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# APPLICATIONS OF *Moringa oleifera Lam.*, *Urtica dioica L.*, *Malva sylvestris L.* AND *Plantago major L.* CONTAINING POTASSIUM FOR RECOVERY

**IGNAT IGNATOV[*] AND TEODORA POPOVA**
Scientific Research Center of Medical Biophysics (SRCMB), Sofia 1111, Bulgaria [II].
University of Forestry, Faculty of Veterinary Medicine, 10 Kl, Ohridski Blvd., Sofia, 1756, Bulgaria [TP].
[*For Correspondence: E-mail: mbioph@abv.bg]

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**ABSTRACT**

**The aim of the study was to show the use of *Moringa oleifera Lam.*, *Urtica dioica L.*, *Malva sylvestris L.* and *Plantago major L.*, which contain potassium (K), in recovery from inflammations. In Bulgaria, the use of plants and herbs by doctors and pharmacists is widely available. It is part of the national culture. Regulated by the Act of Health of 2005. In the last 30 years, herbs and plants from abroad have been increasingly used.**

***Moringa oleifera Lam.*, *Urtica dioica L.*, *Malva sylvestris L.* and *Plantago major L.* are used in inflammatory diseases of internal organs and systems. *Malva Silvestris, Urtica dioica and Plantago major* are distributed in Bulgaria. There are 13 species of Moringa, which are shrubs and trees. Their leaves, flowers, roots and seeds are used.**

**Moringa grows in Nigeria, Ghana, Somalia, Ethiopia, Kenya, Madagascar and other countries in Africa. It also grows in the Himalayas in northwestern India.**

**Spectral methods NES and DNES were used for analysis of anti-inflammatory effects.**

**Keywords:** *Moringa oleifera Lam.; Urtica dioica L.; Malva sylvestris L.* and *Plantago major L.;* anti-inflammatory action; NES; DNES.

## INTRODUCTION

Patients with COVID-19 caused by the SARS-CoV-2 virus have a decrease in potassium (K) levels in the body [1,2]. Moringa oil from nuts has pronounced anti-inflammatory and antiviral effects, demonstrated by spectral analysis [3]. Moringa capsules with leaves from *Moringa oleifera L.* have anti-inflammatory, anti-bacterial and antiviral effects [4].

There are the following amounts of Potassium in mg per 100 g – *Urtica dioica L.* (613) [5], *Moringa oleifera Lam.* (460) [6], *Malva sylvestris L.* (690) [7] and *Plantago major L.* (535) [7].

In 2017, a spectral analysis of Moringa oil intended for application in the nose and oral cavity was performed [3]. Moringa oil can be used for prevention against SARS-CoV-2 virus when the virus is still in the mouth and nose. There are analyses that justify the application of Moringa capsules for COVID-19 [4]. The great advantage of Moringa is that potassium and the chemical compounds are in organic form and are well absorbed by the body.

Patients with chronic laryngitis, pharyngitis and rhinitis were monitored in 2017 and Moringa oil was used with drops in the throat and nose. The effect is permanent. In the beginning, Moringa oil causes pain in the throat, which gradually vanish. Moringa capsules are also taken [3, 4]. There is a research in Total Phenolic Content, in vitro and the pronounced anti-inflammatory effects of Moringa [5].

*Urtica dioica L.* has effects on cardio vascular system [8]. This plant also has anti inflammatory [9], anti bacterial [10] and anti viral effects [11].

The studies show the mathematical models of interaction with water of Moringa capsules and *U. Dioica L*. In this report, data about the interaction of of Moringa capsules and *U. dioica L.* with water, obtained by non-equilibrium spectrum (NES) and differential-equilibrium energy spectrum (DNES) of water are submitted.

*Urtica dioica L., Malva Sylvestris L.* and *Plantago major L.* are successfully used in Bulgaria for recovery from inflammatory diseases. Studied with teas from *Malva Sylvestris L.* and *Plantago* major *L.* with spectral methods NES and DNES were performed. The authors [12, 13] show the doses of *U. dioica L.* and *Moringa oleifera Lam.* when the two plants are co-administered. *Malva sylvestris L.*and *Plantago* major *L.* can be intake as a tea during recovery.

In Bulgaria, Pirinski Mountain Tea is widely and successfully applied together with *U. dioica* and *Moringa oleifera Lam*.

However, *Urtica dioica L.* is not used in COVID-19 due to its blood clotting effects.

## MATERIALS AND METHODS

### NES and DNES Spectral Analysis

The device for NES and DNES spectral analysis is made by A. Antonov on an optical principle [14, 15]. For this is used a hermetic camera for evaporation of water drops under stable temperature (+22–24°C) conditions. The water drops are placed on a water-proof transparent pad, which consists of thin maylar folio and a glass plate. The light is monochromatic with filter for yellow color with wavelength at $\lambda$ = 580±7 nm. The device measures the angle of evaporation of water drops from 72.3° to 0°. The DNES-spectrum was measured in the range of -0.08– -0.1387 eV or $\lambda$ = 8.9–13.8 μm using a specially designed computer program. The main estimation criterion in these studies was the average energy ($\Delta E_{H...O}$) of hydrogen O.H-bonds among $H_2O$ molecules in water samples.

A correlation is established between f(θ) and the energy of the hydrogen bonds among water molecules.

$$f(E) = \frac{14{,}33 f(\theta)}{[1-(1+bE)^2]^2} \quad (1)$$

The energy E is measured in electron volts (eV) and f(E) is called spectrum of distribution according to energies.The water spectrum is received as a result of a non-equilibrium process of evaporation of water drops and because of this the term Non-equilibrium spectrum of water (NES) is used.

The difference:

$$\Delta f(E) = f(\text{sample}) - f(\text{control sample}) \quad (2)$$

is called Differential non-equilibrium energy spectrum (DNES).

DNES is a measure for the modification of water's structure as a result of influence. The total influence of all remaining factors besides the examined influence is the same for the control sample with water and the sample, which is influenced.

NES and DNES are measured in $eV^{-1}$.

**Chemical Composition of Moringa Capsules from Leaves**

Table 1 shows the chemical composition of Moringa capsules.

**Chemical Composition of *Urtica dioica L.***

This product *Urtica dioica L.* has the following chemical composition (Table 2)

**RESULTS AND DISCUSSION**

**Anti Inflammatory and Anti Viral Effects of Moringa**

Phytochemical analysis of Moringa shows the presence of following phytochemicals – tannins, alkaloids, flavonoids, cardiac glycosides etc. In Moringa flowers were found to contain 19.31 mg/g of gallic acid equivalent of total phenolics in dry extract but exhibited moderate antioxidant activity. The anti-inflammatory, antibacterial and antiviral activity of plant extract was significant and comparable with the standard drug diclofenac sodium [6]. Moringa has antibacterial properties [16, 17].

Gallic acid ($C_6H_2$ $(OH)_3COOH$ has antiviral properties in influenza type A and B viruses diseases [18], HSV-1, HIV-1 [19). Carbohydrates contained in *Moringa oleifera* have antiviral properties [20].

The anti-inflammatory properties of Moringa have been proven [21, 22, 23, 24]. Moringa's antiviral effect has been applied in Ethiopia [25]. The author has analyzed 15 patients with Herpes Zoster and 15 patients with rhinitis, pharyngitis and laryngitis.

The studies of the patients were performed in Medical Center Oxylife, Sofia, Bulgaria. *Moringa oleifera Lam.*, *Urtica dioica L., Malva sylvestris L.* and *Plantago major L.* have state registrations in Bulgarian Agency for Food Safety. They are herbs with sales in pharmacies and drugstores. For the diseases the medical doctors give the doses. Table 3 shows the effects on Herpes Zoster and Rhinitis, Pharyngitis and Laryngitis. Table 4. shows the effects of *Moringa oleifera* on virus-related diseases

**Results with Spectral Analysys with Methods NES and DNES of 1% Water Solutions of the Products Moringa Capsules and *Urtica dioica L.***

**Moringa Capsules**

The average energy ($E_{H...O}$) of hydrogen H…O-bonds among individual $H_2O$ molecules in 1% solution of Moringa Capsules is measured at E= -0.1238 eV. The result for the control sample (deionized water) is E= -0.1161 eV. The results obtained with the NES method are recalculated with the DNES method as a difference of the NES (1% solution of Moringa Capsules) minus the NES (control sample with deionized water) equaled the DNES spectrum of 1% solution of Moringa Capsules [4]. Thus, the result for 1% solution of Moringa Capsules recalculated with the DNES method is $\Delta E$=-0.0077±0.0004 eV. The result shows the increasing of the values of the energy of hydrogen bonds in 1% solution of Moringa Capsules regarding the deionized water. The effect is stimulation on human body. The result shows restructuring of water molecules in configurations of clusters, which influence usefully on human health on molecular and cellular level. The effects are describing with mathematical model of 1% solution of Moringa Capsules.

T-criteria of Student were applied with 10 measurements of effects of samples of 1% solution Moringa capsules in deionized water. The control samples were with deionized water. There was statistical significant difference between the two groups of results with the effects of Moringa according to the t-criterion of Student at level $P<0,05$. These results suggest the restructuring of $\Delta E_{H...O}$ values among individual $H_2O$ molecules with a statistically significant increase of local extremums in DNES-spectra of Moringa. The local extremums ($eV^{-1}$) are in the function of distribution of energies of hydrogen bonds.

**Table 1. This product Moringa capsules has the following chemical composition**

| Composition | mg per 100 g |
|---|---|
| Potassium (K) | 460 |
| Calcium (Ca) | 30 |
| Sodium (Na) | 42 |
| Magnesium (Mg) | 45 |
| Iron (Fe) | 0.36 |
| Manganese (Mn) | 0.259 |
| Zinc (Zn) | 0.45 |
| Phosphorus (P) | 50 |
| Vitamin A equlv | 0.004 |
| Vitamin $B_1$ | 0.053 |
| Vitamin $B_2$ | 0.074 |
| Vitamin $B_3$ | 0.62 |
| Dietary fiber | 3.2 |
| Fat | 0.2 |
| Protein | 2.1 |
| Carbohydrate | 8.53 |
| Energy | 37 Kcal |

**Table 2. *Urtica dioica L* has the following chemical composition**

| Composition | mg per 100 g | Type |
|---|---|---|
| Potassium (K) | 613 | |
| Calcium (Ca) | 1050 | |
| Sodium (Na) | 58 | |
| Magnesium (Mg) | 175 | |
| Iron (Fe) | 2-200 | |
| Silikon | 340 | |
| Phosphorus | 50-265 | |
| Vitamin K | 0.16-0.64 | |
| Vitamins C, B | | |
| Flavonoids | | kaempferol, isorhamnetin, quercetin and their 3-rutinosides and 3-glucosides |
| Amines | | histamine, choline, acethylcholine and serotonin (5-hydroxytryptamine) |
| Acids | | Carbonic acid, formic acid, silicic acid, citric acid, fumaric acid, glyceric acid, malic acid, oxalic acid, phosphoric acid, quinic acid, succinic acid, threnoic acid and threono-1,4-lactone |

**Table 3. Shows the degree of improvement**

| Disease | Completely cured | Improved over 80% | Improved over 60% |
|---|---|---|---|
| **Herpes Zoster** | 15 | 11 | 4 |
| **Rhinitis, Pharyngitis and Laryngitis** | 15 | 12 | 3 |

**Table 4. Shows the effects of *Moringa oleifera* on virus-related diseases**

| Viral Disease and Viruses | Researchers | Year |
|---|---|---|
| Newcastle Disease Virus (NDV) | Chollom et al. [26] | 2012 |
| HIV, AIDS | Abrams, Duncan, Hertz-Piccioto [27] Prazuk [28] | 1993 |
| Herpex Simplex Virus (HSV) | Lipipun et al. [29] | 2003 |
| Herpes Zoster | Ignatov [3] | 2017 |

***Urtica dioica L.***

There are results with methods NES and DNES with Bulgarian plants [30]. The average energy ($E_{H...O}$) of hydrogen H…O-bonds among individual $H_2O$ molecules in 1% solution of *Urtica dioica L.* measured at E=-0.1233 eV. The result for the control sample (deionized water) is E=-0.1165 eV. The results obtained with the NES method are recalculated with the DNES method as a difference of the NES (1% solution of *U. dioica*) minus the NES (control sample with deionized water) equalled the DNES spectrum of 1% solution of *U. dioica*. Thus, the result for 1% solution of *U. dioica L.* recalculated with the DNES method is ΔE=-0.0068±0.00034 eV. The result shows the increasing of the values of the energy of hydrogen bonds in 1% solution of *U. dioica L.* regarding the deionized water. The result is with effect of stimulation on human body. The result shows restructuring of water molecules in configurations of clusters, which influence usefully on human health on molecular and cellular level. The effects are describing with mathematical model of 1% solution of *U. dioica L*.

T-criteria of Student were applied with 10 measurements of effects of samples of 1% solution *U. dioica* in deionized water. The control samples were with deionized water. There was statistical significant difference between the two groups of results with the effects of *U. Dioica L.* according to the t-criterion of Student at level p <0,05. These results suggest the restructuring of $\Delta E_{H...O}$ values among individual $H_2O$ molecules with a statistically significant increase of local extremums in DNES-spectra of *U. dioica*. The local extremums ($eV^{-1}$) are in the function of distribution of energies of hydrogen bonds.

**Mathematical Models of the Products Moringa Capsules and *Urtica dioica L.* (Ignatov, Mosin, 2013).**

The research with the NES method of water drops was conducted with 1% solutions Moringa Capsules and *Urtica dioica L.* and deionized water as control samples. The mathematical models of 1% solutions Moringa Capsules and *U. dioica L.* give the valuable information for the possible number of hydrogen bonds as percent of $H_2O$ molecules with different values of distribution of energies (Tables 5 and 6; Figs. 1 and 2) [31-34]. These distributions are basically connected with the restructuring of $H_2O$ molecules having the same energies [3].

**Table 5. The distribution (%, $(-E_{value})/(-E_{total\ value})$ of $H_2O$ molecules in water samples from Moringa Capsules**

| -E(eV) x-axis | 1% Water Solution of Moringa Capsules y-axis (%($(-E_{value})$ */ $(-E_{total\ value})$** | Control Sample of Deionized Water (%($(-E_{value})$*/ $(-E_{total\ value})$** | -E(eV) x-axis | 1% Water Solution of Moringa Capsules y-axis (%($(-E_{value})$ */ $(-E_{total\ value})$** | Control Sample of Deionized Water y-axis (%($(-E_{value})$*/ $(-E_{total\ value})$** |
|---|---|---|---|---|---|
| 0.0937 | 0 | 0 | 0.1187 | 0 | 9.1 |
| 0.0962 | 0 | 11.3 | 0.1212 | **25.2**[2] | **9.1**[2] |
| 0.0987 | 0 | 7.2 | 0.1237 | 0 | 0 |
| 0.1012 | 0 | 0 | 0.1262 | 4.9 | 4.5 |
| 0.1037 | 0 | 9.1 | 0.1287 | 0 | 4.5 |
| 0.1062 | 0 | 9.1 | 0.1312 | 4.9 | 0 |
| 0.1087 | 4.9 | 0 | 0.1337 | 9.8 | 4.5 |
| 0.1112 | **15.8**[1] | **22.6**[1] | 0.1362 | 4.9 | 0 |
| 0.1137 | 0 | 4.5 | 0.1387 | **19.8**[3] | **4.5**[3] |
| 0.1162 | 9.8 | 0 | – | – | – |

For (E=-0.1112 eV)(λ=11.15 μm)($\tilde{\nu}$=897 $cm^{-1}$) is the local extremum for stimulating effect on the nervous system and improvement of nerve conductivity.
For (E = -0.1212 eV)( λ=10.23 μm)( $\tilde{\nu}$=978 $cm^{-1}$) is the local extremum for anti-inflammatory effect.
For (E=-0.1387 eV)(λ=8.95 μm)($\tilde{\nu}$=1117 $cm^{-1}$) is the local extremum for inhibition of development of tumor cells at the molecular level.
Notes:
* The result ($-E_{value}$) is the result of hydrogen bonds energy for one parameter of (-E)
** The result ($-E_{total\ value}$) is the total result of hydrogen bonds energy

Fig. 1 shows the distribution (%, $(-E_{value})/(-E_{total\ value})$) of $H_2O$ molecules in and 1% of water solution of Moringa Capsules (red line) and control sample deionized water (blue line).

For the value E = -0.1212 eV or λ = 10.23 μm there is the biggest local extremum (25.2(%, $(-E_{value})/(-E_{total\ value})$) corresponding to the re-structuring of hydrogen bonds among $H_2O$ molecules for anti inflammatory effect. The distribution (%, $(-E_{value})/(-E_{total\ value})$) of water molecules in Moringa Capsules according control sample is different. This difference may indicate on the different number of hydrogen bonds in water samples, as well as their physical parameters**,** resulting in different distribution of $H_2O$ molecules and different values of $H_2O$ molecules with ratios of $(-E_{value})/(-E_{total\ value})$. Particularly it was observed the statistical re-structuring of $H_2O$ molecules in water samples according to the energies. The experimental data may prove that stipulates the restructuring of $H_2O$ molecules on molecular level and may be used for anti-inflammatory effects with influence of immunology system. The experimental data for Moringa Capsules may prove that stipulates the restructuring of $H_2O$ molecules on molecular level and the biophysical effects are:

For (E=-0.1112 eV)(λ=11.15 μm)($\tilde{\nu}$=897 $cm^{-1}$) is the local extremum for stimulating effect on the nervous system and improvement of nerve conductivity.

For (E = -0.1212 eV)( λ=10.23 μm)( $\tilde{\nu}$=978 $cm^{-1}$) is the local extremum for anti-inflammatory effect.

For (E=-0.1387 eV)(λ=8.95 μm)($\tilde{\nu}$=1117 $cm^{-1}$) is the local extremum for inhibition of development of tumor cells at the molecular level.

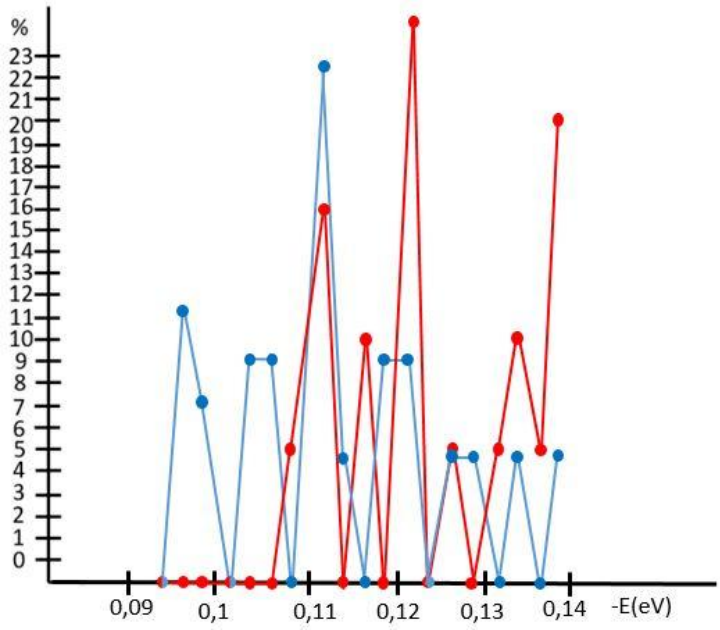



**Fig. 1. Mathematical model (Ignatov, Mosin, 2013) of 1% water solution of Moringa Capsules**

Notes:
For (E=-0.1112 eV)(λ=11.15 μm)($\tilde{\nu}$=897 $cm^{-1}$) is the local extremum for stimulating effect on the nervous system and improvement of nerve conductivity.
For (E = -0.1212 eV)( λ=10.23 μm)( $\tilde{\nu}$=978 $cm^{-1}$) is the local extremum for anti-inflammatory effect.
For (E=-0.1387 eV)(λ=8.95 μm)($\tilde{\nu}$=1117 $cm^{-1}$) is the local extremum for inhibition of development of tumor cells at the molecular level.

**Table 6. The distribution (%, $(-E_{value})/(-E_{total\ value})$ of $H_2O$ molecules in water samples from *Urtica dioica L.***

| -E(eV) x-axis | 1% Water Solution of *Urtica dioica L.* y-axis (%((-$E_{value}$) */ (-$E_{total\ value}$)** | Control Sample of Deionized Water (%((-$E_{value}$)*/ (-$E_{total\ value}$)** | -E(eV) x-axis | 1% Water Solution of *Urtica dioica L.* y-axis (%((-$E_{value}$) */ (-$E_{total\ value}$)** | Control Sample of Deionized Water y-axis (%((-$E_{value}$)*/ (-$E_{total\ value}$)** |
|---|---|---|---|---|---|
| 0.0937 | 0 | 0 | 0.1187 | 0 | 2.7 |
| 0.0962 | 3.3 | 7.8 | 0.1212 | **23.5**[2] | **2.7**[2] |
| 0.0987 | 3.3 | 5.1 | 0.1237 | 0 | 11.9 |
| 0.1012 | 6.5 | 10.8 | 0.1262 | 3.3 | 5.1 |
| 0.1037 | 3.3 | 5.1 | 0.1287 | 0 | 5.1 |
| 0.1062 | 0 | 7.8 | 0.1312 | 3.3 | 7.8 |
| 0.1087 | 6.5 | 10.8 | 0.1337 | 3.3 | 2.7 |
| 0.1112 | **16.1**[1] | **9.5**[1] | 0.1362 | 0 | 0 |
| 0.1137 | 0 | 5.1 | 0.1387 | **21.1**[3] | **2.7**[3] |
| 0.1162 | 6.5 | 7.8 | – | – | – |

For (E=-0.1112 eV)(λ=11.15 μm)($\tilde{\nu}$=897 $cm^{-1}$) is the local extremum for stimulating effect on the nervous system and improvement of nerve conductivity.
For (E = -0.1212 eV)( λ=10.23 μm)( $\tilde{\nu}$=978 $cm^{-1}$) is the local extremum for anti-inflammatory effect.
For (E=-0.1387 eV)(λ=8.95 μm)($\tilde{\nu}$=1117 $cm^{-1}$) is the local extremum for inhibition of development of tumor cells at the molecular level.
Notes:
* The result ($-E_{value}$) is the result of hydrogen bonds energy for one parameter of (-E)
** The result ($-E_{total\ value}$) is the total result of hydrogen bonds energy

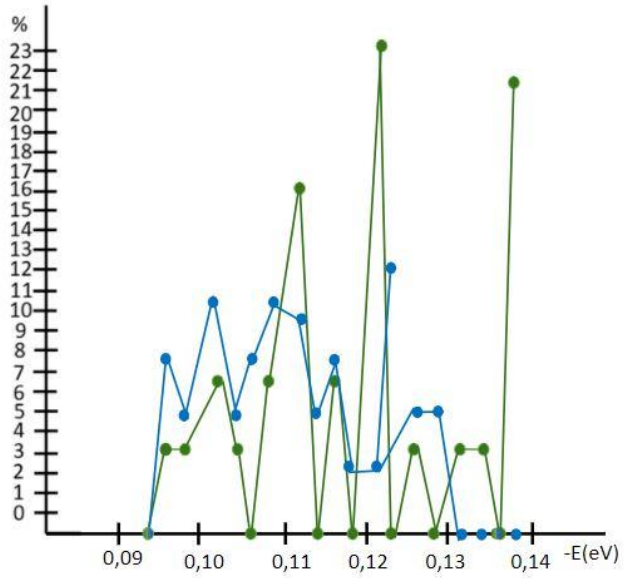



**Fig. 2. Mathematical model (Ignatov, Mosin, 2013) of 1% water solution of *Urtica dioica L.***

Notes:
For (E=-0.1112 eV)(λ=11.15 μm)($\tilde{\nu}$=897 $cm^{-1}$) is the local extremum for stimulating effect on the nervous system and improvement of nerve conductivity.
For (E = -0.1212 eV)( λ=10.23 μm)( $\tilde{\nu}$=978 $cm^{-1}$) is the local extremum for anti-inflammatory effect.
For (E=-0.1387 eV)(λ=8.95 μm)($\tilde{\nu}$=1117 $cm^{-1}$) is the local extremum for inhibition of development of tumor cells at the molecular level.

**Table 7. Results with spectral methods NES and DNES with Moringa capsules, *Urtica dioica L.*, *Malva sylvestris L.* and *Plantago major L.***

| Plant or Herb | Sample, NES E (eV) | Control Sample, NES E (eV) | DNES ΔE (eV) |
|---|---|---|---|
| **Moringa capsules** | -0.1238 | -0.1161 | -0.0077±0.0004 |
| ***Urtica dioica L.*** | -0.1233 | -0.1165 | -0.0068±0.00034 |
| ***Malva sylvestris L.*** | -0.1198 | -0.1166 | -0.0032±0.00016 |
| ***Plantago major L.*** | -0.1201 | -0.1170 | -0.0031±0.000155 |
| **Pirinski Mountain Tea** | -0.1213 | -0.1168 | -0.0045±0.00023 |

Fig. 2 shows the distribution (%, $(-E_{value})/(-E_{total\ value})$ of $H_2O$ molecules in and 1% of water solution of *Urtica dioica L.* (green line) and control sample deionized water (blue line).

For the value E = -0.1212 eV or λ = 10.23 μm there is the biggest local extremum (23.5(%, $(-E_{value})/(-E_{total\ value})$) corresponding to the re-structuring of hydrogen bonds among $H_2O$ molecules for anti inflammatory effect. The distribution (%, $(-E_{value})/(-E_{total\ value})$ of water molecules in *Urtica dioica L.* according control sample is different. This difference may indicate on the different number of hydrogen bonds in water samples, as well as their physical parameters**,** resulting in different distribution of $H_2O$ molecules and different values of $H_2O$ molecules with ratios of $(-E_{value})/(-E_{total\ value})$. Particularly it was observed the statistical re-structuring of $H_2O$ molecules in water samples according to the energies. The experimental data may prove that stipulates the restructuring of $H_2O$ molecules on molecular level and may be used for anti-inflammatory effects with influence of immunology system.

**Results with Spectral Methods NES and DNES with Moringa Capsules, *Urtica dioica L., Malva sylvestris L.* and *Plantago major L.***

Table 7 shows the results with spectral methods NES and DNES with Moringa capsules, *Urtica dioica L.*, *Malva sylvestris L.* and *Plantago major L.*

As a result of different energies of hydrogen bonds, the surface tension of 1% solution of water sample with *Urtica dioica L.* is increasing. The increasing of surface tension is regarding the control sample. This effect is connected with preservation of the energy in human body as result of biochemical process among water molecules and bio molecules. In Bulgaria, parallel studies have been performed on bacteria that cause inflammation such as *Escherichia coli*, *Enterococcus spp.* and *Total coliforms*, as well as on the anti-inflammatory effects of herbs [35-41].

Doses at co-administered of Moringa and *Urtica dioica L.* are per day [5,42, 43].

Doses may be prescribed individually by a doctor or pharmacist. Additionally, tea from one of the following herbs is recommended- *Malva sylvestris L.*, *Plantago major L.* or Pirinski Mountain Tea.

Doses a**t** co-administered of Moringa capsules and *Urtica dioica L.* are per day per day:

Moringa – 1 g

*Urtica dioica L.* – extract of 100 mg

**CONCLUSION**

*The authors make study of Moringa oleifera Lam.*, *Urtica dioica L., Malva Sylvestris L.* and *Plantago major L.*, which contain potassium (K), in recovery from inflammations.

Analyzes were performed with NES and DNES spectral methods of bio effects as a result of restructuring of water molecules of 1% solutions of Moringa capsules and *Urtica dioica L.*

The study shows the mathematical model of interaction with water of Moringa capsules and *Urtica dioica L.*. In this report are submitted data about the interaction of of Moringa capsules and *Urtica dioica L.*with water, obtained by non-equilibrium (NES) and differential-equilibrium energy spectrum (DNES) of water. The average energy ($\Delta E_{H...O}$) of hydrogen H…O-bonds among individual molecules $H_2O$ after treatment of Moringa capsules with water measured by NES- and DNES-methods is with values for anti inflammatory effects.

Analyzes of the chemical composition and local extremums of the spectrum were performed. Anti-inflammatory effects are expressed and shown at E = -0.1212 eV)( $\lambda$=10.23 μm)( $\tilde{\nu}$=978 $cm^{-1}$.

The authors recommend the doses with anti inflammatory effects at co-administered of Moringa and *Urtica dioica L.* per day

## ETHICAL APPROVAL

The products used for this research are for scientific research and they are not products of companies. There is absolutely no conflict of interests. The research was not funded by the producing company rather it was funded by personal efforts of the authors.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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