most exposed to temperature fluctuations are crops. Among them it is necessary to allocate the objects most susceptible to frost and (separately) drought (extremely high temperatures).

In the first category should include winter and perennial crops.

They are characterized by winterkill or freezing vegetative organs, leading to disease development or death.

In assessing the impact DWE must consider not only temperature, but also the period of exposure and the combination with other factors increasing sensitivity of the object and causing damage.

Danchenko A., Lemiasheuski V.

International Sakharov Environmental Institute of Belarusian State University, Minsk, Republic of Belarus

INFLUENCE OF EXPOSURE HELIUM-NEON LASER AT A FRACTION OF METHEMOGLOBIN AND GLYCATED HEMOGLOBIN

Blood is a liquid body tissue, which provides transport of all resources and exchange products for other cells and tissues of the body. In this regard, human blood parameters are a very important feature of health status that reflects its state at a given time. Since the blood is quite labile tissue, so its reacts to external and internal influences. Hemoglobin fractions are its basis, a helium-neon laser of low-intensity radiation was selected as a tool to influence the blood. Irradiation of helium-neon laser allows to achieve photobiological biostimulation effect that occurs at low-intensity radiation (λ = 632.8 nm). This effect occurs not only when irradiated blood but also tissues areas with any inflammatory processes. The laser beam is a means for vasodilation, increasing the number of hemoglobin complexes with NO, increasing the amount of erythrocytes, hemoglobin and leukocytes.

Hemoglobin is one of the leading acceptor of radiation energy. Irradiation causes a conformational change in the molecule, which leads to increase its affinity for oxygen. The laser radiation can increase the activity of cytochrome b558III on the membranes of red blood cells, as well as increase transformation methemoglobin to oxyhemoglobin form. However, the effect of helium-neon laser at glycated hemoglobin is not described in the scientific literature.

Methemoglobin is an important indicator of the overall state of the blood, its ability to carry oxygen to the tissues. It is a hemoglobin containing oxidized form of iron ion (Fe3 +) is not able to attach the oxygen, and hence to carry out its transport to the tissues. The blood methemoglobin is constantly present and is recovered in an amount of up to 1%. The rise of this level is promotes to development of methemoglobinemia, which carries the symptoms such as intense blue-brown skin color (15%), hypoxia, anemia (60%) and death induced by it (70–80%). Although there is

a species of genetically induced methemoglobinemia, the vast majority of it is presented in a form which received in the postnatal period and appears as a result of radiation or the use of toxic substances. Also, during the in vitro storage of blood samples a methemoglobin concentration increases over time, which is one of the factors that complicate this process. It is therefore important to check and control the value of methemoglobin in the blood.

Glycosylated hemoglobin (HgbA1) is a complex of hemoglobin A with glucose, which is the result of non-enzymatic chemical reaction, glycation. Glycation is a process of accession to the hemoglobin A of glucose molecules, reaction is irreversible and the speed is proportional to the level of blood glucose over the life of the erythrocyte (120 days) – i.e. glucose content in the blood during this period (normal 3.3-5.5 mmol/l). On this basis, it is used for the diagnosis of diabetes. The normal level of glycated hemoglobin in the range from 4% to 5.9%, and there is an increase in diabetes its value to 6.5% and higher. There are several forms of glycosylated hemoglobin: HbA1a, HbA1b, HbA1c, the latter of which is the primary by the fraction in the blood and most fully reflects glycemia. As blood glucose levels indicates the presence or absence of diabetes, is also very important to control and verify (about once a quarter) in the blood level.

Thus, undoubtedly important for physiology and medicine is a study on the response photoreaction and adaptation of blood system, and in particular hemoglobin, to irradiation of neon-helium laser.

Davydova I., Vinskyi V.

Zhytomyr State Technological University, Zhytomyr, Ukraine

THE ESTABLISHMENT OF INFORMATION-CONSULTATIVE CENTERS IN ORDER TO ENSURE SAFE USE OF NON-WOOD FOREST RESOURCES ON THE TERRITORY CONTAMINATED BY RADIONUCLIDES

The accident at the Chernobyl NPP caused significant contamination of the territory of Ukraine. Forest plantations performed their natural functions and protected settlements and agricultural areas from more severe contamination. However, forest accumulated considerable amount of radionuclides which caused their accumulation in different species of plants and animals. Forests of Ukrainian Polissia were severely contaminated by radiation. At the same time, forests of these regions are rich in medicinal and berry-like plants and mushrooms; large areas of pine and birch plantations, which are traditionally broached, grow there; the population of the region widely uses forest pastures and hayings. Therefore, it is necessary to rise safety of population living on the territory contaminated by radionuclides: to rise the level of awareness of the population living on the territories of Ukrainian Polissia as for the use of non-wood forest products by establishing information-