1.1. What is Saline Water?

Saline Water is water having high salt contents. The presence of dissolved solids in water may affect its taste. High TDS levels (>500 mg/litre or 500ppm) result in excessive scaling in water pipes. Salinated water is not suitable for irrigating crops though some industries also make use of saline water, such as mining and thermoelectric-power.

- Fresh water - Less than 1,000 ppm
- Slightly saline water - From 1,000 ppm to 3,000 ppm
- Moderately saline water - From 3,000 ppm to 10,000 ppm
- Highly saline water - From 10,000 ppm to 35,000 ppm
- Ocean water contains about 35,000 ppm of salt

1.2: What Are Total Dissolved Solids?

- "Dissolved solids" refer to any minerals, salts, metals, cations or anions dissolved in water. This includes anything present in water other than the pure water (H_20) molecule and suspended solids. (Suspended solids are any particles/substances that are neither dissolved nor settled in the water, such as wood pulp.)
- In general, the total dissolved solids concentration is the sum of the cations (positively charged ions) and anions (negatively charged ions) in the water.
- Parts per Million (ppm) is the weight-to-weight ratio of any ion to water.
- A TDS meter is based on the electrical conductivity (EC) of water. Pure H_20 has virtually zero conductivity. Conductivity is usually about 100 times the total cations or anions expressed as equivalents. TDS is calculated by converting the EC by a factor of 0.5 to 1.0 times the EC, depending upon the levels. Typically, the higher the level of EC, the higher the conversion factor to determine the TDS.

NOTE - *While a TDS meter is based on conductivity, TDS and conductivity are not the same thing.*

1.3: Where Do Dissolved Solids Come From?

- Some dissolved solids come from organic sources such as leaves, silt, plankton, and industrial waste and sewage. Other sources come from runoff from urban areas, road, salts used on street during the winter, and fertilizers and pesticides used on lawns and farms.
- Dissolved solids also come from inorganic materials such as rocks and air that may contain calcium bicarbonate, nitrogen, iron phosphorous, sulfur, and other minerals. Many of these materials form salts, which are compounds that contain both a metal and a non-metal. Salts usually dissolve in water forming ions. Ions are particles that have a positive or negative charge.
- Water may also pick up metals such as lead or copper as they travel through pipes used to distribute water to consumers.

Source: Saline-water resources of North Dakota, USGS Water Supply Paper 1428, 1958.

1.4: Does salty water affect the growth of plants?

Plants have to face problems when their roots are bathed in salty water: they can actually die of thirst! This happens because the salt interferes with the way in which plant roots take in water. Plants rely on a process called osmosis to get water from the soil. The tissue around the tiny hairs on plant roots allows water to pass through easily (it is very permeable to water) but it only allows salts and other chemicals through very slowly (it is less permeable to these). When water in the soil is fresh, it tends to flow into the roots, and then is sucked up the stem to the leaves. When the water in the soil is salty, water tends to be sucked out of the roots into the soil.

Salt affects the growth of many plants, but not all. The higher concentration of salt outside of the plant cells in the soil causes water to move outside of the cells to try and equalize the concentration. Some root cells of plants that do not tolerate salt may die, and if bad enough the plant will die. The damage gives the plant a burnt look, often on the leaf edges first. The same thing happens with too much of any mineral.

Some types of plants, such as mangrove trees, can tolerate higher levels of salt and not be damaged. Their cells have a high concentration of salt already in them so the water doesn't move out. Some even separate salts from the water and excrete it through their leaves, roots, and branches.

1.5: What is magnetic treatment of Saline water? Or What changes Magnetic treatment brings in saline water? Or how saline water is converted into cultivable water?

Facts and benefits of research on magnetic water treatment can be explained by a phenomenon called "Magnetic-Hydro-magnetic resonance" under the action of Lorentz's force. The key parameters that influence the magnetic treatment are the velocity of water flow in the pipe and the intensity of magnetic induction.

According to Faraday’s Law, charged particles moving through a magnetic field with a velocity perpendicular to the field create a localized electrical field perpendicular to both the particle velocity and the magnetic field. If the ion concentration, velocity and magnetic strength are sufficiently large, the Lorentz effect can be observed. This theory simply states that when a conductive fluid is passed through a magnetic field at right angles, the field creates an induced electrical current in the conductive fluid, effectively orienting the bipolarity of the water in the direction of the electron field. This in turn disrupts the “solvating cage” structure of water surrounding dissolved ions and suspended crystals. The theory also helps to account for the widely observed reduction of surface tension of the water.

The water, passes through Mag-device, is influenced by the Lorentz force ($F_L = q \cdot [V \cdot B]$), which is in resonance with the oscillations of water molecules and its clusters (associates). This leads to a change in the water structure. This is a phase transition, which alters the water properties, in particular, solubility, ion hydration, viscosity, density, surface strength, etc.

Magnetically treated saline water undergoes several changes in its physical properties. Three main functions for Magnetic treated water in soil are:

1 - Removal of excess soluble salts,
2 - Lowering pH values of soil layers,
3 - Dissolving slightly soluble components such as phosphates, carbonates and sulfates.

The salts suspended in the saline water are dissolved in the water because of increased solubility of water after magnetic treatment. But salts have now different morphology. So, their presence does not interfere with osmosis and plants growth. Because of the enhanced availability and mobility of ions in the water, plants grow better. Magnetically treated saline water also improves the texture of soil by removing salts deposits in the soil capillaries. Thus it improves the drainage system of soil.

1.6: What is the impact of Magnetic treatment on Saline Water?

The Mag-Green technology has proven to make use of lower quality waters (effluent and saline water) more sustainable and overall will augment water supplies for agricultural purposes. In general, the use of magnetic technology will help improve long-term viability of the agricultural industry and sustainable economic development in both urban and rural areas.
Impact of Magnetically treated Saline water can:

- Traditionally unsuitable salty water can be efficiently used for irrigating crops
- Removal of excess soluble salts
- Lowering pH values of soil layers
- Dissolve slightly soluble components such as phosphates, carbonates and sulfates
- Reduce clogging & salt accumulation in nozzles in Drip & Sprinkler Irrigation Systems
- Reduce chemical usage
- Minimize the salinity effect and cleanse soil
- Sustain the health of the environment

1.7: How does crop production or plant growth increase by using magnetic water?

Growth, development and plant productivity are usually affected by photosynthetic activity. Magnetic field exposure increases the amount of chlorophyll. Chloroplasts have paramagnetic properties which means that magnetic field of magnetic moments of atoms in them are affected by magnetic field of water and oriented downwards the fields' directions.

Magnetic field by producing Lorentz force affects spin of electrons, so, it affects chemical reactions of plants, photochemical activity, respiration ratio, enzyme activity, etc. Magnetic field affects G_1 phase of RNA and protein synthesis. As it alters the electron spins of molecules especially ionic forms, so, magnetized water is known to affect radical pair recombination and they may increase the concentration of oxygen free radicals in living cells. Increasing the concentration of free radicals creates oxidative stress, enhances stress response and some

biological reactions. The reason of the increase in the oscillating of free radicals is the transformation of the radicals into more stable and less reactive forms under magnetic field energy. Its mean magnetic water reduces oxidants formation.

Plants oxidases are important in diverse cellular functions such as lignin and hormone biosynthesis and detoxification of Hydrogen peroxide.

1.8: How can one safely use saline water for irrigation?

Modestly saline water can often be used successfully in the right soil x crop combination without hazardous long-term effects on the crops or soils. However, certain conditions need to be met: salinity of either the irrigation water or soil solution increases (with prolonged crop water use and through the irrigation season), the volume of irrigation water applied should be progressively increased.

1.9: What are common problems or difficulties with the use of saline water for irrigation?

Saline water reduces plant growth, making irrigation with it risky if not managed properly. With time, salts carried in saline water may accumulate in the root zone to concentrations high enough to affect crop growth by reducing availability of water. Just 1 acre-foot of irrigation water of moderately saline quality will introduce 1.8 tons of salt per acre of land.

1.10: what is the effect of Mag-Green Technology on Vegetable Production under Drip Irrigation System?

A study was conducted in Sudan to evaluate the effect of Mag-Green Technologies on vegetative production under Drip irrigation. The emission uniformity (EU) was determined for drip literal line, with and without magnetic device. For non-magnetized lines, EU was found to be 82% where magnetized line gave EU of 90%. This clearly indicates that magnetic treatment of water improves the performance of emitters (reduces the effect of clogging and salt accumulation).

Magnetizing of irrigation water and plants seeds in Drip irrigation resulted in better establishment of plant growth (particularly, plant density, leafs numbers and sizes, roots numbers end lengths).It can be conclude that magnetizing of irrigation water and plants seeds may lead to saving in amount of irrigation water coupled with improving in crop production.

Importance of Mag-Green Technologies in Drip & Sprinkler Irrigation Systems:

- No blockage of nozzles
- No scaling in pipes
- Increase in water flow
- Increase efficiency of system

1.11: Why do fertilizer need of plants is reduced by using magnetically treated water?

Magnetic treatment gives two fold benefits. It not only breaks larger water clusters but it also structures water. So, more water molecules are available for nutrients hydration and mobility. It leads to enhancement of nutrient mobility in soil, increase in extraction and uptake of P, K, N and Fe by plants. Magnetic treated water increases the efficiency of added fertilizers by completely dissolving them and makes them available for plants and will help to cut down fertilizer requirements.

1.12: Where the salts go after magnetic treatment of water?

The magnetic treatment of water increases the solubility of water. It results in dissolution of more salts. The TDS level of water is increased. The salts remain in the water but due to magnetic treatment of water, their morphology, availability and mobility are changed.

1.13: Is there any experimental evidence of magnetic field influence on growth of plants?

A plant's metabolism contains 90-95% of water which is a diamagnetic compound and the rest contains several Para, Ferro & diamagnetic metals and non-metals in minute forms. So, if a plant is placed in an oscillatory magnetic field, the Para & ferromagnetic metals oscillate in their magnetic moment along the field by tracing the hysteresis curve according to Currie & Weiss Law[1] where as the diamagnetic metals oscillate opposing the field in perpendicular direction by obeying the dehass-Van Alphan theory[2]. But, the Para & Ferro metals oscillate with temporary magnetization i.e. the magnetic retentivity i.e. not freely where as diamagnetic oscillates without any such magnetic retentivity i.e. quite freely.

Thus, the diamagnetic metals and compounds which form 90-95% of the plant constituent dominate in the oscillation with the result that the water dependent action gets excited. Thus, the rate of ascent of sap increases which creates the plant pulsation. Now, if the oscillating magnetic field is made stimulatory then the plant's pulse rate increases abruptly.

An experiment[3] was done with a mesophytic plant by keeping it in an electromagnetic solenoid with an arrangement to oscillate and stimulate its magnetic field at any desired (low) frequency where as a similar plant was kept outside as comparing . In the circuit arrangement, the oscillatory square pulsating field was made stimulating by breaking the continuous oscillatory field as damped i.e. rising to peak and receding abruptly. The frequency of the oscillation was set at 40 C/S and the total magnitude of the magnetic field, as given, was 178.93 oersteds. Out of this magnitude, 91.99 oersteds was the oscillating where as 5.19 remained constant in the first phase. Due to this the Para & Ferro magnetic metals get permanent magnetic retentivity or residual magnetism whereas the diamagnetic metals and compounds do not retain any magnetic retentivity, as stated above. Such stimulatory magnetic field was applied for 45minutes.

It has been observed with the help of a CRO that the plant's pulse rate, at first, increases in the oscillation but then rises abruptly due to the stimulation. At the same time the other comparing

plant remains same for long even after lapse of the 45 minutes. The rise in the pulse rate is obviously due to stimulatory magnetic effect on the dia-magnetic water. It has been further observed that the pulsating curve remained almost same in the different region of the cortex. It has been also observed that if the experimental plant is taken out from its soil i.e. no soil remains to the root and placed under the stimulatory magnetic field, then due to the high pulse-rate chlorophyll synthesis stops after about an hour with increasing of xanthophylls' synthesis, resulting in finally wilting of the leaves after getting yellowed. This is certainly because of non-availability of water for pulsation.

Inference: From the above result it can be inferred that if plant is placed in a stimulating magnetic field the rise of their pulse rate may enhance their growth without use of any fertilizers or any chemicals which affects the natural vitamins and carbohydrates essential for the mankind, if the plant is for human consumption. A correlation can be established in between the plant pulsation and the applied field.

Effect of stimulating Magnetic field on Plants

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References:

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2.1: What is Saline soil?

Soil that has been adversely affected by the presence of soluble salts, with or without high amounts of exchangeable sodium is known as Saline Soil. This soil has less sodium content, contains sufficient soluble salts to adversely affect the growth of most crop plants. The lower limit of electrical conductivity in the saturation extract of such soils is conventionally set at 4 dS m^{-1}(at 25°C), though sensitive plants are affected at about half this salinity and highly tolerant ones at about twice this salinity.

Salt-affected soils with a high Exchangeable Sodium Percentage (ESP) greater than 15%, pH usually less than 8.5; in general these soils are not suitable for agriculture.

2.2: What is the effect of saline soil on plant growth?

The damaging effects of salts on plants are caused not only by osmotic forces, but also by toxic levels of sodium and chloride. Fruit crops and woody ornamentals are especially sensitive to high levels of these elements. Also, the high pH value (a measure of the acid/alkaline balance) caused by excess sodium may result in micronutrient deficiencies.

When there are large amounts of soluble salts in the soil solution, the osmotic concentration will be high and the intake of water by the plant will be reduced. The kind of salt present in the soil solution must also be considered. In general, chloride salts are more toxic than sulfate salts when considered on the basis of chemical equivalents. Magnesium toxicity has been reported for wheat, beans, and guayule.

In saline soils, a moisture stress is set up at the plant roots because of the osmotic effect of salts in the soil solution. Preliminary results of the research indicate that the effects of soil-moisture tension and osmotic pressure are additive in inhibiting the growth of plants.

If soil salinity can be reduced to moderate levels, the land can be farmed successfully under proper management. It is important to select crops that are well suited to the prevailing climatic conditions and that are sufficiently salt-tolerant. Crops do not behave alike in their response to the combined effect of climate and salt.

2.3: How does one can know the saline nature of water and soil?

Early signs of salinity damage are (a) darker leaves than the normal color of bluish-green, (b) smaller leaves and (c) stems with shorter spaces between leaf nodes. When the problem gets more serious, leaves (a) become yellow (chlorotic) and (b) are affected by “burning” (firing, browning) and the death of leaf edges.

Observation:

Looking at a field carefully will reveal clues concerning soil salinity. Cracking is a clear sign of clay/silt sediments. Visible salt accumulation on the surface indicates shortage of rainfall and this may be a disadvantage for reclamation. Vegetation is obviously a good sign of recovery. If there

is neither clay/silt sediment nor vegetation, it may mean that saline water is trapped below the surface and is hindering plant establishment (called water logging).

EC meter:

An electronic conductivity meter (EC meter) provides more accurate information on soil salinity. The reading (mS/cm: milli-Siemens per centimeter) corresponds to the amount of electrolytes in solution, and therefore, the higher the value, the more salt there is.

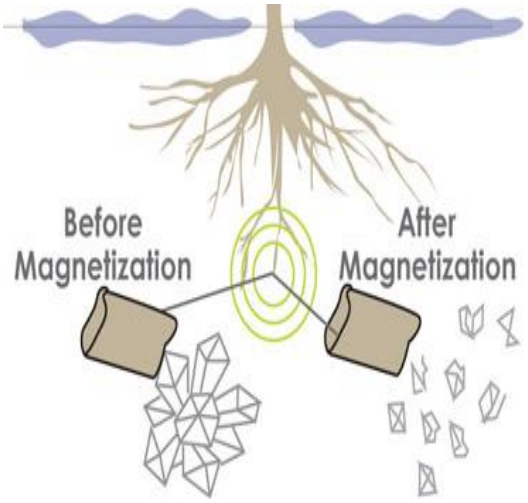
Measurement protocol:

There is a rigorous scientific protocol for measuring EC of the soil, but the following procedure is acceptable for practical field estimate purposes. Mix one portion (weight) of soil and five portions of distilled water (mineral water can be used instead, but not well water).

Shake for one minute and let the mixture stand for a couple of minutes (formally it is 30 minutes but it does not make a big difference) before dipping a pre-calibrated electrode into the solution and taking a reading.

2.4: What is magnetic treatment of Saline Soil? / What changes are brought about in saline soil by leaching it with magnetic water?

Saline soil cannot be reclaimed by any chemicals, conditioners or fertilizers. Reclamation of these types of soil is only through high quality water to leach the soil thoroughly. The water applied should be low in sodium. Magnetized water applied to salty soil breaks down the salt crystals twice as fast as unmagnetized water allowing the salts to be leached from soil. Magnetized water induces changes in the mobility of nutrient elements in root zone differed greatly from element to element according to element magnetic susceptibility. Magnetic water also induces solubility of some soil components such as $CaCO_3$ and Gypsum.



Magnetic systems make it possible to use traditionally unsuitable salty water efficiently for irrigating crops. Obviously, when you irrigate with salty water, you subsequently increase the level of soil salinity which interferes with plant nutrient absorption. After magnetic treatment of water, there is a change of the physiochemical characteristics of water leading to improved filtration and dissolvability e.g. plant capillaries start to let pass either salt crystals or crystals of different chemical elements and suspensions. Magnetically treated water washed 3-4 times more salts out of the soil than non-magnetized water and at the same time oxygen concentrations increased by 10%.

2.5: How does magnetic treatment remove salt from soil and water?

When saline water is passed through magnetic device, its structure is changed. Lorentz force not only breaks bigger water clusters into smaller clusters but also produces Hydroxyl ions. The availability of free water molecules and hydroxyl ions increase the hydration capacity of water. Magnetic treatment increases solubility of water and mobility of nutrients present in the water. In case of heavy amount of salts, these are extracted from the filters attached to the device.

When a soil is saline/ salty, then it can be reclaimed by using water to leach salt contents. In case of using magnetized water for the desalination of saline soil, it dissolves the salts contents of the saline soil because of its increased solubility. It means the TDS level of magnetized water when it passes through saline soil is increased. Salt in soil can only be removed by flushing with water. Magnetized Water applied to salty soil breaks down the salt crystals twice as fast as non-magnetized water allowing the salt to be leached from the soil. The process is lengthy and there is a cost but the cost of not beating this problem is infinitely greater.

2.6: What are the Causes of soil salinity?

- High salt in the parent material and low rainfall (low leaching)
- High rainfall with poor internal drainage
- High water table that carries salt to the soil surface
- High amount of salt being applied through chemicals, manure and poor quality irrigation water

Ions most commonly associated with soil salinity include:

Anions:

- Chloride (Cl^{-1})
- Sulphate (SO_4^{-2})
- Carbonate (HCO_3^{-1})
- Sometimes Nitrate (NO_3^{-1})

Cations:

- Sodium (Na^{+1})
- Calcium (Ca^{+2})
- Magnesium (Mg^{+2})
- Potassium (K^{+1})

2.7: What are Traditional methods of reclamation of salty soils?

Drainage carries the salts down through the soil profile and out of the rooting zone. Without drainage, salts will accumulate regardless of any applied soil amendments. However, implementing proper drainage systems is limited by expense and complex technical details.

Saline soils cannot be reclaimed by any chemicals, conditioner, or fertilizer. Reclamation of these soils consists of simply applying enough high-quality water to leach the soil thoroughly. The water applied should be low in sodium but can be fairly saline (1,500 to 2,000 ppm total salt), as this helps to keep the soil permeable during the leaching process. Generally, about 12 inches of water are required to remove 70 to 80 % of the salt for each foot of soil. This is also a limited technique in that application of excess water can create extra management problems due to the threat of high water tables, increased expense of irrigation water and difficulty in maintaining adequate levels of soil nitrate for crop growth.

In sodic soils, the exchangeable sodium is sometimes so great that the resulting dispersed soil is almost impervious to water. Sodic soil can be treated by replacing the absorbed sodium with a soluble source of cation i.e. calcium. Calcium may be made available through manipulation with native gypsum already in the soil, calcium in irrigation water (Calcium chloride), or commercial amendments. They may be useful where soil permeability is low due to low salinity, excess sodium, or high carbonate/bicarbonate in the water.

Reclamation of a foot depth of sodic soil on one acre requires approximately 1.7 tons of pure gypsum for each milli-equivalent of exchangeable sodium present per 100 grams of soil. For example, if soil has a CEC of 20 milli-equivalents per 100 grams and 30 percent exchangeable sodium, there would be 6 milli-equivalents of sodium per 100 grams of soil. Thus, 10.2 tons of gypsum (6 x 1.7) per acre would be required to reclaim this soil.

Gypsum or a soluble calcium source needs to be applied, if sodic soils contain no source of calcium (gypsum or free carbonates). However, the reclamation process is not complete until most of the sodium is removed from the soil to at least a depth of three to five feet. Even then, more time is required for restoration of good soil productivity. This process is limited in that once the soil structure is completely destroyed; it is slow to return to a desirable condition. Correcting saline and sodic soils requires salt to be leached out of the soil profile. This requires good quality water, good soil permeability and good drainage. Amendments that supply soluble calcium are needed in huge quantity to correct sodic soils.

3.1: What is the effect of treating seeds with magnetic water?

The magnetic field could increase inner energy which is distributed among the atoms causing accelerated metabolism. The humidity which allows ions to mobilize is one of the factors that make the absorbed magnetic field energy to be effective. Increasing ions mobility and ions uptake improved under magnetic treatment of seeds which leads to a better stimulation and growth.

3.2: What is magnetic treatment of seeds?

Seeds are a resting system of organs of a future plant. What the plant will be and what results we will get depend upon the quality of this system. Magnetic treatment of seeds is necessary while using the non- standard seeds, for the improvement of seeds' quality, their germination properties and for the stimulation of seeds' growth during vegetation period. The seeds should be treated directly before sowing.

Preparation of Seeds for Magnetizing

Seeds prepared for the treatment before sowing must be from one group with controlled seeds, identical by lineage, reproduction and conditions of storing. Seeds from different layer Should be thoroughly mixed and humidity should not be more than 14%. Multiplicity of the treatment is not important.

The physiological method of definition of magnetized seeds' productivity is in measuring the length of the embryonic root. It was experimentally proved that plants with good speed of growth of the embryonic root during transition from heterotrophic to autotrophic type of nourishment are more productive and create more developed root system.

Important: the right choice of Moon phases is the necessary condition of seeds' magnetic treatment and in case seeds are damaged with fungi, magnetic treatment should be done during the first half of the day.

Crop	Wheat	Cucumbers	Tomatoes	Carrots
Moon phase	New Moon	Last quarter	Full Moon	First quarter

Magnetic treatment of seeds can be applied at both methods of sowing:
Sowing With Soaked Seeds:

Take magnetic funnel and a container to soak seeds in. Pour required amount of water through magnetic funnel into the container and pass the seeds through the magnetic funnel into the container with magnetic water. Leave the seeds in magnetic water for 30 minutes and, then, pour the water out of the container and pass the seeds through the magnetic funnel again. The seeds are now ready for sowing.

Sowing With Unsoaked Seeds:

This method of magnetic treatment of seeds is used for sowing on large industrial areas (grain, wheat, rye, maize, barley, millet, buckwheat, etc.) when seeds' soaking is difficult due to large quantities. In this case, it is enough to pass seeds through a magnetic funnel as shown in the picture.

The results of both methods will be much better if after magnetic treatment of seeds; magnetic water is used for irrigation.

Magnetic funnels for magnetization of seeds:

Area	Application
1. For those who love flowers and grow them at home	Used for magnetization of flower seeds and for irrigation of flowers
2. For stations that grow seeds	Used for magnetization of flower seeds, cereals and vegetable seeds
3. For seed storehouses and main stations that sell sowing seeds	Used for magnetization of all types of sowing material

3.3: Why specific lunar period is required for seeds magnetic treatment?

Experiments have shown the vital importance of choosing the right lunar phase while magnetizing seeds and to magnetize seeds affected by fungous diseases during the first half of the day. For example, it is better to magnetize wheat seeds during the new moon, cucumber during the last quarter of the lunar phase, tomato during full moon and carrot in the first quarter of the lunar phase.

3.4: What is the effect of salty water on seed germination?

Salt water would inhibit the germination of most seeds. There are some salt tolerant species, but for most seeds the presence of salt inhibits the seeds ability to absorb water for germination. The seed would become unable to germinate and die.

3.5: What is the importance of magnetizing seeds?

This technology not only allows spending 30-50% less money on the sowing material, but also enables an earlier harvest ripening. Scientists of magnetic technology have conducted experiments in different regions using this technology. Study results show that seeds which were treated using magnetic field, grow faster. Also the property of magnetic field activate the process, speeds up protein formation, providing for the growth of roots and activating growth processes in weak seeds.

- Seeds Germination becomes 100%.
- Improvement of seeds' quality
- Enhancement of germination properties
- Stimulation of seeds' growth during vegetation period
- Gives Inner energy which accelerates metabolism
- Increasing ions mobility and ions uptake by seeds
- Increase resistance against diseases and harsh environmental conditions
- Plants grow faster.
- Increase protein formation process in plants
- Savings on Seeds sowing by 30-50%
- Earlier ripening of crop
- Increase per acre yield
- Increase Net yield
- Increase shelf life of fruits

Normal Irrigation Water & Land:

The effects of magnetic treatment on irrigation water have been studied. We showed that the main effects were the increase of the number of crystallization centers and the change of the free gas content. Both effects improve the quality of irrigation water.

The magnetized water increases the solubility of minerals and therefore improves the transfer of nutrients to all parts of the body, making the organism work more efficiently."

Importance of Magnetic Treatment of Normal Irrigation Water:

- Save a significant amount of water by 10% - 30%
- Improve water productivity
- Increase yield produced per gallon of water used
- Improve soil pH & remove/dissolve impurities from soils
- Induces changes in the mobility of nutrients in root zone
- Increase seed germination and speed of emergence of seedling
- Increase root growth
- Increase Oxygen concentrations by 10%
- Increase water flow
- Prevent and remove scaling from irrigation pipes
- Increase nutrient content in produce
- Up to 30% saving in fertilizer consumption
- Maintenance of soil fertility
- Vegetation period decreases by 15-20%
- Crop production increases by 15-20% to 100%
- Disease rate decrease drastically
- Improve quality of produce
- Taste of Agricultural produce improves
- Reduce pesticide and herbicide usage
- Increase shelf life of produce
- Saving energy and resource

It is a scientific fact that the use of Mag-Green devices to treat irrigation water will improve water productivity and thus lead to significant water savings. In the context of current and future water scarcity, even a small savings in irrigation water (conservatively say 5%) through magnetic treatment will translate to huge savings nationally.

Scientific studies have shown that Mag-Green technology can be put in practice by farmers to improve water productivity, save water, minimize the occurrence of TDS and metals and sustain the health of the environment.

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