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BIOLOGICAL COLD FUSION EFFECT IN GERMINATION OF GREEN GRAM SEEDS

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ABSTRACT
Biological cold fusion is the way of changing one element into another, unequivocal fusion of mid-range elements through low energy nuclear reactions. Here green grams seeds were germinated in the room temperature and at its atmosphere condition. Elemental analysis was done with wet method by using optical emission spectrometry. Results show that in germinated seeds Na increased by 235%, Mg by 14%, P by 25%, K by 26% and Cu increased by 14% and among decreased elements Ca decreased by 14%. Changes in the value of trace elements in the germinated seeds might be due to biological cold fusion taken place in the seeds.

KEYWORDS: Biological Nuclear Fusion, Biological Transmutation, Low Energy Nuclear Fusion.

INTRODUCTION

Biological cold fusion effect seems to be not only possible; it is a fact and is inherent to biology and occurs regularly in biological systems. Elements combine in ways that change their atomic number and become another element entirely that process is biological, uses a minute amount of energy and is reversible that is, the elements that have combined can go back to their original form. Plants transmute one element into another. By observing the molecule of chlorophyll and that of hemoglobin, the plant's chlorophyll is practically identical to human blood, with only one major difference - the nucleus. In plants it is magnesium and in humans it is iron so to conclude that humans transmute chlorophyll into hemoglobin. (Peter, 2000) Removing all the blood in an alley dog's body, fill it with diluted seawater and observe a healed, peppy, healthy dog just hours afterwards this raises the point that how much ocean plasma could be safely used as a blood transfusion substitute. When thinking about biological cold fusion the first is that there is a problem in measuring living systems in a controlled, totally isolated scientific manner. One can't kill a living system, and then pretend that it is analogous to a similar but living system. This makes it difficult to study living systems with traditional chemistry and physics. Secondly, a living system is an open system, complex and ever changing. To isolate it from the natural world is to already alter the parameters of any experiment. Also, growing plants in sterile environments is simply not the way nature works. Thirdly, biological processes are at best periodic, and at works fluctuating. This means that the experimental protocol must allow for natural cycles. (Kervran, 1982) Living matter of all kinds has a number of self-evident properties such as evolution, symbiosis and bacterial pleomorphism. Kervran concluded that hydrogen and oxygen nuclei primarily, by adding or subtracting from other nuclei, are the essence of cold fusion in biology.

$Na^{11} + O^{8} \rightarrow K^{19}$
$K^{19} + H^{1} \rightarrow Ca^{20}$
$Ca^{20} - H^{1} \rightarrow K^{19}$
$Mg^{12} + O^{8} \rightarrow Ca^{20}$

Participation of carbon like,
$Si^{14} + C^{6} \rightarrow Ca^{20}$

No available how such exothermic and endothermic bio-nuclear reactions might be facilitated at the nuclear-atomic level. (Kervran, 1998) Herzeele showed research proving that plants continuously create material elements. He conducted large number of analyses with different types of seeds. His experiment showed the variation of calcium, potassium and phosphorus during germination with or without addition of mineral salts in distilled water and showed that the addition of calcium salts to the medium increased the formation of potassium. The addition of K_2CO_3, increased the formation of calcium and concluded that plants are capable of affecting the transmutation of elements (Biberian, 2012) and many of these findings that Kervran would later ratify. (Kervran, 1998) Baranger repeated the Herzeele's experiments with all possible precautions and very large number of replications with verification of the content of phosphorus, potassium, calcium and iron of vetch seeds before and after germination in twice-distilled water to which pure calcium chloride was not added and found an increase in calcium, and iron, and subsequently a decrease in phosphorus and potassium. An addition of $MnCl_2$ increases the amount of iron produced. (Biberian, 2012) Kervran performed an experiment with oat seeds analyzed using mass spectroscopy and observed that calcium increased with germination whereas phosphorus decreased. (Kervran, 1982) The laboratory of the French Society of Agriculture sprouted rye seeds under controlled conditions and these results were in good agreement with Kervran's previous

findings. (Biberian, 2012) Zündel also confirmed Kervran's result that Ca increased during the germination of oats in twice distilled water and that this increase comes from carbon and oxygen: 2C + O >> Ca and this process might have occurred from the initially present in the dry seed and by photosynthesis (Kervran, 1981) and confirmation of Kervran and Baranger's (Biberian, 2012) work during the germination of mung beans in $MnCl_2$ showed an increase of iron with the reaction $Mn^{55} + H^{1} \rightarrow Fe^{56}$. In another study there was prominent variation of potassium in germinated mung bean (Kanan, 2014) and iron, manganese, copper, zinc and calcium increased with germination treatment of barley (Naydun, 2016) and actinidic archaea can mediate magnesium to calcium transmutation. (Ravikumar, 2012) It looks that such transmutation of elements occurs regularly in the biological systems in particular by reactions among the elements. Elemental transmutation is essential to maintain a balance of certain elements in the biological bodies. In the present study few trace elements are studied in the dry green gram seeds and its two days germinated seeds to check any biological transmutation. With its own enzymes germination of seeds is a nutritional phenomenon and short period germination does not require sunshine or soil. (Fordham, 1975) In the same experiment condition ceramic beads are used to undergo soaking and germination test to verify any contamination of elements from the experiment setup and outside environment.

MATERIALS AND METHODS

Experiment was conducted in a clean room at natural environment. Ceramic beads are also used to undergo soaking and germination test state in the same experiment setup to verify any contamination of trace elements. Milli-Q water was used for cleaning, soaking and germination of green gram seeds and ceramic beads. Elemental analysis of 20 replications of Milli-Q water, soaked water, dry, soaked and germinated state ceramic beads and dry, soaked and germinated green gram seeds are conducted by wet method and used ICP-OES instrument. Seeds were selected randomly. For each replication of green gram design 1.71 gm of seeds are taken for dry, soaked and germination sample and also for each replication of ceramic beads. The control sample dry seeds and ceramic beads are cleaned in Milli-Q water to remove presence of loose material and dust if any and had immediately kept in hot air oven for 6 hours at 60^{o}c and grinded to powder and conducted elemental analysis. For soaked test seeds and ceramic beads are cleaned in Mill-Q water and soaked with 60 ml of Milli-Q water in glass petridish for 12 *h*. Then soaked seeds and beads were removed from water and kept in hot air oven for 6 hours at 60^{o}c and grinded to powder and conducted elemental analysis. Removed soaked water also tested for elemental analysis. For germination test dry seeds and beads were washed with Milli-Q water. Seeds and beads were soaked with 60 ml Milli-Q water in glass petri dish for 12 *h* then soaked seeds and beads were kept in glass petri dish for 48 *h* and allowed for the germination. During the germination watering was done on twice a day, morning and evening to make sure of the wetness of the seeds. After the germination, counted number of seeds germinated, measured their radical length and then germinated seeds and beads were kept in hot air oven for 6 hours at 60^{o}c and measured their oven dry weight and are grinded to powder to do elemental analysis. Figure 1 shows pictorial view of different samples.

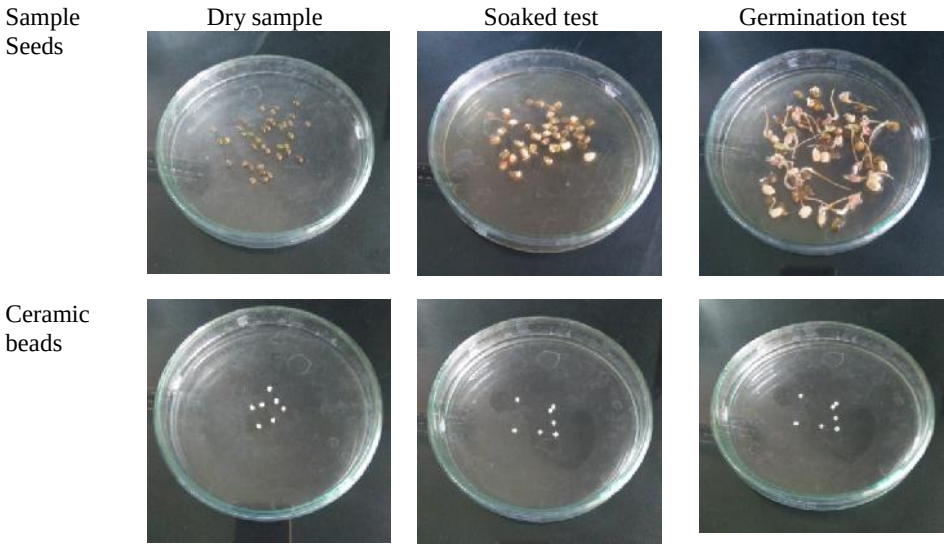

FIGURE 1. Pictorial view of samples

RESULTS

Details of samples of green gram seeds and ceramic beads are given in Table 1. Average weight of seeds and ceramic beads for dry, soaked and germinated sample is 1.71 gm. Average numbers of seeds and ceramic beads of dry, soaked and germinated tests are given in the table. There was 95% germination of green gram seeds and mean radical length 4.56 cm and SD as 0.78 with weight of 1.38 gm after oven dry of germinated seeds. Average value of elemental analysis of different samples is given in Table.

TABLE 1. Details of samples of green gram seeds and ceramic beads

Sample	Average weight of seeds (gm)	Average number of seeds	% germination	Radical length (cm) Mean±SD	Average oven dry weight (gm)
Control/dry seeds	1.72	38	-----	-----	1.57
Soaked seeds	1.70	37	-----	-----	1.49
Germinated seeds	1.71	39	95	4.56±0.78	1.38
Control/dry ceramic beads	1.71	13	-----	-----	0.80
Ceramic beads for soaking test	1.73	13	-----	-----	0.81
Ceramic beads for germination test	1.72	13	-----	-----	0.79

TABLE 2. Summary of results of elemental analysis of water, ceramic beads and green gram seeds

Weight of seed sample: 1.71 gm, Weight ceramic beads sample: 1.71 gm, Quantity of Milli-Q water used for soaking: 60 ml
Period of soaking: 12 h, Period of germination: 48 h, Instrument used: ICP-OES, Testing place: RSML

	Na		Mg		Al		Si		P		K	
Sample	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
W*	<1	---	<1	---	<1	---	<1	---	<1	---	<1	---
CW**	1	---	<1	---	<1	---	<1	---	<1	---	<1	---
SW***	3	---	7	---	<1	---	<1	---	3	---	63	---
CD^		1707.7		411.45		5224.75		4493.50		17.87		421.23
	7796	2	3433		373460		117798		129		2108	
CS^^	6785	507.89	2142	153.80	375840	2474.47	113750	2125.44	103	22.89	1545	134.20
CG^^^	5341	921.81	2512	483.68	365500	577.35	120700	1003.33	64	27.60	1631	440.79
CG-CD	-2455	---	-921	---	-7960	---	2902	---	-65	---	-477	---
% change w.r.t CD	-31.49	---	-26.83	---	-2.13	---	2.46	---	-50.39	---	-22.63	---
D#	17	8.18	1412	143.86	13	2.87	<1	<1	3316	378.04	11331	398.43
S##	26	6.11	1510	49.91	49	34.81	<1	<1	3810	135.37	11535	266.89
G###	57	18.40	1611	85.73	17	5.13	<1	<1	4152	303.75	14280	754.85
G-D	40	---	199	---	4	---	<1	---	836	---	2949	---
% change w.r.t. D	235.29	---	14.09	---	30.77	---	---	---	25.21	---	26.03	---

	Ca		**Cr**		**Mn**		**Fe**		**Ni**		**Cu**		**Zn**	
Sample	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
W	<1	---	<1	---	<1	---	<1	---	<1	---	<1	---	<1	---
CW	1	---	<1	---	<1	---	<1	---	0	---	<1	---	<1	---
SW	7	---	<1	---	<1	---	<1	---	<1	---	<1	---	<1	---
CD	3896	524.07	268	15.67	32	10.87	3623	327.03	33	4.03	1744	406.44	1687	220.25
CS	2923	426.70	295	39.64	26	7.16	3405	21.36	25	11.67	1570	716.06	1314	548.14
CG	3410	1715.18	324	71.44	18	4.38	3686	653.13	17	12.19	2193	358.82	1775	234.02
CG-CD	-486	---	56	---	14	---	63	---	16	---	449	---	88	---
% change w.r.t CD	-12.47	---	20.90	---	-43.75	---	1.74	---	-48.48	---	25.75	---	5.22	---
D	792	86.47	6	1.35	8	1.32	42	7.66	3	1.56	200	57.52	236	88.98
S	793	28.77	8	1.40	9	0.70	60	20.37	2	1.05	190	97.41	197	86.99
G	682	206.98	10	1.97	9	0.49	44	12.25	3	1.62	227	38.37	241	34.92
G-D	-110	---	4	---	1	---	2	---	0	---	27	---	5	---
% change w.r.t. D	-13.89	---	66.67	---	12.5	---	4.76	---	0	---	13.50	---	2.12	---

Legend: *W-Milli-Q water, **CW-Ceramic beads soaked water, ***SW-Seeds soaked water
^CD-Dry ceramic beads, ^^CS-Ceramic beads for soaked test, ^^^CG-Ceramic beads for germination test
#D-Dry green gram seeds, ##S-Soaked green gram seeds, ###G-Germinated green gram seeds

1. Elemental analysis of Milli-Q water was <1 for all the elements analyzed.
2. Elemental analysis of ceramic beads soaked water was from <1 to 1 ppm with Ca was of 1 ppm.
3. Elemental analysis f seeds soaked water was from<1 to 63 ppm with K was of 63 ppm.
4. There was no much difference in elemental analysis between dry ceramic beads, soaked ceramic beads and germinated ceramic beads except of the elements Mg, Ca, and Na.
5. There was pronounced change in the Mg, Na, K, P and Cu elements in the elemental analysis between dry green gram seeds, soaked seeds and germinated seeds.

Table 3. Results of independent measures non-parametric Kruskal-Wallis test for ceramic beads samples

Na		Mg		Al		Si		P		K	
Group	p	Group	p	Group	p	Group	p	Group	p	Group	p
NaCDa vs NaCSb	0.151	MgCD vs MgCS	0.048*	AlCD vs AlCS	0.79	SiCD vs SiCS	0.29	PCD vs PCS	0.094	KCD vs KCS	0.29
NaCD vs NaCGc	0.095	MgCD vs MgCG	0.048*	AlCD vs AlCG	0.79	SiCD vs SiCG	0.55	PCD vs PCG	0.074	KCD vs KCG	0.44
NaCS vs NaCG	0.095	MgCS vs MgCG	0.548	AlcCS vs AlCG	0.42	SiCS vs SiCG	0.30	PCS vs PCG	0.072	KCS vs KCG	1.00

Ca		Cr		Mn		Fe		Ni		Cu		Zn	
Group	***p***	**Group**	***p***	**Group**	***p***	**Group**	***p***	**Group**	***p***	**Group**	***p***	**Group**	***p***
CaCD vs CaCS	0.048	CrCD vs CrCS	0.62	MnCD vs MnCS	0.35	FeCD vs FeCS	0.29	NiCD vs NiCS	0.11	CuCD vs CuCS	0.84	ZnCD vs ZnCS	1.00
CaCD vs CaCG	0.444	CrCD vs CrCG	0.45	MnCD vs MnCG	0.06	FeCD vs FeCG	0.69	NiCD vs NiCG	0.19	CuCD vs CuCG	0.45	ZnCD vs ZnCG	1.00
CaCS vs CaCG	1.000	CrCS vs CrCG	0.62	MnCS vs MnCG	0.19	FeCS vs FeCG	0.30	NiCS vs NiCG	1.00	CuCS vs CuCG	0.45	ZnCS vs ZnCG	0.67

Legend: [a]Sodium content of dry ceramic beads.
[b]Sodium content of ceramic beads in soaked test.
[c]Sodium content of ceramic beads in germinated test.
*Significant change in Mg between dry ceramic beads and ceramic beads in germinated test.

Table 4. Results of independent measures non-parametric Kruskal-Wallis test for seeds samples

Na		Mg		Al		P		K		Ca	
Group	*p*	Group	*P*	Group	*p*	Group	*p*	Group	*p*	Group	*p*
NaD[a] vs NaS[b]	0.02293*	MgD vs MgS	0.0355*	AlD vs AlS	0.209	PD vs PS	0.01039*	KD vs KS	0.07533	CaD vs CaS	1
NaD vs NaG[c]	0.00054*	MgD vs MgG	0.0045*	AlD vs AlG	0.005*	PD vs PG	0.00062*	KD vs KG	3.2e-05*	CaD vs CaG	1
NaS vs NaG	0.00065*	MgS vs MgG	0.0137*	AlcS vs AlG	0.034*	PS vs PG	0.01150*	KS vs KG	0.00036*	CaS vs CaG	1

Cr		Mn		Fe		Ni		Cu		Zn	
Group	*p*	Group	*p*	Group	*p*	Group	*p*	Group	*p*	Group	*p*
CrD vs CrS	0.0408*	MnD vs MnS	0.042*	FeD vs FeS	0.027*	NiD vs NiS	0.22	CuD vs CuS	0.35	ZnD vs ZnS	0.45
CrD vs CrG	0.0023*	MnD vs MnG	0.020*	FeD vs FeG	0.733	NiD vs NiG	0.61	CuD vs CuG	0.53	ZnD vs ZnG	0.45
CrS vs CrG	0.0365*	MnS vs MnG	0.440	FeS vs FeG	0.098	NiS vs NiG	0.22	CuS vs CuG	0.19	ZnS vs ZnG	0.19

Legend: [a]Sodium content of dry seeds.
[b]Sodium content of soaked seeds.
[c]Sodium content of germinated seeds.
1. Significant increase of elements Na, Mg, P and K in the germinated seeds with respect to dry seeds.
2. Increase of element Cu in the germinated seeds with respect to dry seeds but not of significant.
3. Decrease of element Ca in the germinated seeds with respect to dry seeds but not of significant.

Results of statistical analysis are given in Table 3 and 4 for the samples of ceramic beads and seeds respectively. Results showed that among increased elements in germinated seeds with respect to dry seeds Na increased by 235% (p<0.001), Mg by 14% (p<0.01), P by 25% (p<0.001), K by 26% (p<0.001) and Cu increased by 14% (p=0.53) where has among decreased elements in germinated seeds with respect to dry seeds Ca decreased by 14% (p=1).

DISCUSSION

Table 2 showed that the media of Milli-Q water used for soaking and germination of seeds and tests of ceramic beads has less than 1 ppm in each of the element, so there was no incoming of elements from the water media into the germinated seeds. In germinated green gram seeds Na, Mg, P, K and Cu are significantly (p<0.05 except of Cu) increased with respect to dry seeds. Statistical analysis of samples of ceramic beads indicates that there are no significant changes in these elements (except of P) and this indicates that there is no contamination from outside or inside of experiment setup and environment. The increment of these trace elements might be due to the requirement of elements for their metabolic activities. (Kervran, 2011) Following low energy nuclear fusion can be deduced for the biological transmutation of the above trace elements.

$O^{8}+3H^{1} \Rightarrow Na^{11}$
$2C^{6} \Rightarrow Mg^{12}$
$O^{8}+N^{7} \Rightarrow P^{15}$
$O^{8}+N^{7}+4H^{1} \Rightarrow K^{19}$ or $S^{16}+3H^{1} \Rightarrow K^{19}$
$Ca^{20}+O^{8}+H^{1} \Rightarrow Cu^{29}$

Kervran offered explanation, involving weak interactions that are weaker than both the electromagnetic and the nuclear force. The technical term for this specific weak interaction is neutral currents, and it involves neutrino particles. (Kervran, 1982) Increment of P with respect to dry seeds may be due to the formation of pathway (fusion of nitrogen and oxygen): N + O as found out by Komaki in his experiment with eight strains of microorganisms. (Biberian, 2012) Changes in the above trace elements look as a biological transmutation process and may be the results of transmutation of some other elements in the seeds. Even though the process of biological life is well explained by chemistry, but certain processes like biological transmutation are known to occur which are beyond the reach of chemistry.

CONCLUSION

Changes in the value of trace elements in the germinated seeds might be due to biological transmutation taken place in the seeds and there was no indication of contamination from experiment setup and by environment as this envisaged by the results of elemental analysis of ceramic beads as there was no significant changes in these elements when ceramic beads undergo germination test state. At low energy, low temperature and low pressure condition in the seeds cellular structure this biological transmutation might be taken place through cold fusion or low energy nuclear reactions and is not harmful to the living tissues. By seeing the biological status like its temperature, pressure, energy, cellular structure, its molecular setup, its effect of enzymes, nutrients and proteins, and dynamic nature of biological structure the biological transmutation is unique phenomenon for that type of biological system. The present experiment results are in tune with earlier outcome and found to conclude that there are effective transmutations or cold fusion of elements by biological mechanisms.

RECOMMENDATIONS

The principal of biological transmutation can apply by industry and business for dietetic and remedial products. Can be used as non energy applications like in medicine, it has opened the door to new treatments and therapeutics for reputedly incurable diseases, production of radioisotopes for medical and industrial applications and environmental monitoring and clean-up. And as energy applications like nuclear waste disposal and transmutation and fusion device design. Agronomists and dieticians, food industries and natural food processors, natural leaven bakers particularly are the biggest beneficiaries because maintaining food's value is too close to man's body. This law of change of the elements, biological transmutation is that teaches us about change; in change we find life and by change we create life.

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