

SECTION 2. BREEDING AND SEED PRODUCTION

2.1 The method of evaluation of water coherent properties influence on plants growth

Summary. This article presents the issues of studying the water biological properties. Water structure physics studies had shown that the biological processes of living things are significantly affected by water coherence. The active principle which manages the information perceived by the cell is the complex geometric shape of water associates. It determines the structure of the physical fields inherent in the associate. Same fields trigger or inhibit intracellular molecular processes. This gives possibilities of using the transfer of quantum properties of liquid-phase objects for the preparation of medicine and biologically active substances for use in biology, agriculture, and medicine without side-effects.

The purpose of this research was to find out the influence of the coherent properties of different water sources, samples of distilled and natural water, and its electrophysical properties and its effect on the growth of *Allium-sera* L. Kirlian gas-discharge glow was recorded on an X-ray film. We used histograms of the brightness of the corona of luminescence. The values of the Euclidean distance for the medians of the heights of the histogram columns were calculated, as well as the Euclidean distance of the differences in the medians in adjacent intervals. According the research, the results of comparison with similar parameters were obtained for pre-formed samples of images of typical waters (distilled, tap, from natural sources outside and from the convent territories), as well as water samples with the established type and degree of coherence. The objects of the growth test was *Allium-sera* L onion. The seedlings height and the roots length were measured. Also its dry weight was determined.

The identity of the signs of coherence in most of samples of electrophysical water copies to the original sources, the correspondence between the results of the growth test and the properties of water coherence were revealed. There was increasing of the test culture biomass during grown on samples with dextrorotatory coherence of

water as its degree increased. With levorotatory polarization of water coherence, the biomass decreases with an increase in its degree. It is promising to study the effect of water sources with a certain coherence on the growth processes of certain plant species.

Key words: electrophysical water copies, water coherence, test-culture, onion, Kirlian photography.

Introduction. Recent discoveries in the field of physics of water related to its structure [18] have shown that the biological processes of living things are significantly affected by the coherence of water [19, 20]. Modern ideas about the structure and properties of water are based on the inhomogeneity of its components, phase transitions, and quantum effects. The active principle governing the information perceived by the cell or cellular organelles is the complex geometric shape of water associates. It is the link that determines the structure of the physical fields inherent in the associate. The same fields, in turn, trigger or inhibit intracellular molecular processes [20].

This opens up the possibility of transferring the quantum properties of liquid-phase objects in the preparation of therapeutic drugs without side effects [20-24] and biologically active substances for use in agriculture, biology and medicine.

The study of such material processes will be reduced to registering changes in its electrophysical properties. Such a possibility is possessed by methods based on the Kirlian Effect, which is based on the formation of a gas-discharge glow corona around any object of animate and inanimate nature in a high-frequency field [25].

Previously, we identified Kirlian-photographic parameters of the glow crown of experimentally prepared coherent water [26] using samples of distilled and natural drinking water [27-29]. According to the criteria of histograms of the brightness of the glow of Kirlianograms, we revealed statistically significant differences between the groups of water samples that gave intensive and weak growth test culture of *Allium sera*-of L. (onion) [30].

It seemed to us advisable to compare these results with each other for the possible application of the results obtained in solving theoretical and practical problems of biology and ecology.

Purpose of the study. To study the influence of the coherent properties of various water sources on the growth processes of *Allium-sera* L. using the registration of its Kirlian gas-discharge luminescence.

Material and research methods. The object of the study was onion plants - *Allium-sera* L., grown in various water sources. The biological experiment consisted of placing bulbs of the same size (1-1.5 cm) on a moist substrate moistened with different germination waters for 3 weeks. The h8 of the seedlings, the length of the roots were measured, and its dry weight was determined.

Natural waters from the springs of Bulgaria were used as original waters, including from the territories of monasteries (the rocky monastery of Madara, the Drensky monastery, the monastery of Saints Peter and Paul), as well as tap water from cities Varna, and Gabrovo, and from the Holy Natural Spring of Ukraine (Primorsk). Samples of distilled (DW) and natural well water (NWW) were used as control samples. Samples of quantum copies from original waters (energy-information copies-IR) were experimentally prepared on its using a device for energy-information transfer and a method for its identification [31, 32].

To obtain a Kirlian image of water samples, we used an X-ray film and an experimental device with an attachment for liquid-phase objects [33, 34].

Earlier, we created a database of Kirlian-images (Ki) on X-ray film for several types of water. The following were used as typical waters (TW): distilled water (1), tap water (TapW, 2), natural water outside the monasteries (3) and water from the territories of monasteries (4). When constructing an automated classification system by water types, the construction of histograms was used as the main method for comparing the geometric and photometric (brightness) characteristics of images [28, 35].

Kirlianograms of water drops, in the amount of 50 for each experimental sample, were scanned and according to brightness corona lightening (BCL) the values of the

Euclidean distance for the medians (EPM) of the h8s of the histogram columns, as well as the Euclidean distance of the median differences (EPPM) in adjacent intervals with the values of the parameters typical waters. The smallest values of the Euclidean distance indicate the maximum closeness of the test sample to one of the typical classes of water.

Fig. 1 shows images and corresponding histograms of pixel brightness for selected typical water classes.

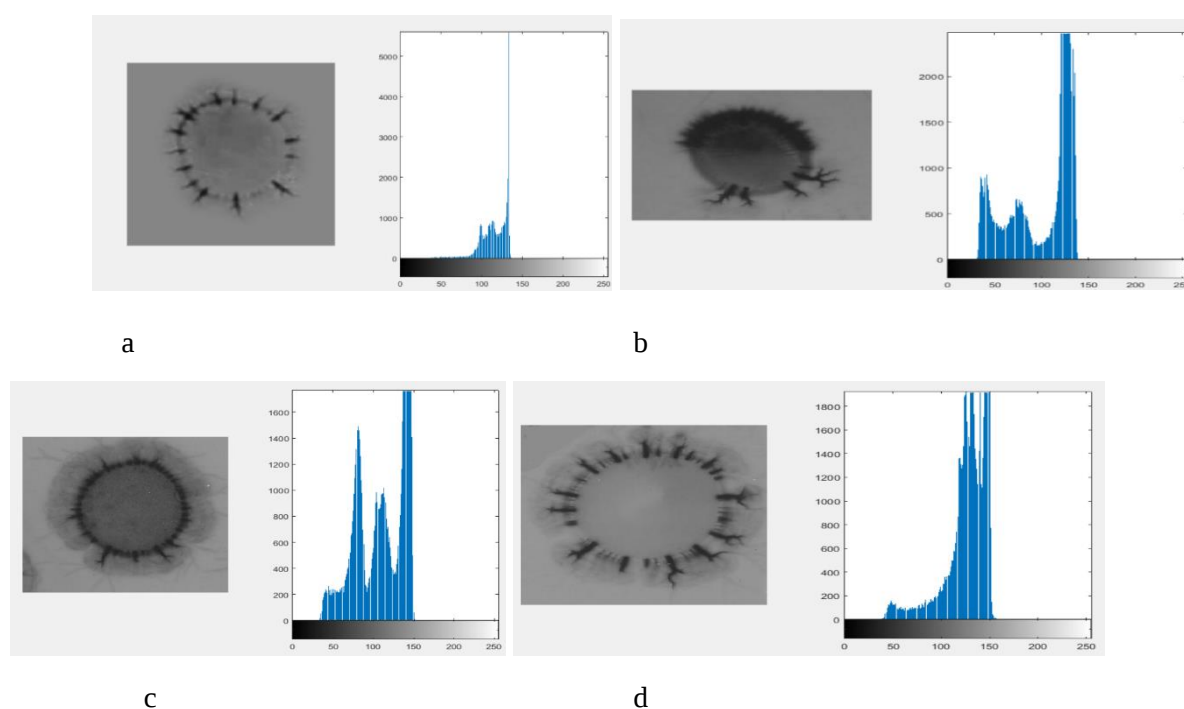


Fig. 1. Analysis of images of water: a - distilled, b - tap water, c - natural, d - from a monastery source (on the left - an image of gas-discharge radiation recorded on an X-ray film; on the right - a histogram of pixel brightness)

The obtained results and its discussion.

The results of the growth for the test water samples are presented in Table 1.

Table 1. Results of the growth test with the culture of *Allium-sera* L. for
different water sources

Intense growth

No.	Water source / pH	Green sprouts			Backs		
		Quantity, things	Average h8 (cm)	Dry weight (mg)	Quantity things	Wed length (cm)	Dry mass (mg) / total
1.	From Primorsk copy on distil / 3.9	5	6.8	200	20	5.3	50/250
2.	From Primorsk copy on NWW / 5.0	6	13.3	200	2.6	6.6	100/300
3.	Varna IV copy on NWW / 5.4	5	5	250	2.6	2	50/300
4.	Mineral. original water / 4.4	4	5	100	17	9.3	100/200
5.	Mineral water copy on distil / 4.6	2	2	50	18	6.4	50/100
6.	Mineral water copy on NWW / 4.9	6	11.1	200	16	4.6	50/250
7.	From Drensky Mon-ry original / 4.7	4	7.4	200	12	6,7	50/250
8.	From the Drensky mon. copy on distil / 5.2	4	7.8	100	17	9.3	100/200
9.	Dren Water. mon. copy on NWW / 5,3	6	9,7	200	11	7.9	50/250
10.	Madara original / 4.7	5	9, 6	300	22	6, 9	50/350
11.	Madara copy on NWW / 5.2	5	4	50	21	Z, 4	100/150
12.	From M. Peter and Paul original. / 4.8	2	1,2	50	12	6	100/150
13.	From M. Peter and Paul copy on distich / 4.6	3	2.2	100	14	4.4	100/200
14.	From M. Peter and Paul copy on NWW / 5.4	4	7.6	100	35	9.1	100/200
15.	Gabrovo v / v copy on NWW / 5.1	1	2.5	50	9	2.4	50/100

Growth is weak

No.	Water source / pH	Green sprouts			Roots		
		Quantityty,	Wed high ta (cm)	Dry weight (mg)	Quantity. things	Average length (cm)	Dry mass (mg) / total CM
1	Distiller control. water / 7.0	0	-	-	0	-	-
2	Well water control / 5.8	4	1.8	40	13	2,3	50/90
3	Primorsk original / 6.8	1	1,2	50	-	-	0/50
4	Varna v / v original / 4.5	0	-	-	12	0.8	25/25
5	Varna i.v. copy on distil / 4.5	0	-	-	0	-	-
6	Madara copy distilled / 4.2	1	0, 2	12	42	3, 6	50/70
7	Gabrovo v / v original / 4.1	0	-	-	14	2.5	50/50
8	Gabrovo copy on distil / 4.3	0	-	-	8	1,2	25/25

The results obtained suggest that the processes of biological growth on IC samples from the original depend on its physical properties. In particular, IC samples prepared on distillate and water from NWW from the water of the Holy Spring (Primorsk) gave an intensive growth of the test culture in both cases. Whereas, in the original water samples from Primorsk and NWW, the growth was weak or absent due to the unfavorable chemical composition. In the water from the city of Primorsk, the content of nitrates was higher, in the water from the NWW - iron compounds. The explanation of the appearance of the biological activity of IC can be explained from the concept of the quantum nature of water, which, with a high degree of coherence, is apparently "capable" of transmitting the spectral frequencies of both chemical elements and hydrobionts, which was shown by studies of its electrophysical properties using the Kirlian photography method [35].

The results of the analysis of experimental water samples with experimental samples of three degrees (1,2,3) of coherent water of the dextrorotatory type (+) and levorotatory type (-), prepared with distilled water (KDW) and drinking water from a

well (KWG) according to the parameters of its histograms brightness is presented in tables 2 - 4.

Table 2. Coherence of test water samples in the group of onion test culture with intensive growth

[illegible]

Particular attention is paid to the identity of the signs of coherence in a number of IC samples from original sources prepared both with distilled water and with drinking water from a well.

Table 3. Coherence of test water samples in the group of onion test culture with weak growth

Water sample s	Distil water r	Water on NWW	Primors k original	Varna origin.	Varna o n the dist.	Mader a at dist.	Gabrov o original.	Gabrov o on distil
KG	+1, -13!	+1, -1!, -3!	+1, -1!, -3!	-1 !, +1, -3!	+1, -1	+1, +2, -2, -1	+1, -1	+1, -1

Studies have revealed the regularities of the properties of the coherence of water, in accordance with the results of the growth test. In particular, attention is drawn to the diversity of types and degrees of coherence with a predominance of a certain type of it in the group of experimental water samples with intensive onion growth.

In the group of experimental water samples with weak onion growth, there were other features: some of the samples lacked the predominant type of coherence; in other cases, levorotatory polarity of the 3rd degree of coherence prevailed.

According to literature data, natural water has a mixed type of coherence, which determines the stability of its properties, which was more observed in the group of water samples with plants with intensive growth. At the same time, it is known that the levorotatory type of KG and water has a pronounced bactericidal effect [19,

20]. Obviously, this was associated with the weak growth of onions in the corresponding group of experimental water samples with a high degree of levorotatory polarity, which adversely affects biological life in general.

Comparative analysis of the biomass of the test culture *Allium-sera* L. (onion) with different species and degree of coherence of the water source is presented in Table 4.

Table 4. Comparative analysis of the biomass of the test culture *Allium-sera* L. (onion) for different types and degree of coherence of water samples

Bio WEI GHT / kg- st	+1	+1	+1	+2	+2	+2	+3	+3	+3	-1	-1	-1	-2	-2	-2	-3	-3	-3
	cm V	sm k	AB OU T	cm V	s m k	AB OU T	cm V	s m k	AB OU T	cm V	sm k	AB OU T	cm V	s m k	AB OU T	c m V	s m k	AB OU T
n	19	12	21	11	11	11	8	8	8	11	13	14	8	8	8	7	7	8
E (mg)	22 60	13 00	356 0	13 70	8 0 0	217 0	12 00	6 0 0	180 0	11 10	18 00	191 0	11 20	6 0 0	172 0	6 4 0	4 2 5	106 5
Av. (mg)	11 9	65	184	68	7 3	197	15 0	7 5	225	10 1	13 8	239	14 0	7 5	215	9 1	6 0	133

Note: cm - dry weight, V - upper green shoots, K - roots; KH-coherence of a water sample; Av - average

Attention is drawn to the increase in the biomass of the test culture *Allium-sera* L. (onion) when grown on samples with dextrorotatory coherence of water as its degree increases. At the 2nd degree of coherence, the growth of seedlings is weaker than at the 1st degree of coherence, although the total dry weight became somewhat higher. At the 3rd degree of coherence, on the contrary, the growth of onion seedlings is more pronounced than the increase in dry weight of the roots.

When levorotatory polarization water coherence with increasing in its degree of the biomass is reduced, especially at the 3rd degree of coherence. When the second degree of coherence due to lower root mass is intensification of growth of seedlings, as opposed to the results of growth of seedlings on water with (2) a degree of coherence. In (3) the degree of coherence is significantly reduced dry weight of the two parts of the plants.

CONCLUSIONS

1. The possibility of using the Kirlian photography method to determine the effect of water with different coherent properties on the biological growth of plants was established using the example of the test culture *Allium-sera* L. (onion).

2. The method of Kirlian photography of water can be used as an additional method for express-indication of the state of water basins of the biosphere, including the quality of drinking water by its coherent properties.

3. The conducted biological experiment demonstrated the possibility of transferring the electrophysical properties of various samples of natural water both to distilled water and to other water samples from natural sources.

It is promising in the future to study the effect of water sources with a certain coherence on the growth processes of plants, including those weakened by various diseases, using various phytotests, and automating the results obtained. It is recommended to study the selection of water sources with certain coherent properties, according to the criteria of Kirlian photography, to improve the breeding properties of specific plants in accordance with known research methods in biology, ecology and agriculture.