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The Study Effect of field Magnetic on some of average fungi of the soil

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Abstract

In series of experiment to test effect magnetic series of experiment to test effect magnetic water treatment and use it in agriculture and Environment and leaching salts of soil, the objective of the present work was to fungi determine the effect of *Rhizopus stolanifer*, *Fusarium oxysporium*, *Fusarium solani*, *Trichoderma harzianum*, *Aspergillus niger*, That cause pant disease indirect form and use magnetic area direct form in habit or kill pathogenic fungi . the use of magnetic mechanism appear positive result in fungi growth habit for fungi uses' in experiment .the use of that mechanism signification different from measurement diameter colony growth in petri dish when it use magnetic water or use direct magnetic area that incurrence the colony of fungi. As part of a series of experiments to test the effect of magnetic treatment on pathogenic fungi, their effect on water and their uses for agricultural and environmental purposes and soil washing of salts, the current work aims to use magnetic treated water and observe its effect on *Fusarium oxysporium*, *Fusarium solani*, *Trichoderma harzianum*, *Aspergillus niger*, *Rhizopus stolanifer* that cause Plant diseases indirectly and the use of the magnetic field and directly to inhibit or kill pathological fungi. The use of magnetic technology showed positive results in stopping the fungal growth of the selected fungi in the experiment as the use of those Cannula for significant differences in terms of measuring the diameters of colonial growth in dishes, whether when using magnetic water or using the direct magnetic field to which the fungi colonies were exposed

Keyword : magnetic mechanism , Magnetic technology , fungi , *Trichoderma harzianum*, *Aspergillus niger*

1.Introduction

Magnetic technology is considered scientific basis as it began to invade many countries in the world and some consider it a magic formula that achieves many benefits at one time. In the medical field it had an effect in treating bladder stones and raising the capabilities of the immune system and gum disease as it provides the opportunity to increase resources and in the industry achieves a fence From the real safety of equipment and production lines against salts, corrosion agents and rapid degradation. [1,2]. As for the relationship of magnetic energy with water, the water is made up of hydrogen atoms, oxygen, and a water molecule in a very simple way, and its molecules are bound together by hydrogen bonds. When the water molecules are placed inside a magnetic field, the hydrogen bonds disintegrate and this dissociation works to absorb energy and reduces the level of union of water parts and increases the susceptibility Electrolysis and affects the decomposition of crystals. Scientifically, there is no dispute over whether magnetic treatment is effective or not in improving the properties of water. In the former Soviet Union, magnetic treatment of water was used on a large scale and with a huge economic impact [3,4]

It was found that the magnetic field has a capacity of 1000 magnetic units that increases its absorption capacity of the ions by exchanging by 5-8%, while the capacity of 3000 units increases this percentage to between 19% to 26%. It is possible to produce many positive effects if the water was subjected to a magnetic field with a certain intensity, and then influence the properties of this water and consider it as magnetic water or magnetic water as it is currently known, and from here began a series of various researches that examined the therapeutic and industrial benefits of magnetic water, then magnetic It not only helps patients but also works as a precautionary precaution. [5,6]

Exposure to the appropriate amount of the magnetic field at least will spare us any harm, and the force that activates cells and helps them divide is magnetic energy, and the force that encourages cell formation and division is magnetic energy, and there is a belief among scientists that a magnetic charge fades when cells perform their normal function in the body. [7,8]



In this way, the body tries to revive these stressful cells that lose the magnetic charge, and the body does this by sending pulses of electromagnetic energy from the brain and through the nervous system in order to charge the cell again and establish it, and the cells of the body have negative and positive magnetic charges, and the cell is in an equilibrium between these charges when it is Equal, and this indicates that the body is in good condition, and this balance calls scientists the vital magnet. [9,10,11]

There have been many experiments conducted since 1975 that indicated that water treated with a magnetic field can be used in treating and avoiding stones in the urinary system, which is that the magnetic field works to cause an increase in the blood flow of the organ and thus an increase in the amount of oxygen helps strongly to treat the body itself. In painful joint infections, it helps to pull calcium ions out of the joint and thus feel comfortable from the pain. The effect of magnetic water has supported immune cell functions, marked progress in blood flow, inhibiting bacterial performance, increasing and stopping growth and reducing The density of fungi was also found that water that smells of sulfur loses this smell after being treated with magnetic devices, as well as with the smell of chlorine, which decreases considerably after magnetic water treatment. [12,13,14]

Another benefit of magnetized water is its ability to increase the strength of industrial detergents and solvents to a degree that makes it possible to use a third or a quarter of the usually used amount of this detergent, and some of them were difficult to believe. As for bacteria, algae and fungi, they absorb their food through the cell wall itself and absorb a lot of water through it but do not reach them. Any of the minerals that can penetrate the cell wall, and accordingly, magnetized water helps to kill bacteria, algae, and fungi. [15,16]

In this regard, magnetic water can be used in swimming pools. If the basin water is magnetic, half of the amount of chlorine normally used to purify water can be used. Even without chlorine, fungi and algae cannot grow inside the pool for a period of 36 hours, and this is considered normal for water efficacy. Magnetized, and after a day or two, the crystals begin to decompose again, which gives an opportunity for algae growth in chlorine-free ponds [1,2,13] .. Therefore the study sought to reveal the effect of the magnetic field on the fungi growth rates.

2. Materials and methods of work:

2.1. Preparing the PDA Nutritional Medium: Potato Dextrose Agar (PDA) medium Potato Dextrose Agar Prepared in the laboratory from the following materials (200) grams of potatoes, (20) grams of dextrose and (20) grams of agar. The prepared and prepared media was also used by the company Himedia and dissolved in (1) liters of water, and afterwards sterilized the medium with the conductor under a temperature of (121) (C and pressed (1) for half an hour.

2.2. Cultivation of fungal isolates: Fungal isolates were obtained from the Microbial Bank in the Environmental Research and Pollution Prevention Unit / College of Science, Al-Qadisiyah University, they were cultivated on the fungi (PDA) medium with three replications per isolation. As after planting the dishes, they were incubated in the incubator at a temperature of (25) Celsius for a period of (3-7) days.

2.3. Getting magnetic water: by using Bio technology. Magnets or Magneto Ron strongly [3] and locally manufactured by researcher [1] teaching at the Faculty of Agriculture / University of Qadisiyah and measured in the Ministry of Science and Technology. Department of Water Treatment Technology, which stipulates the passage of tap water several times in this device and passes from the North Pole and the water goes to the South Pole for several times and vice versa for a period of 6 hours, then magnetic water is placed in large plastic bottles with a commitment to use magnetic water within 24 hours because it is He will lose his shipments after this period, add to the media to be prepared, and then the radial growth diameters of fungal isolates are measured, noting the effects of magnetic water on the vaccine density of the fungi elected in the experiment

2.4. Using the technology of magnetic cylinders of the north and south poles to measure the radial growth diameters of fungal isolates: Through the use of the technique of magnetic cylinders with a diameter of 9 cm, the dishes were placed 5 cm containing containers from those fungal farms and the container on the medium of the PDA prepared using regular water and another using magnetic water And by three replicates for each isolation for both cases. The implanted plates are placed inside the magnetic cylinder and facing the magnetic field inside the cylinder along the lap time for those fungi.

2.5. The way the magnetic water works: The magnet is taken from the flat circular type with a diameter of 7- 15 cm. The bottle is filled with regular drinking water. Then the bottle is placed on the magnet and covered with other magnets. The water is left overnight (10-12) hours when we get the required water or During attaching magnetic pieces around a container containing water on the water for the same period, the water passes through a rubber tube, and then a coil is placed around the tube and the coil is turned on. This leads to the magnetization of the water more than once.

2.6. Statistical analysis: The outcome of the experiment was analyzed using Dunkin analysis

3. Results and discussion

3.1 The effect of (magnetic water) on the radial growth diameters of fungi

Table 1. the effect of using (magnetized water) on radial growth diameters of fungi

radial growth diameters of fungi					
North slope + southern slope	North slope	Southern slope	CON.	Transactions	
1.2b	1.6b	3.2a	9	<i>Trichoderma harzianum</i>	1
1.5 c	33.b	5.2a	7.5	<i>Fusarium solani</i>	2
1.3c	1.6b	22.a	6.2	<i>Fusarium oxysporium</i>	3
2.2a	2.7b	6.4a	9	<i>Aspergillus niger</i>	4
1.3bc	2.4b	4.3a	9	<i>Rhizopus stolanifer</i>	5

The results of Table (1) showed the measurement of radial growth diameters of fungal isolates using Bio technique. Magnets or Magneto Ron by following the growth of the fungi /elected in the research that there is a variation in the radial growth diameters of the fung8i as exposing the dishes to a magnetic field according to the magnetic technique leads to an increase in the germination percentage of the fungal spores with an increase in the density of the fungal spinning by stimulating the spores And increasing its vitality by increasing its energy, which is reflected in the development of yarn spinning with an increase in the effectiveness of building vital materials, but when passing water inside the magnetic field according to a special technique (north and south), the water molecules will be bound in one direction and this arrangement pushes to break the hydration. The genetic induced magnetic field energy that is working on the change link angle from the normal (less than 105) as the balance of kinetic thus break down the molecular aggregates (Cluster) crashing into smaller groups with an increase of individual molecules and this is reflected on the growth of fungi in the dishes and stopped their growth [9, 17, 20].

3.2 The effect of (distilled water) on the radius growth fungi

Table 2. the effect of (distilled water) magnetized on the radial growth diameters of fungi

radial growth diameters of fungi					
North slope + southern slope	North slope	Southern slope	CON.	Transactions	
1.3bc	2.4b	5.3a	8.2	<i>Trichoderma harzianum</i>	1
3.2bc	1.7b	2.5a	6.4	<i>Fusarium solani</i>	2
1.3bc	3b	1.4a	7.3	<i>Fusarium oxysporium</i>	3

2.6bc	3.5b	4.3a	9	<i>Aspergillus niger</i>	4
2.1bc	2.4b	5.2a	9	<i>Rhizopus stolanifer</i>	5

It was noted through the use of sterile distilled water in preparing a medium (PDA) that the rates of radial growth diameters as usual reach the colony diameter to the end of the dish in all the fungi elected in the research because that fungi are accustomed to such materials and do not need to acclimate to get used to it as soon as they are grown on this medium It will grow during the ideal lap period available for each fungus. [2,5,18,26].

3.3 The effect of using normal treated water (with magnetic cylinders) on the fungi-radiating diameters

Table 3. The effect of using treated normal water (with magnetic cylinders) on the fungi growth radius

radial growth diameters of fungi					
North slope + southern slope	North slope	Southern slope	CON.	Transactions	
1.3c	3.4b	6.9a	9	<i>Trichoderma harzianum</i>	1
2.2bc	1.7b	1.5a	6.3	<i>Fusarium solani</i>	2
2bc	2.5b	3.4a	7.8	<i>Fusarium oxysporium</i>	3
2.1bc	4.5b	3.3a	9	<i>Aspergillus niger</i>	4
1.1bc	2.4b	3.5a	9	<i>Rhizopus stolanifer</i>	5

It appears from Table (3) that there are apparent significant differences in the growth of fungi, but some have shown high resistance and increased intensity of growth in the dishes, but some of them have been clearly affected by inhibition in the dishes and this is a clear evidence of magnetic treatment using the direct magnetic field that It makes fungal farms more susceptible to inhibition or stunted growth magnetically as a result of changes in the properties of physically and chemically treated water leading to an improvement in its kinetic properties and improvement of dissolving properties of materials [8, 14, 17 and 25].

3.4 The effect of using treated distilled water (with magnetic cylinders) on the fungi growth radius

Table 4. The effect of using treated distilled water (with magnetic cylinders) on radial growth diameters of fungi

radial growth diameters of fungi					
North slope + southern slope	North slope	Southern slope	CON.	Transactions	
7.3bc	8.4b	7.3a	9	<i>Trichoderma harzianum</i>	1
3.2bc	2.7b	3.5a	6.5	<i>Fusarium solani</i>	2
2.3bc	2b	1.4a	6.3	<i>Fusarium oxysporium</i>	3
1.6bc	1.5b	3.3a	9	<i>Aspergillus niger</i>	4
3.1bc	4.4b	1.2a	9	<i>Rhizopus stolanifer</i>	5

From the above table, it was observed that the use of the magnetic field with ordinary water in preparing the media resulted in the effect of some fungi in increasing the growth of some of them and the decrease of growth rates for each other, so there was a significant increase in the density of growth compared to the treated water magnetically. [24,26] The magnetic field that emits from the north may not be affected, and vice versa, because the experiment in all cases is concerned with the magnetic field whose field is emitted from the north. [20,21,23]

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