

**INFORMATION ON QUANTITATIVE DETERMINATION OF
INTERPHASE AGNOR IN LYMPHOCYTES NUCLEUS OF COWS
VENOUS BLOOD WHICH WERE KEPT ON TERRITORIES OF
FOREST ZONE OF UKRAINIAN WOODLANDS, WHICH ARE
POLLUTED BY RADIONUCLIDES DUE TO CRASH AT CHORNOBYL
AES.**

Vysotskyj A., Demchuk M.

*Lviv National Academy of Veterinary Medicine named after S.Z. Gzhytskyj, Dept. of Animal Hygiene, 50,
Pekarska str., 79010 Lviv, Ukraine*

Introduction

Sensitivity of organism in live – stock to constant irradiation by low dozes of ionic radiation demands the diligent research. During last years it was determined that alimentary factor is one of the fundamental in radionuclides coming in organism and as an important factor in link of prophylactic system of ecological protection including the population, which lives on territories, polluted with radionuclides.

A number of scientists think, that negative results of crash at ChAES now have less definite character (in comparison with prognosis). It may be connected with high adaptative peculiarities of gene apparatus of living mass of simple and higher organism, which were formed during the period of time when the living forms during its evolutionary development had just been under radiative influence of the environment. Several generations were sufficient for the adaptation to the action of ionic irradiation to the action of many representatives of flora and fauna even in 50 km zone/ From the other hand, during the years from the time of crash, the migration of mineral substance, accelerated by reclamation works also promote diminish of radionuclides in soil, agricultural, fields. Bat another situation is in wooden regions which are polluted by radioisotopes. An executive role of natural panel during the crash at ChAES, forest protecting the considerable quantity of radionuclides, keep them till this time, which leads to long-term pollution of wood and adjoined territories. The purpose of our investigation was to study the influence of factors of environment, which were aroused as a result of crash at ChAES on velocity of blood cells proliferation of lymphoid stemb during the process of blood-forming in dairy cows, which were kept in wood zones of Ukrainian woodlands, polluted by radionuclides.

Material and methods.

Methods of research. The experiments were done on cows of Black-Spotted breed, which are at the age of 5-6 years in private economies. By the principle of analogy it was formed two experimental and one control groups of animals (6 cows in each). Animals of both experimental groups were accommodated in zone of guaranteed sending back (cesium 137 – 5,0-15 Ki km/sq). Cows grazing of the first experimental group was done on pastures, which were far from wood to a great extent, and the second experimental group – near wood zone or on forest meadows, where on some areas which were polluted by cesium 137 was to 40 ki km/sq. Animals of control group were kept in ecologically clean zone. For the experiments animals were chosen only clinically healthy.

In all experimental and control animals blood was taken away from jugular vein in leucocytes, where were in found out generally accepted methods AgNOR (NOR –nucleus forming areas – place of chromosome DNA which codes ribosome RNA. The concentration of chromosome during the interphase is accompanied with merging NOR with forming of nucleus complexes which were found out with the help of light microscopy in leucocytes nucleus after coloring by colloid silver in smear of venous blood.

Results

Received information is shown in the Table. The analysis of these facts had showed, that is animals of the first experimental group an average quantity of AgNOR in leucocytes of blood was of average 0,03.

Information due to the definition of interphase AgNOR in leucocytes nucleus of venous blood of live stock

	Animals of control group	Animals of the first experimental group	Animals of the second experimental group.
1	0,01	0,00	1,00
2	0,00	0,03	0,80
3	0,03	0,01	1,03
4	0,00	0,00	1,20
5	0,02	0,00	1,1
6	0,00	0,00	0,8
M	0,03	0,01	1,22****
±m	0,02	0,02	0,12
P(T<=t)		0,051	0,0006

The reliability of difference between numerical results

* P<0,05

***P<0,01

** P<0,02

**** P<0,001

Fibril centers in nucleus of lymphocytes and hasn't essential difference from given exponent in control group. An average quantity of NOR in nucleus of lymphocyte in cows of

experimental group was 1,22 in 40,6 times exceeds this exponent in cows of control group of quantitative definition of interphase AgNOR in nucleus of leucocytes of venous blood.

Discussion – conclusion.

Received information testifies that even in long –term period (19years) after crash at ChAES, there are a considerable quantity of radionuclides in wooden territories in cows, which were pastured in these zones it was observed the rise of proliferative activity of blood cells, specifically white growth – it confirms that it is the increased quantity of interphase AgNOR in nucleus of blood leucocytes in comparison with animals of control group and those which were kept out of wood zones. Such accelerated proliferation of blood cells threatens the development of neoplasm process, and in regard to cows to leucosis of in regard to cows – leucosis of infectious and non –infectious character.

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