



MAGNETIC TREATED WATER, REALITY AND APPLICATIONS : A REVIEW

Mohammed A. Al-Bayar¹, Rabeea M. Mahmood² and Ahmed Younis Saieed³

¹Animal production department, Collage of Agriculture, University of Anbar, Iraq
Ag.mohammed.ala@uoanbar.edu.iq

²Animal production department, Collage of Agriculture, University of Karbala, Iraq
rabeeaarubaii@rocketmail.com

³General directorate of vocational Education, Ministry of education, Iraq
a_younis2010@yahoo.com

Abstract

Magnet is an iron ore has an electro-attraction properties, called in past stone load, or chumbak as what was called in India, or magnatis by The Persians or shi by The Chinese (Jain, 2000) but the ancient Greek was the first who discovered it as its natural state Iodestone (Null, 2000). At the beginning magnet acquired a social attention because of its spiritual attributes, the high class people were wear it as jewelry because they believed in its ability to be anti-old agent, Cleopatra was but a magnet stone at her front head crown to longing her youth and beauty, in china it was used in needles tradition therapy as well, there philosophers were think that it had a soul like human being because of its ability to moving iron (Santwani, 2000). Wheeler (2005) referred to the first attempt to magnetizing water by Hanuman at the latest of 1800 which was as an alternative medicine upon these times (Carol, 2006), but the oldest Legend about magnet discovery was talk about an old Shepard 4000 B.C. his shoes Stick with a stone by a weird energy called magnetite after a while (Carol and Mike, 2007). Any way the attraction energy was common at that time but not in quite manner, it was known that the earth itself have an attraction energy surrounding its surface keep the planet safe from cosmic distraction rays (Jain, 2000). The magnetism as a science would been one of science branches because of the accumulation of studies in Ferromagnetic, until now it became one of the Renewable energy field sciences (Al-Dragee, 2005). Then this field of science had an interesting progress and the attraction properties haven't been Exclusive to iron or manganese only, but they were discovered to by as an attribute in all other things in nature Including living organisms (Starmer *et al.*, 1998).

Introduction

The relation between magnetic energy and water

Water molecule consists of two kinds of atoms, oxygen and hydrogen which were connected with each other by hydrogen bounds (Wasf, 1996). when water molecules flow inside magnetizing field the bounds between atoms either change or Disintegrate, this disintegration absorbs energy and increasing the atoms ability to set free by electric analysis, Subsequently rebuild the crystallization structures by reconnection between atoms and minerals ions, as a results of that the water polarization would be more and the water solubility would be increased as well (Harrison, 1996).

Some of researches illustrated that the magnetic treated waters were contained 47 types of minerals, that gives the water the balancing minerals contents which isn't exist in other sorts of water like earth water because in nature the molecules arrangement would be different (Reminick, 2003). In 1975 some of Russian scientists but the water under 100 Gauss magnetic field, who were discovered that the absorption of ions would be increased from 19% to 26 % (Mirumyants, 1975).

The magnetic field is the space where magnetic energy appears and being affecting on an electrical charge or another magnet in this space. The magnetic field lines are closed lines Stem from northern pole toward the southern one. Magnetic field is the number of lines in a definite aria of space (Simpson, 1980).

Magnetic treated water and its Benefits:

Magnetic treated water is the water which be exposed to magnetic field for a while, either by but the magnet in the water or near it (Batmanghelidj, 2005). This kind of water

supposed to be diseases preventer or general health supporter because of the changes that have been occurred in its molecular structure as a result to exposing to magnetic field the process would be remove the negative effects that may be occurred in normal Water desalination in our daily waters (Abdulmane, 2001). The magnetic treated water gives a light electric charge to the body cells which could be useful to them in their organic operations, this charge is measured by the same magnetic measuring units like gauss (Tischler, 2006). Lam (2001) referred to that the magnetic treated water have a light electric charge and have also much more OH- would be the reason to increasing Alkalinity of water enhancing all other properties as well.

Naming of magnetic treated water

Through history many names had been denominated to magnetic treated water like wonderful water, magic water, Environmental friend, etc. (Explore, 2001). Some other called it living water which was define as that water which have more benefit for living creatures in comparison with normal water (Hatton, 2004). Another names may be found like healing water or activated water because of its effect on rebuilding the damaged cell membranes even DNA in some cases (Westhof, 1993). Functional water was as well another name for it because of its ability to activate the circulation properties inside bodies (Kleiner, 1999; Wullaert, 2007).

Magnetic poles theories and their uses:

There are two theories about uses the magnetic pole in water treatment:

- 1- Monopole theory: this theory concentrates on one pole only in treating water either the north pole or the southern one.

- 2- the dipole theory: which uses the both pole in treating water as a complete circle.

The magnetic treated water is that water which treated with any of type of treating water device, the magnetic charge will stay until 48 hour after treating process and disappear after that (Jain, 2000).

The uses of magnetic poles:

- 1- Northern pole: its negative pole and responsible for increasing pH value toward the alkalinity for that it's important for healing wounds and disinfectant especially after birth or bleeding, its useful also for DNA repairing and has an effect on decreasing cholesterol and fat and calcium ion in body, as such effect on diminishing clotting (Bonile, 1987).
- 2- Southern pole: its positive and for that it may increase acidity in water causing increasing in positive charges in body and that may Motivate bacterial growth in many site in body and may be a precursor for carcinogenic consequences (Jain, 2000).
- 3- Dipole usage: many of Japanese and Russian scientist Supported the usage of dipole magnetic water treatment for its therapies and preventive roles inside bodies, without Side effects(Zoltan, 2003). Its biological benefits can summarized as follows:
 - Cell growth: because of the smallest molecular structure volume of magnetic treated water it can reach far site of body carrying the nutrients, minerals and vitamins to enhancing general metabolic rate in all body cells.
 - enhancing prenatal development.
 - calm down the animal behavior in all animal farm and that make the managing easier.
 - supporting the immune system in body and increasing B, T lymph cell and all humoral immunity.
 - its role in anti-oxidant process because it consider as a number one in removing free radical from tissue and blood stream(Rawls, 2003 and Zoltan, 2003).

The properties of magnetic treated water:

Many properties had been changed in water after passing through magnetic field, magnetic water becomes electrical conductor and have more solubility for minerals and acids in addition to increasing in soluble oxygen percentage and that could speeding up biochemical reactions (Raisen, 1999 and Al-Shameri, 2000). In addition to decreasing in water Surface tension to enhance the physical characteristics (Schmutzer, 1969).

Minimizing the magnetic water molecules causes its ability to carry things to and from cells and enhancing the cell permeability as well, that will already due to more exchanging and removing toxics from cells (MTC, 2006).

As a theory the water molecule consists of two hydrogen atoms bounding with on atom of oxygen with neutral potential charge (Reuter, 2004). But in nature the waters molecules tend to be in clusters with about 14-17-21-196-270-280 or more, this clusters have a different kinds of charges on its remotes atoms whether it was negative or positive, this charges attract the nearest minerals molecules making complex huge new molecules (Mikesell, 1985) this big structures facing the difficulties to permeable through cell

membrane, the magnetic energy provides an energy source to break the bounds between clusters down transferring them to simplest clusters not more than 5 to 7 molecules making them have the permeability inside body cells (Tamlage, 2003; Emoto, 2005). This process have a significant effect on all cell condition making them be more tender for long time in comparison with normal water and that with keep the body and all its function in youth or in semi-youth state for long time (Lipus, 2001; Lower, 2005; Remedy, 2006).

Magnetic water have more solubility (Davis and Rawls, 1996) for that it can Crumbling the mass of minerals in short time that would due to fastening the healing of bone fractures by reserving calcium ions and all other minerals and nutrients counterpart with fracture healing process (Collins and Frey, 2000). As what was mentioned in (Davis and Rawls, 1996) and (Tkachento and Semyonova, 1995) and (Kronenberg, 1985) the new properties of magnetic treated water like the increasing in fluidity and homogeneity supports its biology functions.

Babekr (2002) referred to the decreasing of acidity of water after goes through magnetic fields with 2000 gauss 2.857% . the Iraqi patent no. 417 of 1974 and WHO (1996) referred to the necessity of being pH value of the quarter that flow in pipe more than 6.5 to prevent corrosion. The balancing water pH is so important inside pipe in addition to its important inside bodies (Naum, 1998). In the other hand the water with sulfur flavor or with chlorine flavor would be fixed up after treating with magnet (Starmer *et al.*, 1998).

The biological effects of magnetic treated water inside living cells

Many researches confirm the ability of magnetic water in enhancing cells water in transmissibility, that because increasing the Permeability of cell membrane, this process will render cells incline to get rid of metabolic toxic materials Quickly (Jerman, 1996). This may be happened due to managing and systematizing the osmosis balance and ions concentration between inside and outside cells (Barnothy, 1995). Another researches demonstrates the positive wetting effect of magnetic water on cell which may be up to 20% that would be a very good indicator on general body health (Wheeler, 2004 and Lynch, 2000).

The mechanism of magnetic energy inside animals bodies:

- The body charges:

It was believed by many researchers that electric charges of cell would be diminished gradually with time via cell natural activity, the brain send a compensatory electric pulses to persist normal cells activity, without this compensatory pulses cells electric charges will be completely disappear after a while, this balancing between new and losing charges is a critical point on body heath persistency and any deviation would be record as an illness (Gursche and Zoldan, 1997). This body electro-magnetic balance may be called bio-magnetic activity and the magnetic treated water may be enhancing the state of compensatory charges by adding it from external source (Tkachenko, 1995).

- The blood:

Kulish (2004) referred to the that the magnetic water renders the red blood cells much free in distribution inside

blood vessels and more active in motion, this make them more active in carrying nutrition's and waist to or from cells.

Laycock (2007), Mclean (1997) and Zimmerman (1995) illustrated that there is a very big benefit of using magnetic water in human or animal irrigation because of its effect on blood properties especially the red blood ability of carrying materials to the damaged part of body. Another research referred to the effect of magnetic field on increasing the diameter of blood vessels making them able to carry more blood cells to same part of body in the same time (Goldsworthy *et al.*, 1999).

Blood ability responsibility to magnetic field may due to possessing the iron atom in its chemical structure, this iron atom would be affected by magnetic energy and been magnetized itself, that mean all blood been magnetized too, for that this magnetic power will be distributed after a while to all part of body and all cells would be magnetized and more sufficient in their duties (Habbas, 2004).

MTC (2006) mentioned that magnetic treated water has an effect on increasing immune-globulins and phagocytosis in blood, liver and spleen in addition to increase their numbers in places surrounding injury site and enhancing recovery. While Gold-Aqua (2005) and Lynch (2000) referred to the important role of magnetic water in increasing hemoglobin rate and decreasing cholesterol and calcium rate even remove residues that accumulate on vessels wall from inside, that would assuredly enhances heart duty and releases blood pressure. Irish (2005) returned releasing blood pressure to increasing hemoglobin ability to be resolve oxygen and be more able to carry the cholesterol and remove it from vessels wall.

It was noticed as well that the magnetic water has an effect on cell division and DNA replication, in addition to increasing oxidation activities for producing ATP, that would rises up all body state reaching to reactivation glands secretion especially pituitary gland to increase growth hormone rate and most of all other related hormones (Barnothy, 1964). MUSTAFA (2007) said that the magnetic water enhances the thyroid gland activity and increase thyroxin hormone rate, that will increase basal metabolic rate due to increasing body weight as a sequences, as well as decreasing rates of corticosterone hormone which lowers stresses that would come from fluctuations in heat degree between summer and winter. Davis and Rawls(2003) and Lynch(2000) referred to the ability of magnetic water to help enzymes to get their perfect shape or act as co-enzyme in some enzyme reactions.

Koshik (2004) declared that the magnetic waves that come from magnetic water would clash with that original cells magnetic waves, this friction between them produced heat in electron phase which may release pain and tumor in tissues, While Wasf (1996) referred to the neutrality action of magnetic water on histamine to releasing pain.

The effect of magnetic treated water on production, physiological and reproduction properties in farm animal:

1- Effect of magnetic treated water on production properties:

The magnetization of water is a new technique have a scientific foundation came from many of researches that

supports the thesis of that magnetic water have a good effect on production properties in farm animal (AL-Kayyat, 2004).

Some of researches achieved a fantastic results even they approached the edge of unbeliefs (Wasf, 1996). In experiment in this field two groups of pigs each of which contains 24 individuals, one of them drank magnetic treated water, the other drank a duplicated normal water volume, each of which eat the same ration, the pigs in magnetic water groups had an increasing in growth rate up to 12.5% in comparison with the others (William, 1999). Delco (2006) explained similar results via the effect of magnetic water on improving digestion rate in comparison with normal one. This result was similar to that by (Lin, 1990) how found that a significant rise of growth rate will be achieved in sheep and calf when magnetic water was used instead of normal.

Lin and Yotvat (1988) found a decreasing in fat rate and increasing in meat rate reached to 12.5% in lamp when magnetic water was used. Line (1990) illustrated that this increasing in true growth rate happened in spite of low rate in consumed feed and rations because of significant increasing in Efficiency of food conversion. That also what founded by (1994) Patterson who referred to a decline in feed consumption synchronized with increasing in growth rate when magnetic water used. Some of researches attributed that to the tendency of body to accumulate protein instead of fat in its tissue as a response of magnetic field Abdulla (2004) and (L.L.C, 2004).

Tinsley *et al.* (2004) noticed increasing in mice body weight and increasing body fat up to 0.6 g and make their tissues tenderer after exposing them to magnetic field for just one week only. While Hilal (2005) found increasing in fish weight after magnetic field exposing process up to 2.5 fold from original weight with better flavor.

Many researches had been conducted on geese and found a similar results in enhancing body weight in spite of decline feed stuff (Lin, 1990), (William and Terry, 2001), (McCreery, 2004) and (Nikken, 2004). AL-Mufarrej *et al.* (2005) referred to decline in feed consuming when magnetic water was used in comparison to normal. In honey production experiment field increasing in honey quantity with improved quality was found synchronized with magnetic water usage (L.L.C., 2004).

In milk production field an increment in milk production up to 10% with higher fat 15% was found by Levy *et al.* (1990) in his experiment on magnetic water. While Al-Jack (2001) noticed an increment in milk production 6% related with higher viscosity and lower bacterial total account by using this new kind of water. Lin (1990) found decreasing in mastitis disease and higher shelf life in milk produced from cows that drank magnetic water.

On poultry industry many experiments were conducted to investigate the effect of magnetic treated water on it. Most of these experiment found an improvement in bone development happens in early growth periods due to increase in body weight later may reaches to 5.7% with significant decreasing in mortality, significant increasing in egg production reaches to 10% and finally significant improvement in produced meat tenderness (Ohno and Reminich, 2001) and (L.L.C, 2005). In turkey the usage of magnetic treated water enhanced lying rate and Lengthened

its period (William and Terry, 2001; McCreery, 2004; Nikken, 2004).

2- Effect of magnetic treated water in physiological and immune properties:

Phillips (2002) and L.L.C. (2004) referred to that the horses that consume magnetic water instead of normal showed a resistance against stresses and efficiency of food conversion with enhancing in blood circle and increasing in all physiological profile reflected positively to muscles state.

The flow of electrons which came from magnetic field have an influence on the electrons on cell surface would renders it more efficient against viruses, this electrons flood may have a positive influence also on mitochondria make it more efficient with carrying and moving ATP (Konlee, 2000).

Santwani (2000) referred to the important role that would be played by magnetic water in stimulating thyroid gland to secrete thyroxin and use iodine efficiently. Wasf (2007) from his side confirms the role of magnetic water with thyroxin secretion and noticed its effect on decreasing corticosteroids too.

In experiments in longing life state in Russia Barrett (2002) found out that the Flies had been eaten magnetic treated sugar have a duplicated longer life, and the mice that live under magnetic field have 45% longer life in comparison with control. The medicine academy in confirmed the thesis using magnetic treated water in mice daily drinking will enhance T and B cells functions and all immune system as a sequence (Wasf,1996). Patterson (1994) and L.L.C (2004) referred to the ability of magnetic water in rising immune system in bodies and reduce mortality. But Santwani (2000) illustrated that the magnetic power should be more than 4400 gauss and maybe up to 8000 gauss to make the required effect especially on destroying cancer cells.

About the differences between males and females in physiological response Al-Nasri (2006) found that swiss mice that consume magnetic water 500 gauss showed increasing in hemoglobin in females up to 13.02 g/ml in comparison with male in same group, but the males overlapping females in PCV in same group up to 33.5%. While no significant differences were found between to gender in white blood cells numbers, and all males and females in magnetic groups overlapped others in all physiological properties.

Effect of magnetic treated water in reproductive properties:

Shaposhnikova and Volokhov (1990) said that the cows which were inseminated with semen was exposed to magnetic field for 1-2 minute the fertilization chance would be more than 12.5% in comparison with control. Atiah (2008) confirmed that an increasing in FSH and testosterone hormones in local goat male was observed when magnetic water was under usage even ejaculate volume, mass sperm motivation, individual sperm motivation will be enhanced and, sperm mortality and abnormality will be decline as well.

Pandey *et al.* (1996) referred to that in mice estrus period would be longed 40-80% with consuming magnetic water. Al-Nasri (2006) noticed an increasing in ovary cell activities in females mice drinking magnetic water in comparison with control. Santwani (2000) from his view

illustrated that the magnetic water organizes the feed-back activities between ovary and pituitary gland by via organizing LH and FSH secretion which would be help the all physiological action of ovaries and ovum's.

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