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NON-RADIOACTIVE AND LOW ENERGY BIOLOGICAL NUCLEAR COLD FUSION IN SEEDS GERMINATION

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Abstract (10pt)

Enzymes present in biological system of both chemical process and of nuclear one transmute minerals into other minerals at normal environment of temperature and pressure without creation of any radioactive emission and materials. In the present study green gram seeds were used for the germination. The study contains four types of samples, control, soaked and germinated of each of 4 gm and radicals of 16 gm of randomly selected seeds. Seeds of germinated samples were soaked in distilled water for 16 hours and then germinated for two days and conducted elemental analysis with the instrument ICP-OES of Perkin Elmer and had shown that germinated seeds increased its chemical composition of K and decreased in Na. Radicals of germinated seeds increased its chemical composition of Na, Mg, Al, P, K, Fe and Zn and decreased in Ca. Here enzymes could have facilitated biological cold fusion that resulted in changes in the chemical composition of germinated seeds and radicals in the germinated seeds using the weak nuclear force called neutral currents. These types of research are important in the fields of medicine, science, agriculture, health and deactivation of radioactive wastes.

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1. Introduction

As mentioned by Kervran [1] cold fusion is a nuclear reaction that would occur at, or near room temperature. Biological cold fusion or biological transmutation or nuclide-biological reactions are non-radioactive, low-energy transmutation of light elements in plants, animals and minerals. This class of nuclear reactions is of great importance to the progress of human knowledge in the fields of physics, cosmology, biology, geology, ecology, medicine, nutrition and agriculture and deactivation of radioactive wastes. Kervran [1] had demonstrated that it was possible to produce nuclear reactions at ambient temperature in the biological system and the mechanisms of the non-radioactive biological transmutations of the elements are

$Na_{23}+O_{16} \longrightarrow K_{39}$
$Na_{23}+H_1 \longrightarrow Mg_{24}$
$Fe_{56}+H_1 \longrightarrow Mn_{57}$
$K_{39}+H_l \longrightarrow Ca_{40}$
$Mg_{24}+O_{16} \longrightarrow Ca_{40}$
$Si_{28}+C_{12} \longrightarrow Ca_{40}$

This made to restart the study and research of biological transmutations of nuclear reactions that can occur outside the nuclear world of radioactivity and high-energy physics. Vysotskii and Kornilova, had shown stable and radioactive isotopes transmutation processes in growing microbiological cultures [2]. Vysotskii [3] observed following possible reactions in his research work.

$Mn+H \longrightarrow Fe$
$Na_{23}+P_{31} \longrightarrow Fe_{54}$
Cs-133+H-1 ⟶ Ba-134
Ba-140+C-12 ⟶ Sm-152
Cs-137+H-1 ⟶ Ba-138

Beauregard [4] suggested that Kervran's reaction for a biological transmutation from potassium to calcium in germinating oats is explained as being initiated by neutrino capture (from cosmic rays) and the weak interaction follows mediated by the z, neutral current.

$$V+{}^{1}_{1}H++{}^{29}_{14}K+ \xrightarrow[+\text{enzyme}]{+z0} {}^{40}_{20}Ca^{++}+v'$$

As mentioned by Biberian [5], researcher Baranger verified the content of phosphorus, potassium, calcium and iron of vetch seeds before and after germination in twice distilled water. This researcher found an increase of 4.2% in calcium and 8.3% in iron, and subsequently a decrease in phosphorus by 1.9%, and of potassium by 1.1%, the addition of MnCl2 increased the amount of iron produced. Biological cold fusion or transmutation in the germinated seeds may be needed to take place to cope up biotic stress and or abiotic stress [6]. As these stress are causing negative impact on sustainability and productivity of germinated seeds. If some of the required elements or micro elements is not present in the living environment (or nutrient media) of germinated seeds than given that certain pre-requisites are met it will be synthesized as a result of the transmutation. In fact such an approach suggests that the ratio of all the necessary elements in each type of biological system is fixed. The present study analyzed the trace elements of germinated green gram seeds. Pappas [7] demonstrated that biological transmutation occurs as a form of cold fusion in the cellular membrane sodium–potassium pump. According to him, the ions are not pumped back and forth through the membrane, but instead transmute back and forth between Na and K. The Pappas' equation of fusion on the level of the living cell, indicating its relation to the involved vital energies as an endothermic reaction is

$${}^{11}Na_{23}+{}^{8}O_{16}+\text{Electrical Energy}+\text{ Adenosine Triphosphate Energy}={}^{19}K_{39}$$

In order to confirm the phenomena of occurrence of the biological cold fusion, under the more controlled conditions, Komaki [8] conducted experiment on cells of eight types of microorganisms with respect to four types of chemical elements potassium, magnesium, iron and calcium and suggested the occurrence of the phenomena relevant to biological cold fusion. Vysotskii and Kornilova, had studied the phenomena of isotope transmutation in growing microbiological cultures and found out that transmutation in microbiological associations is 20 times more effective than in pure cultures [9]. Actinidic archaea mediates biological transmutation in human systems that magnesium is being transmuted biologically to calcium to produce amounts sufficient for calcium mineralization [10]. In the present research, in order to study the phenomena of non-radioactive biological transmutations of elements or non-radioactive biological cold fusion, conducted the chemical analysis of control and germinated green gram seeds by determining the amount of Na, Mg, Al, P, K, Ca, Mn, Fe and Zn present in the samples.

2. Research Method (10pt)

Experiment contains four types of samples, control (C), soaked (S) and germinated (G) with radicals and cotyledon of each of 4 gm and radicals (R) without cotyledon of 16 gm of randomly selected green gram seeds and chemical analysis of seeds and distilled water had done using ICP-OES of Perkin Elmer. Before the start of experiment all seed samples were washed in a distilled water to remove foreign material. Washed seeds of control sample C were kept for oven dry at 60O C for six hours and then powdered dry and done chemical analysis. Washed seeds of sample S were soaked with 60 ml of distilled water in petri dish for 16 hours and then were kept for oven dry at 60O C for six hours and then powdered dry and done chemical analysis. Washed seeds of sample G and R were soaked with 60 ml distilled water in petri dish for 16 hours and then seeds were sandwiched between wet filter paper in a petri dish and were allowed for germination for two days and maintained uniformity moisture in the filter paper by wetted with distilled water on twice a day morning and evening. Fig. 1 shows pictorial demonstration of experimental procedure. On day 2, number of emerged seeds was counted and the radical length of each seed was measured and then fresh weight of the germinated seeds was measured. Sample G germinated seeds, this includes radical and cotyledon were kept for oven dry at 60O C for six hours, then measured its dry weight and powdered dry and done chemical analysis. For germinated seeds of sample R, radicals were separated from cotyledon and kept radicals and cotyledons separately for oven dry at 60O C for six hours, then measured their dry weight and powdered dry and done chemical analysis of radicals and cotyledons by using ICP-OES of Perkin Elmer.

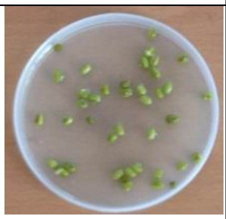
Sample	Soaked with distilled water	Removed distilled water	Placed soaked green gram seeds on the wet filter paper	Sandwiched with wet filter paper
S			-----	-----
G and R				

Figure 1. Pictorial demonstration of experimental procedure.

3. Results and Analysis

Values of physical properties are given in Table 1. Sample G germinated 1.54% more and its mean radical length was 0.5 cm more compared to R sample. Average value of chemical analysis of ten replications of different samples and distilled water is given in Table 2. All the nine elements in the distilled water are of less than 1 ppm. Control sample seeds had less chemical composition of Al and Mn but had maximum chemical composition in K. After 16 hours of soaking in distilled water seeds increased its chemical composition of Na by 74 ppm, P by 25 ppm and Zn by 9 ppm but decreased its chemical composition of Mg by 20 ppm, K by 1205 ppm, Ca by 57 ppm and Fe by 12 ppm with respect to control seeds. After germination of two days, germinated sample G had increased its chemical composition of P by 11 ppm (0.32%), K by 948 ppm (8.23%) and Zn by 13 ppm (28.26%) but decreased its chemical composition Na by 86 ppm (14.12%) and Mg by 79 ppm (5.29%) with respect to control seeds. Chemical composition of only of radicals of the sample R increased Na by 243 ppm (39.90%), Mg by 195 ppm (13.07%), P by 2385 ppm (69.25%), K by 8667 ppm (75.21%), Fe by 226 ppm (418.52%) and Zn by 27 ppm (58.70%) and decreased its chemical composition of Ca by 182 ppm (13.56%) with respect to control seeds. Only of cotyledon of sample R increased its chemical composition of Na by 201 ppm, Ca by 165 ppm Zn by 14 ppm and decreased its chemical composition of Mg by 18 ppm, P by 68 ppm and K by 473 ppm with respect to control seeds.

Table 1. Results of physical properties

Variables	Sample											
	C		S		G		R					
							Radicals and cotyledons		Radicals		Cotyledons	
	Mean*	SD**	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Air dry weight of sample (gm)	4.02	0.02	4.05	0.01	4.01	0.02	16.03	0.03	---	---	---	---
Number of seeds	104	2	100	1.65	112	1.45	417	1.32	---	---	---	---
Emergence (%)	---	---	---	---	98.21	---	96.67	---	---	---	---	---
Mean radical length (cm)	---	---	---	---	2.63	2.73	2.13	2.34	---	---	---	---
Fresh weight (gm)	---	---	7.91	0.05	20.69	0.72	61.94	0.57	---	---	---	---
Oven dry weight (gm)	3.78	0.07	3.68	0.06	3.23	0.81	---	---	2	0.72	10.91	0.68

Legend: *Mean of ten replications, **SD-standard deviation, C-control sample, S-soaked sample, G-germinated sample, R-sample in which radicals are separated from cotyledon after germination of seeds

Table 2. Results of chemical analysis

Sample	Na (ppm)		Mg (ppm)		Al (ppm)		P (ppm)		K (ppm)		Ca (ppm)	
	Mean*	SD**	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
C	609	4.58	1492	1.53	18	1.53	3444	4	11523	2.52	1342	2
DW	0.072	0.002	0.03	0.01	<0.001	---	0.021	0.002	0.042	0.002	0.13	0.02
S	683	2.89	1372	2.65	15	1.53	3469	3.61	10318	2.52	1285	3.05
G	523	6.81	1413	2	11	2.08	3455	3	12471	2.31	1337	1.73
% diff. of G w.r.t. C	14.12[2]	---	5.29[2]	---	38.89[2]	---	0.32[1]	---	8.23[1]	---	0.37[2]	---
R (only of radicals)	852	2.21	1687	1.72	25	1.43	5829	2.52	20190	2.53	1160	1.62
% dif. of R w.r.t. C	39.90[1]	---	13.07[1]	---	38.89[1]	---	69.25[1]	---	75.21[1]	---	13.56[2]	---
R (only of cotyledon)	810	2.62	1474	1.62	18	1.52	3376	2.81	11050	2.34	1507	1.47

Sample	Mn (ppm)		Fe (ppm)		Zn (ppm)	
	Mean	SD	Mean	SD	Mean	SD
C	12	1.53	54	5.13	46	3.61
DW	0.003	0.001	0.001	0.0002	0.004	0.001
S	16	1.53	42	2.52	55	3.51
G	13	1.15	57	1.73	59	1
% diff. of G w.r.t. C	8.33[1]	---	5.56[1]	---	28.26[1]	---
R (only of radicals)	15	1.51	280	1.24	73	1.32
% dif. of R w.r.t. C	25[1]	---	418.52[1]	---	58.70[1]	---
R (only of cotyledon)	17	1.32	55	1.43	50	1.28

Legend: C-control sample, DW-distilled water, S-soaked sample, G-germinated sample, R-sample in which radicals are separated from cotyledon after germination of seeds
*Mean of ten replications
**Standard deviation
[1]increasing trend
[2]decreasing trend

In the sample G, Na has decreased and K has increased with respect to control seeds, this may be due to molecular exchange called nuclear biological cold fusion of sodium with oxygen under electrical excitation to form potassium [8], [11].

$$Na+O \xrightarrow{\text{electrical excitation}} K$$

Radicals of sample R increased its chemical composition in Na, Mg, Al, P, K, Mn, Fe and Zn and have decreased in Ca, here enzymes could have facilitated biological transmutation that resulted in changes in the chemical composition of radicals in the germinated seeds using the weak nuclear force called neutral currents [1]. Enzymes are responsible for some of activities in the biological system like even antioxidant enzymes activity was found to be higher in the salt-tolerant genotype [12] and some of enzymes play roles in plant defense mechanism [13]. These chemical changes may be needed by the seeds to necessitate its biological present and future growth as Ca ions and Mg ions increasing DNA binding, renaturation and strand exchange [14] and salinity stress and dehydration enhancing the protein level and enzyme activity of DNA [15].

4. Conclusion

The experimental results led to confirm the phenomena of non-radioactive biological transmutations of elements or non-radioactive biological cold fusion in the seeds. These types of research are importance in the fields and application of medicine, science, agriculture, health and deactivation of radioactive wastes.

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