

## **Some Peer Reviewed Scientific Studies on Magnetised Water**

A comprehensive literature review of the last eighty years shows that magnetically treated water exhibits various phenomena at the molecular level, which are proven to have direct and indirect effects on growth and productivity of plants and crops, related with a greater efficiency in irrigation and water use, modification of soil moisture profile and an optimal nutrient availability therein. Similarly, magnetic fields applied to seeds stimulate the seed germination, vigour, and plant growth rate, which influences the final net production and yield.

Scientific experiments have shown that several physicochemical and molecular effects occur when water is subjected to magnetic frequencies using static magnets or a variation thereof, which are manifested in the surface tension, the formation of clusters, the viscosity, the rate of evaporation and the absorption of different wavelengths. Studies show that these changes are responsible, directly or indirectly, of the positive responses in growth, development and production of various crops and plant when irrigated with magnetised treated water (MTW).

This technology does not generate wastes of any kind, does not emit harmful radiation and neither does require power, so it is environmentally friendly and sustainable.

### **Studies**

#### **Magnetically Treated Irrigation Water Improves the, Production and the Fruit Quality of Strawberry Plants**

[www.o-ke.cn/Public/uploads/Contribute/5b3c38d555d4a.pdf](http://www.o-ke.cn/Public/uploads/Contribute/5b3c38d555d4a.pdf)

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Abstract: Utilization of magnetically treated water has been investigated and applied in many countries such as Russia, Australia, Israel, China and Japan. Studies have shown that the magnetic field is used as a safe alternative to improve plant growth and development. The present study aimed at gaining more insight on the effect of magnetically treated irrigation water (MTIW) in the northwest region of Morocco, on the yield of strawberry plants (*Fragaria × ananassa* Duch. cv. Camarosa) and its components. The experiments were conducted in situ, during two crop seasons (2011-2012 and 2013-2014).

The results confirm that physical treatment of irrigation water by a static magnetic field improves the yield and quality of strawberry fruits. The percentages of increase in number of flowers, number of fruits, fruit yield and quality of export production per 100 plants were 27.4%, 30.9%, 34.8%, 24.3%, respectively, compared with normal irrigation water (average over both crop seasons). These results suggest that irrigation with MTIW improves the production as well as the quality of the strawberry fruit, thus water use efficiency was enhanced.

#### **Effect of Magnetized Irrigation Water and Seeds on Water Properties, Growth Parameter and yield productivity of Cucumbers**

<http://www.curreweb.com/csi/csi/2016/152-164.pdf>

Current Science International

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Author: Shahin M. M., Mashhour A. M. A. and E. S. E. Abd-Elhady

The magnetic treatment of irrigation water plays an important role for growth parameters of vegetables. **Magnetic irrigation water and or magnetized seeds increased, significantly the germination percentage of tomato, eggplant, squash and cucumber seeds.** The magnetic water treatment (MWT) improved absorption of the nutrients (N, P, K, Fe, Mn, Zn, and Cu) by the cucumber plants. In addition to these beneficial effects, the magnetic treatment of seeds and irrigation water had a positive effect on yield.

**Young Scientists Journal** | 2012 |

<https://pdfs.semanticscholar.org/00be/27e2ce0b7536ec04b6d2cf536ab7ded9977d.pdf>

**The results showed that magnetism had a significant positive effect on plant growth.** Plant seeds under the influence of the magnetic field had a higher germination rate, and these plants grew taller, larger, and healthier than those in the control group. No adverse effects of magnetism on plant growth were noticed.

#### **The effects of magnetic treatment of irrigation water and snow pea (*Pisum sativum* L var. macrocarpon) and Kabuli chickpea (*Cicer arietinum* L) seeds**

Harsharn S. Grewal Basant L. Maheshwari

Bioelectromagnetics 32:58–65, 2011

The effects of magnetic treatment of irrigation water and snow pea (*Pisum sativum* L var. macrocarpon) and Kabuli chickpea (*Cicer arietinum* L) seeds on the emergence, early growth and nutrient contents of seedlings were investigated under glasshouse conditions. A magnetic treatment device with two permanent magnets (magnetic induction: 3.5–136 mT) was used for the above treatments. Seeds were sown in washed sand and seedlings were harvested at 20 days. **The results showed that magnetic treatment of irrigation water (MTW) led to a significant ( $P < 0.05$ ) increase in emergence rate index (ERI; 42% for snow pea and 51% for chickpea), shoot dry weight (25% for snow pea and 20% for chickpea) and contents of N, K, Ca, Mg, S, Na, Zn, Fe and Mn in both seedling varieties compared to control seedlings.**

#### **Electromagnetic Water Treatment and Water Quality Effect on Germination, Rooting and Plant Growth on Flower**

Authors: Ozdemir, Saim | Dede, Omer Hulusi | Koseoglu, Gulgun

Journal: Asian Journal of Water, Environment and Pollution, vol. 2, no. 2, pp. 9-13, 2005

Abstract: **Electromagnetic treated water increased the root dry weight by 11%. In the rooting experiment only root dry weight of African violet and Coleus were affected by different water supply and electromagnetically treated water increased root dry weight by 10% compared to natural well water.** Electromagnetic treatment decreased both water alkalinity, hardness, pH, EC and growing media pH, Ca, Mg and lime deposition. Relatively higher mineral concentration in natural well water and electromagnetic treated water increased the plant height, branch number/plant and shoot dry weight. Magnetic treatment of irrigation water and snow pea and chickpea seeds enhances early growth and nutrient contents of seedlings

#### **Improvement of the growth and yield of lettuce plants by nonuniform magnetic fields.**

Electromagn Biol Med 2008; 27:173-84. De Souza A, Sueiro L, González LM, Licea L, Porrás EP, Gilart F. De Souza et al. showed that the **growth and yield of lettuce could be improved by treatment of its seeds before they were grown, using rectified sinusoidal non-uniform electromagnetic fields.** It was observed that water with magnetic fields has effects on lettuce at the nursery, vegetative, and maturity stages, including a significant increase in root length and shoot height, a greater growth rate, and a significant increase in plant height, leaf area, and fresh mass.

### **The Effect of Magnetic Water on Growth of Chick-Pea Seeds**

Samir H. Nasher

Engineering and Technology Journal 2008 Volume: 26 Issue: 9 Pages: 1125-1130

Abstract: Magnetized water has been experimented on chick-pea seed growth; results show that seeds irrigated with magnetized water were taller than seeds irrigated with tap water. The difference in length was (2.67 cm) between them.

### **Effects of Magnetized Low-Quality Water on Plant Growth**

International Journal of Research in Chemistry and Environment

Vol. 3 Issue 2 April 2013(140-147) ISSN 2248-9649

Abstract: The aim of this study is to evaluate the effect of magnetic treatments on Tomato grown under irrigation. The analysis of the data collected during the study proved that there were statistically significant increases in plant growth and some chemical contents of Tomato plant. The results of the current study demonstrated that magnetic treatments improved fresh and dry weights of Tomato plant compared to control.

### **Impact of magnetic water on plant growth**

[https://www.researchgate.net/profile/Jaime\\_Teixeira\\_Da\\_Silva/publication/284724980\\_Impact\\_of\\_magnetic\\_water\\_on\\_plant\\_growth/links/5658071108ae1ef9297bf69d/Impact-of-magnetic-water-on-plant-growth.pdf](https://www.researchgate.net/profile/Jaime_Teixeira_Da_Silva/publication/284724980_Impact_of_magnetic_water_on_plant_growth/links/5658071108ae1ef9297bf69d/Impact-of-magnetic-water-on-plant-growth.pdf)

Environmental and Experimental Biology (2014) 12: 137–142

Jaime A. Teixeira da Silva Judit Dobránszki

Magnetized recycled water promoted the yield of celery seedlings by 23%

MW increased the germination of all cultivars, shoot and root length, seedlings of 21-day-old seedlings in 7 cultivars. After irrigation with MW, Amira et al. (2010) found an increase in several parameters of common flax, and Sadeghipour and Aghaei (2013) managed to increase yield/plant by 9.1%