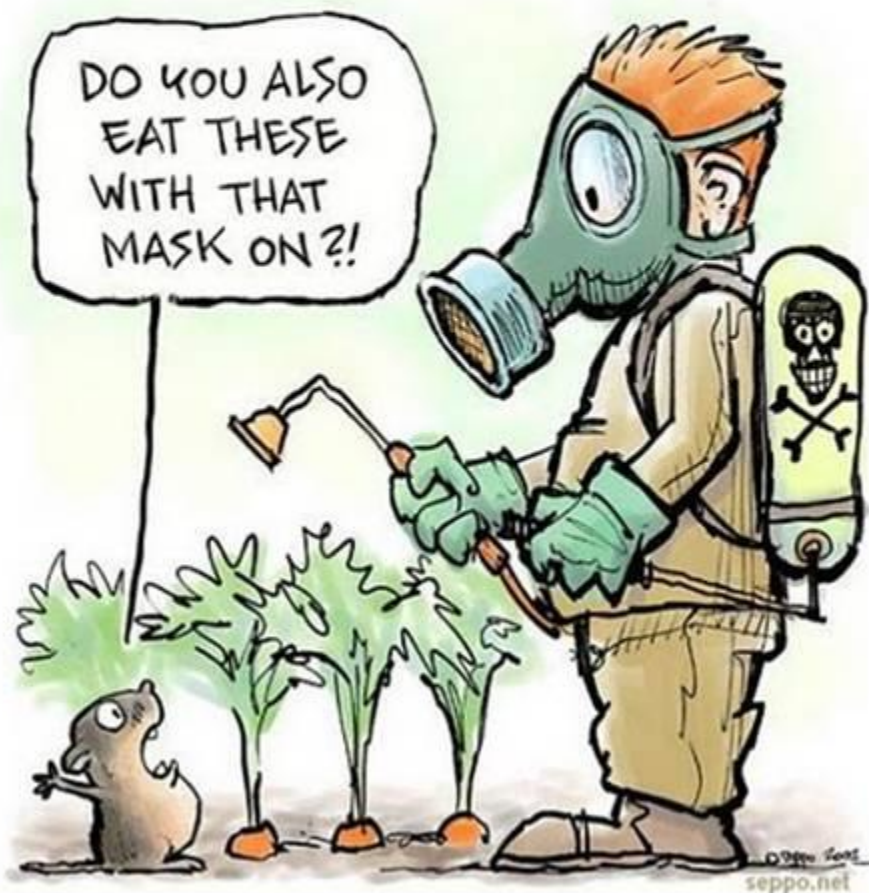
- Soil pollution is defined as the change in physical, chemical and biological conditions of the soil through man's intervention resulting in the degradation in quality and productivity of the soil.

11/22/2013

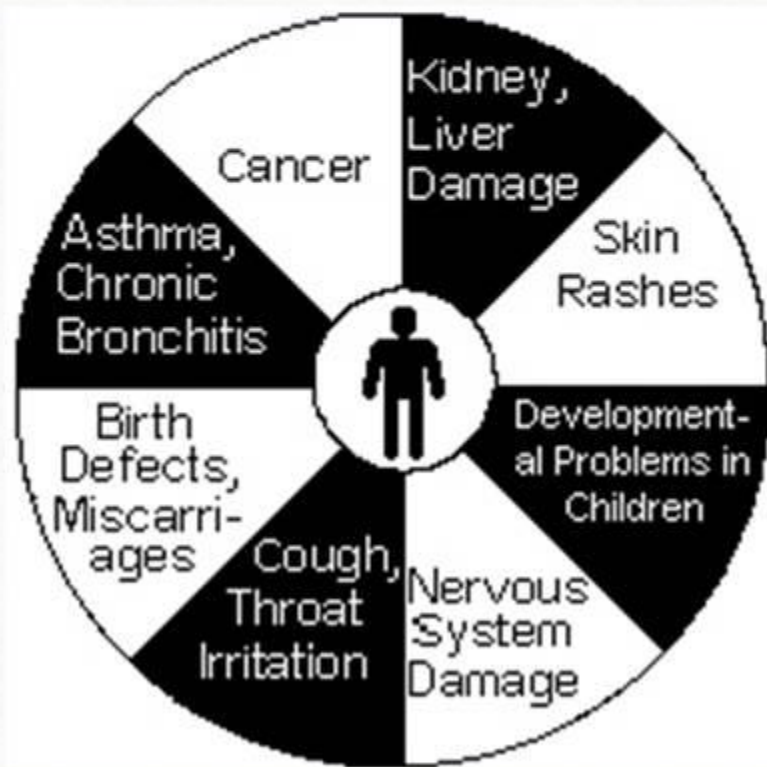
Harmful Effect Of Soil Pollution



We need Healthy Soils for Wealthy life.



Health Hazards...



Loss of Soil Organic Matter

- Soil Erosion
- Intensive Cultivation
- Lack of Organic manure addition
- Removal of Stock /burning





Food and Agriculture
Organization of the
United Nations

Soil organic carbon (SOC) loss

Decline of organic carbon stock in the soil affects its fertility status and climate change regulation capacity.

Approximately 1 417 billion tonnes of SOC are stored in the first meter of soil and about 2 500 billion tonnes at two meters soil depth. The global loss of the SOC pool since 1850 is estimated at about 66 billion tonnes (± 12), mainly caused by land use change.

STATUS OF THE WORLD'S SOIL RESOURCES - MANAGEMENT



World
Soil Day
2016



GLOBAL SOIL
PARTNERSHIP

There is more organic carbon
in the soil than there is
in the vegetation
and atmosphere
combined



SUSTAINABLE SOIL MANAGEMENT FOSTERS
 CO_2 SEQUESTRATION, BOOSTS SOIL HEALTH
AND CONTRIBUTES TO ACHIEVING THE SDGs,
ESPECIALLY CLIMATE CHANGE ADAPATATION AND MITIGATION



Soil organic carbon loss

Condition



Trend



Improving

Deteriorating

Variable

Stable

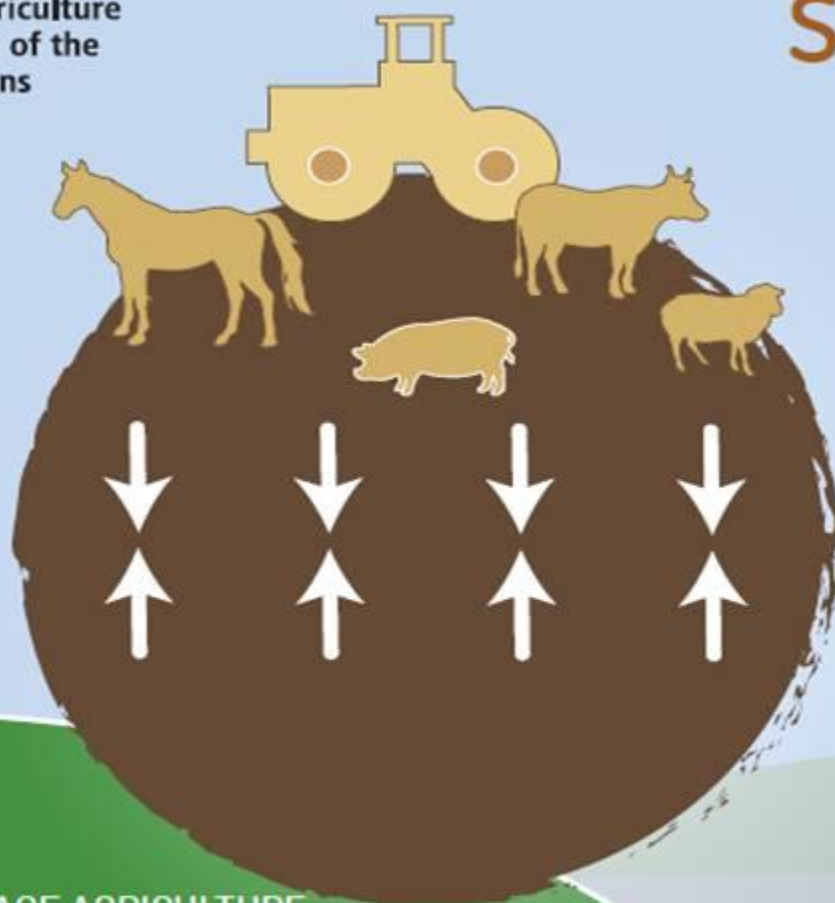
Deterioration of Soil Structure

- Soil Erosion – Breakdown of Soil Aggregates
- Physical Degradation – Use of heavy implements
- Chemical Degradation – Irrigation with Poor Quality Waters
- Intensive Mono – Crop Cultivation





Food and Agriculture
Organization of the
United Nations



MINIMUM-TILLAGE AGRICULTURE
IS AMONG THE TOP OPTIONS TO REDUCE
TILLAGE COSTS, CONSERVE SOIL AND WATER,
INCREASE SOIL ORGANIC CARBON POOLS,
AND REDUCE NET CO₂ EMISSIONS

Soil compaction

Increase in density and a decline
of macro-porosity in soil that impairs
soil functions and impedes root
penetration and water and gas
exchange.

Soil compaction can reduce crop yields
by as much as 60%.

Agricultural mismanagement (80%)
and overgrazing (16%) are the two
major causative factors of human
induced soil compaction.

SOILS: STATUS OF THE WORLD'S SOIL RESOURCES - FAO 2006



World
Soil Day
2016

4% of the
global land area
is estimated
to be compacted



GLOBAL SOIL
PARTNERSHIP



Soil compaction

Condition



Trend



Improving

Deteriorating

Variable

Stable

Soil Contamination

- Indiscriminate use of Pesticides and Inorganic Fertilizers
- Accumulation of Solid waste
- Radioactive substances from Nuclear plants
- Indiscriminate discharge of Industrial effluents on land and Water bodies



CAUTION



RADIOACTIVE



Food and Agriculture
Organization of the
United Nations

Soil biodiversity loss

Decline in the diversity of organisms present in soil that affects multiple ecosystem functions, including plant diversity, decomposition, nutrient retention and cycling, plant and animal health, soil carbon sequestration and greenhouse gas emissions.

SOURCE: STATE OF THE WORLD'S SOIL RESOURCES - FAO REPORT



Loss of soil biodiversity

PRESERVING AND BOOSTING SOIL BIODIVERSITY
IS IMPERATIVE TO ENHANCING SOIL HEALTH,
THUS ENSURING A PRODUCTIVE FOOD SYSTEM,
IMPROVED RURAL LIVELIHOODS AND A HEALTHY ENVIRONMENT

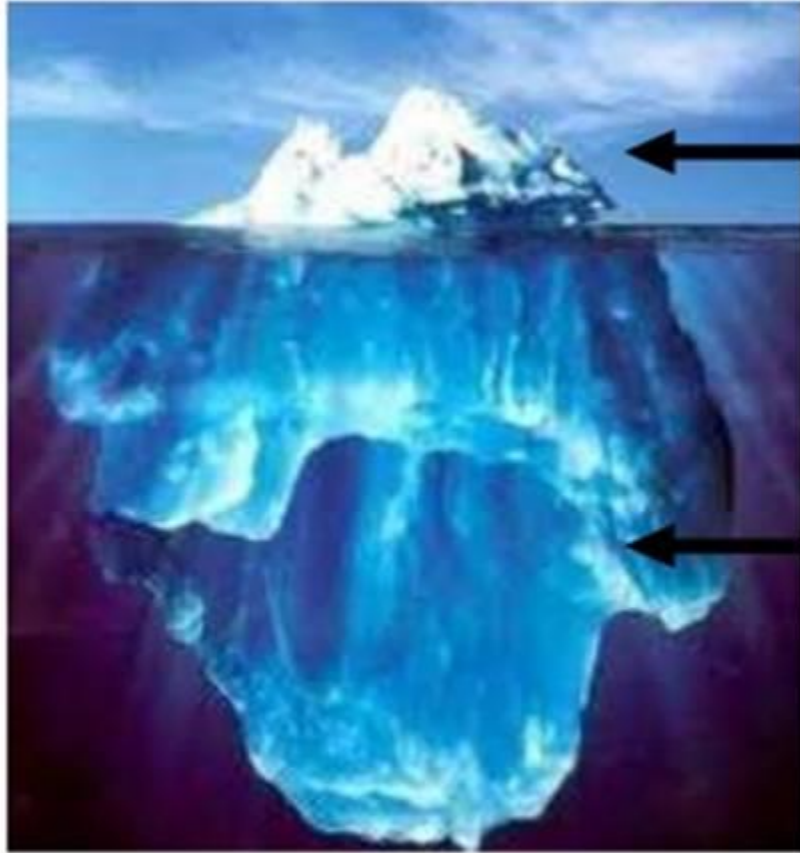
Soils host
approximately
a quarter
of our planet's
biodiversity



World
Soil Day
2016



GLOBAL SOIL
PARTNERSHIP



**Aboveground
biodiversity**

**Belowground
biodiversity**

Soil has life.....

In 1g of soil = up to 1 billion bacterial cells/tens of thousands of taxa, up to 200 m of fungal hyphae, and wide range of mites, nematodes, earthworms, and arthropods.



Food and Agriculture
Organization of the
United Nations



SUSTAINABLE SOIL MANAGEMENT PRACTICES
SUCH AS INCORPORATING THE USE OF LIME CAN
BE DEVELOPED TO IMPROVE SOIL pH, PRESERVE
SOIL PROPERTIES AND BUFFER SOIL ACIDITY

Soil acidification

Lowering of the soil pH caused by the buildup of H^+ and Al^{3+} ions in the soil and the leaching of base cations such as Ca^{2+} , Mg^{2+} , K^+ and Na^+ .

The main causes of soil acidification are long term rainfall, draining of potentially acid sulphate soils, acid deposition, excessive application of ammonium-based fertilizers, deforestation and land use practices that remove all harvested materials.

Topsoil and subsoil acidity ($pH < 5.5$) affect around 30% and 75% respectively of the total ice-free land area of the world

SOURCE: STATE OF THE WORLD'S SOILS REPORT - MAIN REPORT



World
Soil Day
2016



GLOBAL SOIL
PARTNERSHIP



Soil acidification

Condition



Trend



Improving

Deteriorating

Variable

Stable



Food and Agriculture
Organization of the
United Nations

Soil salinization and sodification

Increase in water-soluble salts in soil, including potassium, magnesium, calcium, chlorine, sulphate, carbonate, bicarbonate (salinization) or high sodium content (sodification). It negatively affects plant growth, reduces crop yields and can make soils unproductive.

SOURCE: STATE OF THE WORLD'S SOILS REPORTS - MAIN REPORT



World
Soil Day
2016



GLOBAL SOIL
PARTNERSHIP

USD 441/ha
is the estimated
annual cost
of salt-induced
land degradation



THE SOIL SALINITY THREAT CAN BE CONTAINED
BY DIRECT LEACHING OF SALTS, PLANTING SALT
TOLERANT VARIETIES, PHYTOREMEDIATION, CHEMICAL
AMELIORATION AND/OR USE OF ORGANIC AMENDMENTS



Soil salinization and sodification

Condition

Very poor

Poor

Fair

Good

Trend

Improving

Deteriorating

Variable

Stable

The great challenge for the future will be increasing food production with less water.

As most smallholder farmers in developing countries rely on rain-fed agriculture, improved soil moisture optimization and management is crucial.

Over cultivation, overgrazing and deforestation strain soil and water resources by reducing topsoil and vegetation cover, and lead to dependence on irrigated cropping.



Meeting food security targets requires sustainable agricultural policies that ensure improved soil quality and water retention.



Improving soil moisture

Many sustainable agricultural and land management practices can improve soil moisture retention:

Residue covers, cover crops and mulching

Conservation agriculture

Knowledge-based precision irrigation

Conservation tillage

Capture of runoff from adjacent lands

Efficient use of water, reduced use of pesticides and improvements in soil health can lead to average crop yield increases of

Zero-tillage

Rainwater harvesting

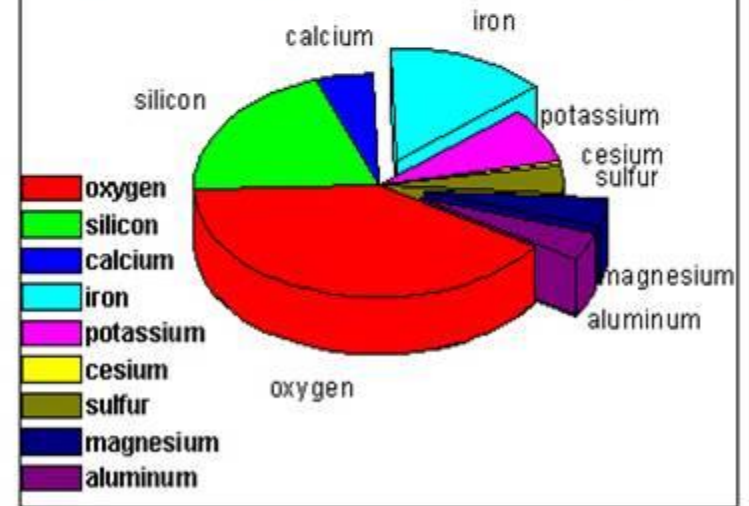
79% ↑

In an era of water scarcity, soils are fundamental for its appropriate storage and distribution.

16 Necessary Elements for Plants Life

- Macro Nutrients: Carbon, Hydrogen, Oxygen, Nitrogen, Phosphorus, Potash, Calcium, Magnesium
- Micro Nutrients: Zinc, Boron, Copper, Iron, Manganese, Molybdenum and Chlorine.

Proper balance of all these elements indicates productivity of the Soil



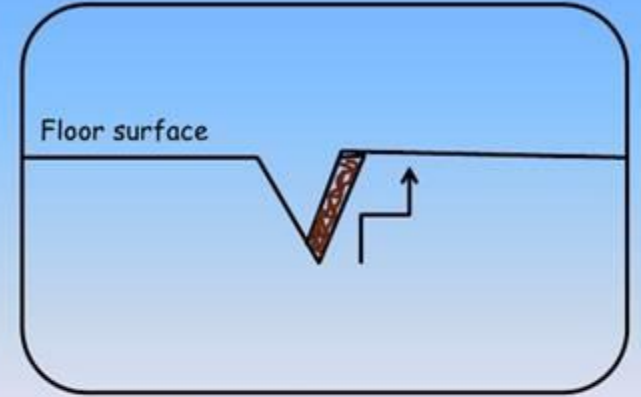
SOUL TESTING & SOIL TESTING



Soil Testing

- It plays a very important role in diagnosing the physical, chemical and biological properties of the soils by providing the conditions of available nutrients which indicates the fertility and productivity of the soils. It Provides best fertilizer recommendations.
- It also helps in assessing the capability and suitability of land for agriculture.

Dig each pit as shown in the figure. Take soil from the area shown in 'brown'.

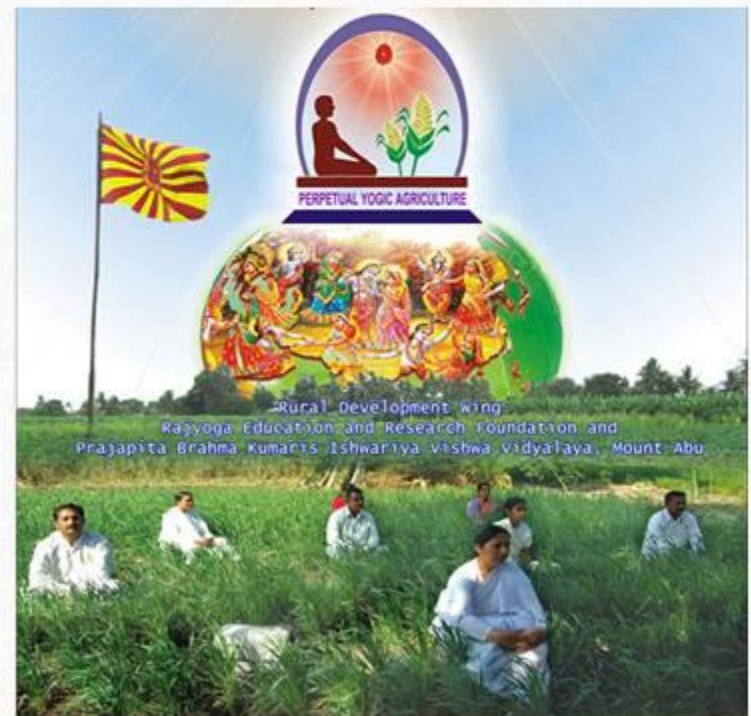




Measures to control Soil Pollution

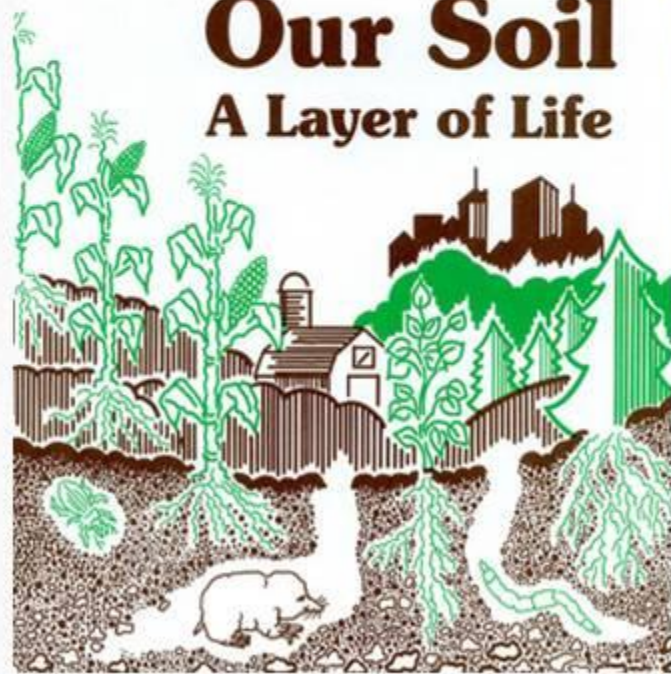
Following Practices of Sustainable Yogic Agriculture:

- Organic Pest Management Practices
- Consumption of Organic fertilizers , avoid Chemical fertilizers
- Application of Gypsum and Organic Composts in Saline lands
- Avoid Deforestation - choose Afforestation
- Stop burning crop residues and mulching
- Encourage Crop Rotation



Sustainable Soil
Management should be
priority to all....through
Sustainable Yogic
Agriculture

Our Soil A Layer of Life



THINGS YOU CAN DO TO IMPROVE YOUR SOIL HEALTH

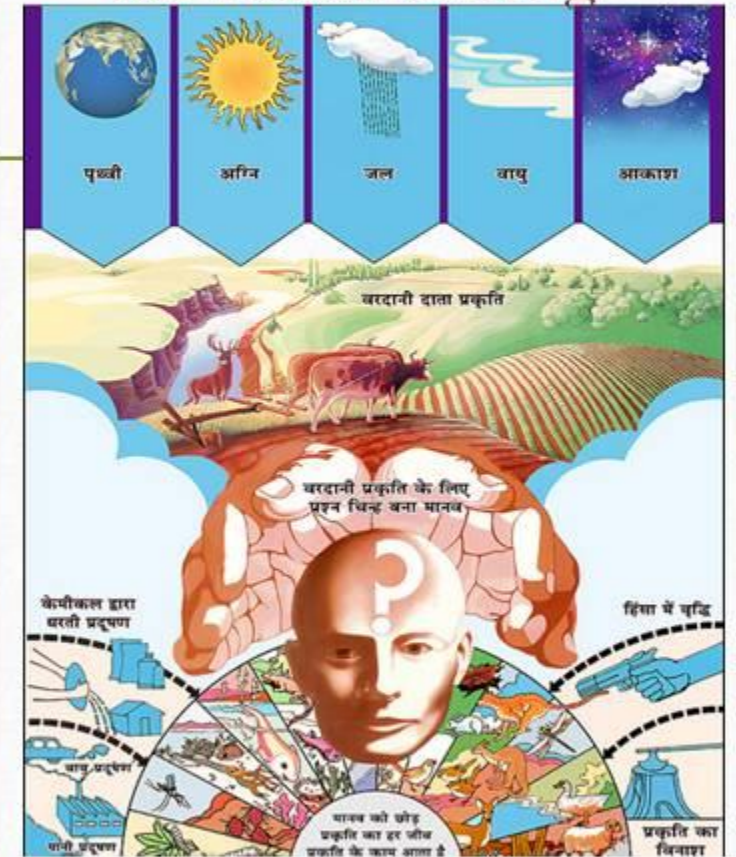
- ★ increase organic matter in soil through increasing groundcover & vegetation, applying mulch & composts
- ★ encourage biodiversity – above & below the soil
- ★ support & protect soil microbial ecologies, including fungi
 - ★ use biological-based fertilisers
- ★ use vegetation intelligently within managed landscapes to protect soils from the effects of wind & salinity
- ★ aim to have 100% groundcover, 100% of the time
 - ★ practice minimal tillage & retain crop stubble
 - ★ use time-controlled planned rotational grazing
- ★ reduce dependence on increasingly expensive fossil fuels & non-organic fertilisers & bio-cides

Integration of Nature and Thoughts

- The thoughts generated by the human intellect vibrates in the form of rays into the surroundings.
- If the thoughts are pure, powerful and creative, the attitude formed is pure and holistic and the environment is created in the same way.
- The Human acts according to the thought patterns and hence creates a personality. The meditation helps us to purify the thoughts.
- We all have the virtues and the powers and the same starts to reflect in our actions resulting into positivity and welfare.
- The transformation of thoughts, attitudes, vision and the action results in an elevated environment.
- The human being aims at creating a heaven out of hell by creating peace and happiness in the world. Meditation is the practice through which the attitude and the vision could be purified. This results in a blissful and heavenly world.

The five elements are always blissful and prosperous whereas the human is subjected to violence and pollution.

The Generous Nature and the Human Being



Transformation of Nature through Attitude

- In order to attain success, Vibrations are spread through the attitude which creates a powerful environment.
- The good wishes in the form of powerful thought can be practiced in Rajayoga. The Nature will be transformed through the power of Rajayoga.



Sustainable Yogic Agriculture





What is Sustainable Yogic Agriculture?



- Now-a-days the chemicals are used to destroy the pesticides and to enhance the productivity, however it results in negativity and the harmful effect of pesticides remains in the crops. This results in unhealthy and toxic food. The Sustainable Yogic Agriculture is the need of the hour.
- Through the powers of Almighty and the vibrations of the positive thoughts, the crop productivity can be enhanced while being able to maintain the qualitative aspects.
- The techniques of Sustainable Yogic Agriculture allows the farmers to produce healthy, pure and poison-free crops. The nature and environment becomes pure and blissful. Crops produced are relatively nutritious and satvik.

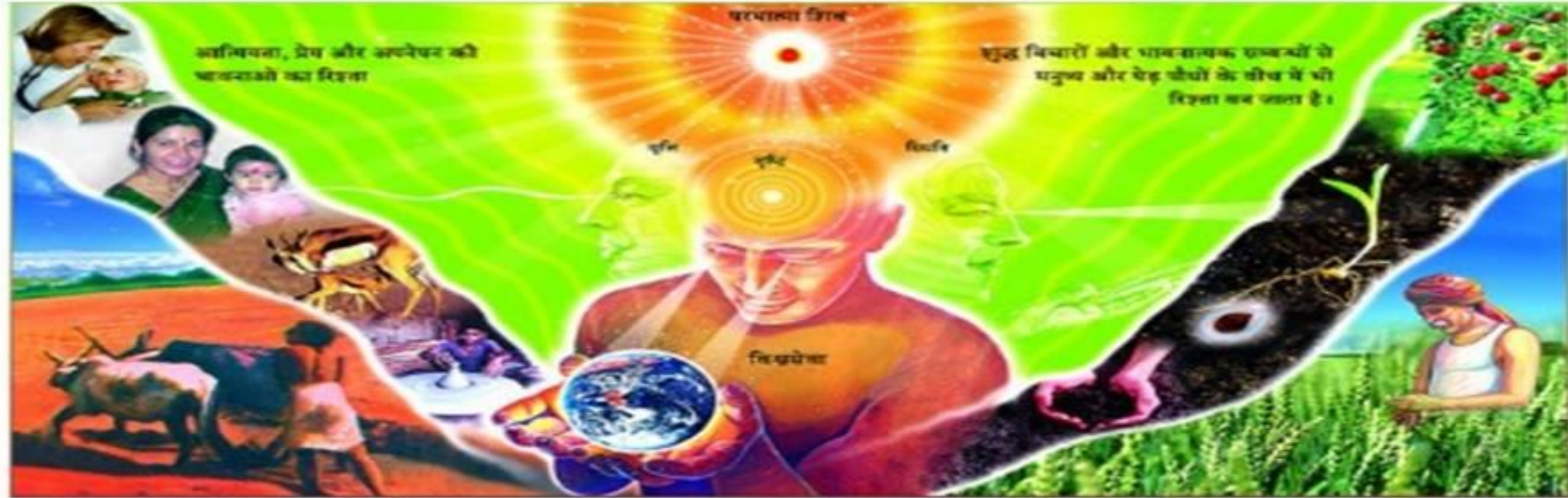
Why do we need Sustainable Yogic Agriculture ?

- It has been believed since ancient times that food has an impact on mind. Most of the diseases are psychosomatic and also there is a saying “As you eat so, shall you become”. So, food has a huge importance to keep us stress-free, addiction-free and in building our character. Every human being aspires to remain peaceful and to live with a satvic attitude. In order to control the mind, we need to have an attention on what we eat. This helps to achieve the aforesaid goals.
- We need to re-think about the method of crop production.

Why do we need to combine farming with Yoga?

- Along with the five elements, plants, flora and fauna there is an absolute need to have an affectionate connection for a blissful life. Hence we need the spiritual powers which are received through Rajayoga Meditation.
- It is through the Rajayoga Meditation we can increase the fertility of the Soil, healthy and resilient crops. Moreover we can control various kinds of pests and make the crops satvik.

How to Experiment with Rajayoga Meditation ?



Creation of elevated feelings, through a connection with almighty. Just like a tree is grown out of a seed. Similarly, the seed of pure and powerful thoughts create the aura which impacts the people, matter, plants, animals, flora and fauna.

What is Rajayoga Meditation ?




The Simple definition of Rajayoga is Remembrance. One needs to imagine himself as a point of light and have a loving connection with almighty. This is how one can experience all the attainments to become sovereign.



The first stage of Rajayoga is Soul Consciousness. Three main faculties of the Soul are:

- **Mind** – Power to create the thoughts.
- **Intellect** – Power to decide with conscience.
- **Resolves** – The effect of **Karma** on the consciousness.

What is Rajayoga Meditation ?



The Soul is basically an embodiment of knowledge, purity, peace, love, bliss, happiness and power. The soul comprises of divine virtues and almighty is the source of all these virtues and powers.

When we fix our consciousness as soul and remember almighty we start receiving his qualities and powers. The Soul starts to experience fulfillment.

The vibrations of these qualities and powers start radiating which is then transmitted to the nature and the beings.

Effect of Rajayoga Meditation on Nature

When the soul starts experiencing the power in Rajayoga Meditation, the Vibrations emanated from the soul transforms the environment.



It is in such concentrated state that every human being, matter or the plants are effected by this energy. These powerful vibrations energizes them.



This experiment fortifies the soil while improving the microbial activity where plants become healthy and resilient .

Experimentation of Rajayoga Meditation on Crops

- First and foremost, we shall give powerful vibrations of almighty to all the five elements of nature – earth, water, air, fire, ether along with all the planets and stars. It is with their co-operation that we succeed in improving the plants as well as crop productivity.
- We shall give vibrations to the piece of land to be used for production and then make the seeds healthy through powerful vibes. This energizes the seeds in order to grow resilient crops.
- It is after sowing the seeds, during the growth of plants, during flowering and fruiting stage that we must give positive vibrations to the soil, seeds, plants and crops everyday.
- In order to protect the crops from pests, diseases, birds and animals we shall give powerful vibrations in the entire farm. These vibrations creates a powerful shield around the farm to protect it.

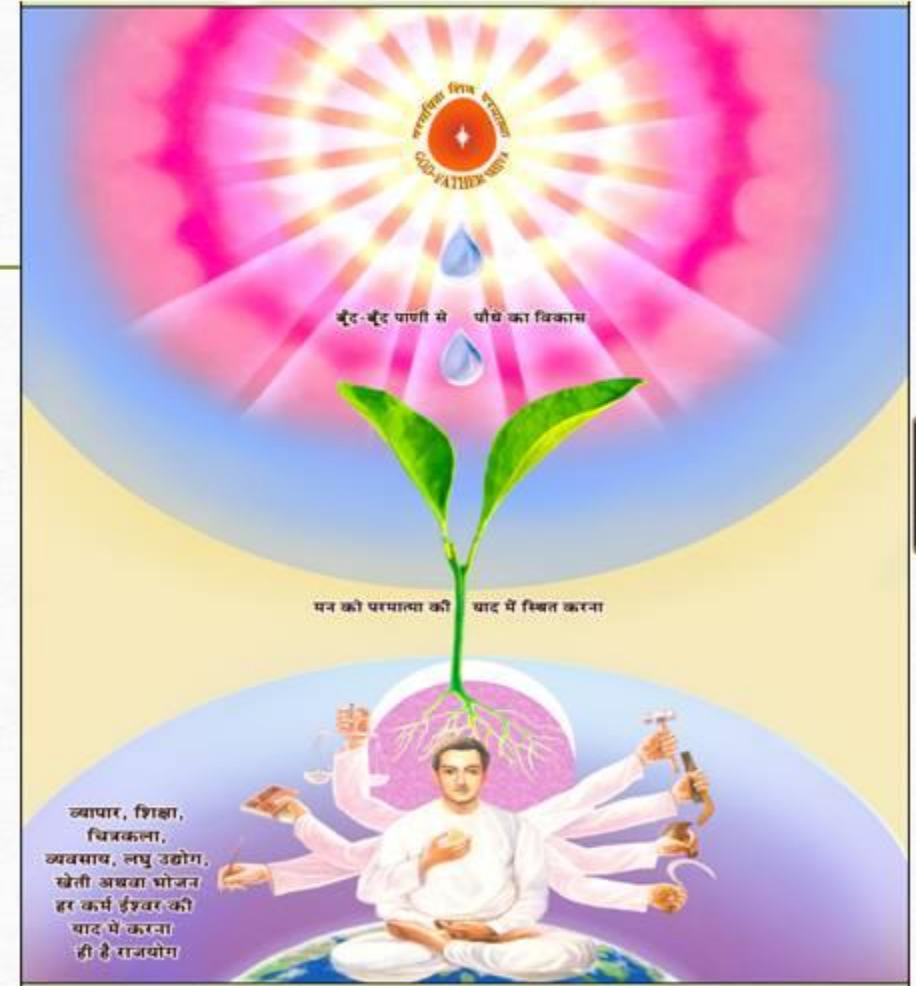
How to experiment with Rajayoga Meditation ?

- Vibrations emanated from the intrinsic qualities of the Soul are spread into the soil and the crops for improving their quality.



Divine Virtues

- Divine Virtues: The land and the crops are given vibrations while experiencing the unlimited source of divine virtues and being concentrated in his remembrance. This food positively impacts the human mind. As we say “As the food, so is the mind, so is the body”.
- To swing in the supersensory joy, the plants, flowers and fruits spring with every drop of water.



Join hands to protect our Soils

We could do better



With Sustainable Yogic Agriculture