

EFFECT OF HEXAGON FIELD ENERGY ON THE MICROBIOLOGICAL INFECTED IRRIGATION AND DRINKING WATER

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Abstract: Hungary is a water saving area of the Carpathian Basin, therefore the water content of this area seems unfailing. From Carpathians melting slush and rainfall continuously upload our rivers. The useful surface water amount of Hungary is 118 km³/years. Only 25% of this amount is used for irrigation and as drinking water by agriculture, others leave for Hungary unused. The clearness of irrigation and drinking water is a most important commitment in plant production and animal breeding. Our real task is to use the most effective system. Our work would like to introduce the filtering efficiency of a special Japanese hexagon field vG7device. Our study was made with the consent of the Japanese distributor.

Keywords: hexagon field energy, water filtering system, microbiological infection

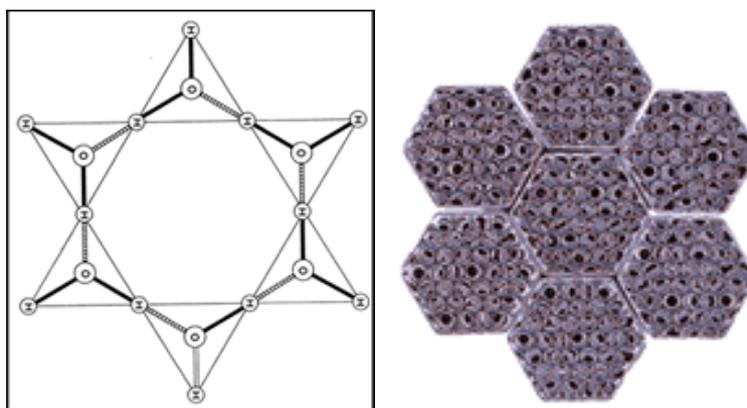
INTRODUCTION

Agriculture is by far the largest water user at global level. Modern agriculture, intensive plant growing and animal breeding demand clear water in extremely great amount. Irrigation of agricultural lands accounted for 70% of the water used worldwide. In several developing countries, irrigation represents up to 95% of all water uses, and plays a major role in food production and food security (Lenntech BV., 2015). The total amount of useful water of the Carpathian Basin is 118 km³/years. Only 25% of this amount is used for irrigation and drinking water by agriculture. It is only a small part of the available quantity (Lantos, 2015). The water quality used for irrigation is essential for the yield and the quantity of crops, for the maintenance of soil productivity, and also for the protection of the environment (Lazarova & Bahri, 2004). The contamination and infection of the ground and surface waters can happen in a number of ways. The filtering of contaminated water is obligatory before start of irrigation or drinking. Our real task is to use the most effective filtering system. Using filtered or reclaimed water for irrigation and other purposes in agriculture has been employed by a lot of experts all over the world (Haering, 2009). The toxic compounds and several microbiological organisms in the water could cause epidemic easily. The risk of illness to consumers by vegetables irrigated with reclaimed water may be reduced to a negligibly small probability through the implementation of high-technology tertiary treatments and disinfection systems, such as activated carbon, reverse osmosis, membrane filtration, chlorination, ozonation, and UV irradiation (Asano & Levine, 1998; Hamilton et al., 2006). The hexagon field energy device is a water activator adopting a strongly correlated electron material having high waves. The vG7 called device is recommended to water filtering by a Japanese distributor (<http://vg-co.jp/en/company/>, 2015). Our aim was to show the capacity and microbiological effect of the hexagon field energy on infected water based on the results of the Microbiological Laboratory of Kyoto.

MATERIALS AND METHOD

The Neu G7 water system in a novel patented water activator specially designed to convert water to a more natural state that is better than standard water, thus enhancing its energy and healing effects and properties. The vG7 “nut” is considered to be a material which works in a direction to influence the electrons so as to bring them into an efficient spin motion (Figure 1.). A spin motion of electrons in a material defines a property of the material (<http://vg-co.jp/en/company/2015>). The way of contaminated water is: *phase 1.*: when water is passed through the device, electrons are generated; *phase 2.*: electrons react with oxygen dissolved in the water; *phase 3.*: than activated oxygen, super oxide negative ions are generated; *phase 4.*: super oxide negative ions react with hydrogen ions and particles of hydrogen peroxide are generated; *phase 5.*: particles of hydrogen peroxide have abilities to decompose organic materials and germs (Antisari et al., 2013).

Figure 1.: Hexagon form structure of the applied device (<http://water.yuyu-home.net>).



The microbiological capacity assessment of this device was made on the request of the Wellness Co. Ltd. Japan. The laboratory studies were carried out in the Microbiological Laboratory of Kyoto Japan. The samples were taken from several infected waters. Samples were determined by carbon coefficient method. 0.1 ml 10^7 microbial liquid was inoculated into 10 ml phosphate buffer solution (1/15M, pH 7.2). Microbial were bred on 25 °C on standard agar. The control was determined in three repeats (Wellness Co.,Ltd).

- **Sample bacteria strains**

Escherichia coli: (IFO-3972) is a Gram-negative, facultative anaerobic, rod-shaped bacterium of the genus *Escherichia* that is commonly found in the lower intestine of warm-blooded organisms (Singleton, 1999).

Staphylococcus aureus: (IFO-12732) is a Gram-positive coccus bacterium that is a member of the Firmicutes, and is frequently found in the human respiratory tract and on the skin (Ogston, 1984).

Legionella pneumophila: (KB-1011) is a thin, aerobic, pleomorphic, flagellated, non-spore forming, Gram-negative bacterium of the genus *Legionella* (Madigan & Martinko, 2005).

Salmonella enteritidis: (IFO-3313) is a genus of rod-shaped, Gram-negative bacteria. Salmonellae are found worldwide in both cold-blooded and warm-blooded animals, and in the environment (Ryan & Ray, 2004).

RESULTS

Table 1.

Results after a 1-hour treatment (unit CFU/mL)

status of infected water					
microbal	start	after 1 hour-I.	after 1 hour-II.	after 1 hour-III.	average
<i>E. coli</i>	490.000	560.000	570.000	560.000	560.000
<i>S. aureus</i>	480.000	450.000	450.000	470.000	460.000
<i>Leg. pneumophila</i>	560.000	580.000	560.000	530.000	560.000
<i>Sal. enteritidis</i>	470.000	400.000	460.000	460.000	440.000
effect of vG7 treatment					
microbal	start	after 1 hour-I.	after 1 hour-II.	after 1 hour-III.	average
<i>E. coli</i>	490.000	270.000	320.000	350.000	310.000
<i>S. aureus</i>	480.000	390.000	350.000	420.000	390.000
<i>Leg. pneumophila</i>	560.000	310.000	380.000	350.000	350.000
<i>Sal. enteritidis</i>	470.000	160.000	180.000	130.000	160.000

Table 2.

Results after a 8-hour treatment (unit CFU/mL)

status of infected water					
microbal	start	after 3 hour-I.	after 3 hour-II.	after 3 hour-III.	average
<i>E. coli</i>	490.000	550.000	600.000	580.000	580.000
<i>S. aureus</i>	480.000	460.000	420.000	450.000	440.000
<i>Leg. pneumophila</i>	560.000	520.000	550.000	560.000	540.000
<i>Sal. enteritidis</i>	470.000	420.000	450.000	440.000	440.000
effect of vG7 treatment					
microbal	start	after 3 hours-I.	after 3 hours-II.	after 3 hours-III.	average
<i>E. coli</i>	490.000	240.000	240.000	160.000	210.000
<i>S. aureus</i>	480.000	190.000	150.000	150.000	160.000
<i>Leg. pneumophila</i>	560.000	130.000	180.000	110.000	140.000
<i>Sal. enteritidis</i>	470.000	5.300	5.500	4.900	5.200

Table 3.

Results after a 24-hour treatment. (unit CFU/mL)

status of infected water					
microbal	start	after 24 h-I.	after 24 h-II.	after 24 h-III.	average
<i>E. coli</i>	420.000	480.000	470.000	530.000	490.000
<i>S. aureus</i>	450.000	430.000	390.000	390.000	400.000
<i>Leg. pneumophila</i>	460.000	420.000	450.000	460.000	440.000
<i>Sal. enteritidis</i>	470.000	470.000	490.000	440.000	470.000
effect of vG7 treatment					
microbal	start	after 24 h-I.	after 24 h-II.	after 24 h-III.	average
<i>E. coli</i>	420.000	0	0	0	0
<i>S. aureus</i>	450.000	0	0	0	0
<i>Leg. pneumophila</i>	460.000	0	0	0	0
<i>Sal. enteritidis</i>	470.000	0	0	0	0

(Kyoto, Kubo-cho Kami-hanayama Yamashina 16-2, 607-8464).

The investigation of the Japanese Institute found that the cells of *E. coli* initially reduced by 36%, after 8 hours by 57%, the cells of *S. aureus* reduced by 19%, after 8 hours by 66%, the cells of *Leg. pneumophila* reduced by 37%, after 8 hours by 75%, and the cells of

Sal. enteritidis reduced by 72%, after 8 hour by 92%. After 24 hours they did not detect any infection in the samples (Table 1-2-3.).

CONCLUSION

The active microbiological effect of the hydrogen peroxide generated by the vG7 device was surprising. After studying the investigation of the Japanese Institute we are sure that the hexagon field energy is suitable for filtering the infected or contaminated water. The hexagon-form 'nut' is also part of the equipment and can generate hydrogen peroxide in high concentration during the cycling of water on standard flow rate. In our opinion using the Japanese device can be safe and economical in agriculture or other areas.

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