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PASSIVE LIHENOINDYKATSIYA IN THE ANALYSIS OF AIR QUALITY LUTSK

Ivantsiv O.V.
Lutsk National Technical University, ivv@email.ua
Supervisor - Fedonyuk V.V., candidate of the geographical, associate professor.

Оценили экологическое состояние атмосферного воздуха на исследуемой территории. Построили лихеноиндикацийные оценочные карты относительной чистоты воздушной среды для г. Луцка.

The quality of the environment in which we live - is one of the important factors of our health and well-being. This determines the relevance of the study on bioindication analysis of the current status of air Lutsk. In studying the distribution of lichens we have gathered a large collection. The most common species of lichens in the city Lutsk, scum-like - hrafis (light gray) ksantoriya (green-yellow) archill (green); Bushy - oral, kladoniya, Icelandic moss; turn pages - hipohimniya (ash-gray bush) Parghelia (green-yellow bush). Steps to determine the level of air pollution by passive lihenoindykatsiyi were as follows: 1. In the district choose to twenty-old trees, which are located at a certain distance. 2. Each tree calculate a percentage degree of coverage of moss trunk of the formula: (number of whole squares) + (number of squares netsilyh / 2) = degree of coverage of lichens (%). 3. For this we use mosaic (10 to 10 cm of transparent material). It is applied to a height of 150-180 cm and count the number of squares covered with lichens (Pic.1).

Pic. 1 – *Assessment of lichens covering tree trunk*

4. Carried out calculations using formula (number of whole squares) + (number of squares netsilyh / 2) = degree of coverage of lichens (%). Example 5 whole squares (ie completely filled lichens) 8 netsilyh squares (that are half or less than half the square filled) / 2 = 9% (overall degree of coverage). 5. The result brings to

the table. (Need to be careful as often turn pages lichens growing on the scum-like, so the calculation must be conducted separately scum-like, turn pages separately). 6. Using Table H.Trassa -. Scale to determine air pollution on species of lichens, assess the degree of contamination of the air in the investigated area. Table 1 shows an example of the consolidated results of the study for the area adjacent to the sugar factory.

Table 1 – *lihenoindykatsiyi in the area surrounding the sugar factory. The object of study - 15 trees, tree - small-leaved lime*

№ trees	The distance to the object tree (plant)	Number of squares filled completely	Netsilyh number of squares filled with lichens	The total extent of coverage,%
№ 1	80м	1	2	2%
№ 2	80м	2	4	4%
№3	50м	2	4	4%
№4	50м	2	3	3,5%
№5	50м	2	2	3%
№6	50м	1	1	2%
№7	30м	5	10	10%
№8	20м	5	8	9%
№9	20м	11	10	16%
№10	30м	8	6	11%
№11	30м	6	5	8,5%
№12	20м	7	12	13%
№13	20м	9	6	12%
№14	20м	7	10	12%
№15	10м	27	19	5,5%
Average				7,7 %

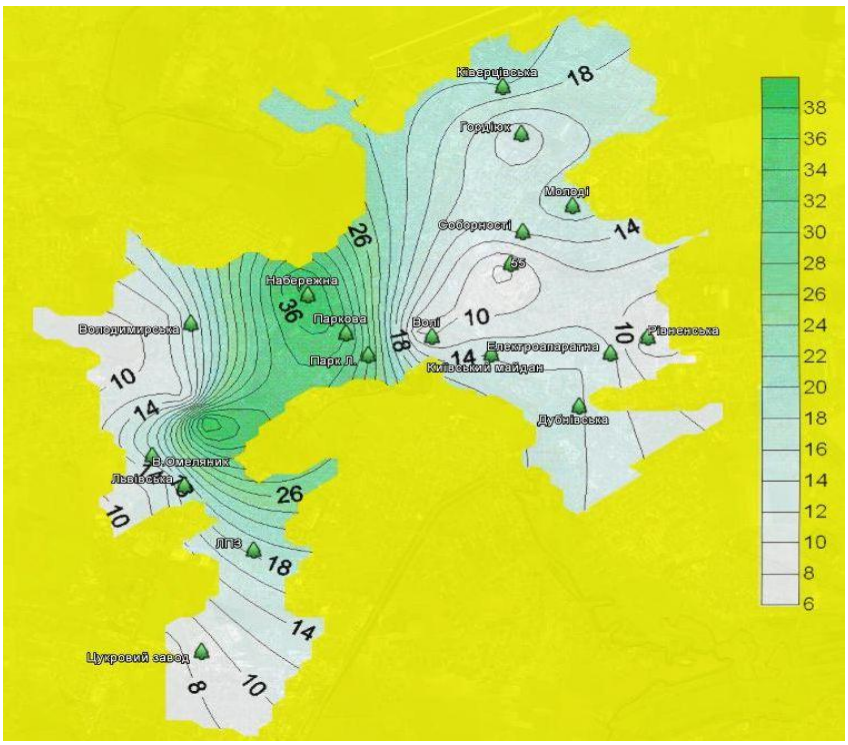
With passive lihenoindykatsiyi we analyzed the state of the air in all districts Lutsk. After the field study statistically analyzed the results and make conclusions regarding air quality in the village.

According to a survey of neighborhoods of the city was also designed kartoshemy zones spread lichens and environmental indicators of air in the surveyed areas of Lutsk (Pic. 2 and Pic. 3). Highlighted areas varying degrees of coverage lichen trees in the study area (Pic. 2) and zones of low, medium and high air pollution (Pic. 3).

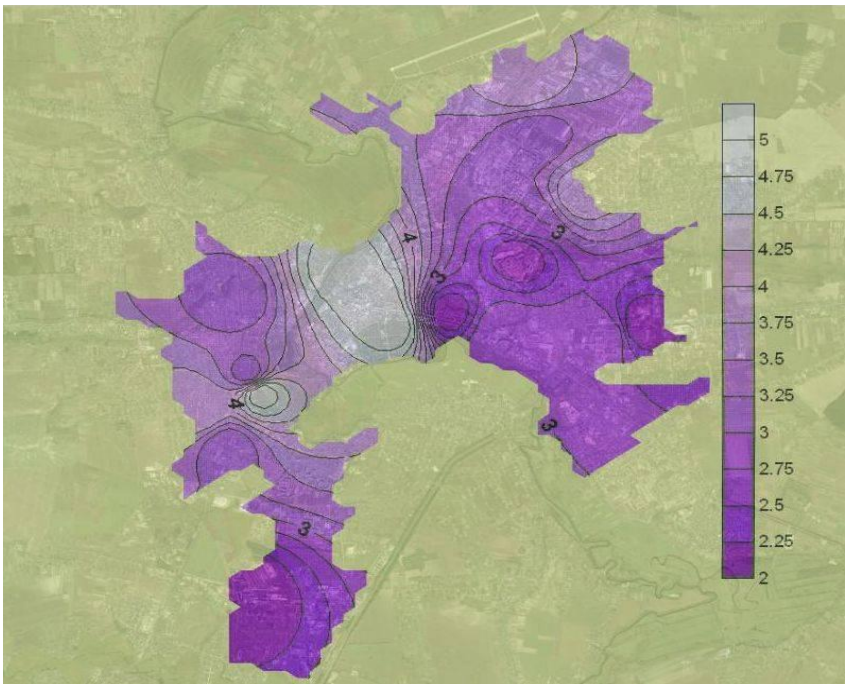
The analysis of our results shows a fairly threatening environmental air quality in the industrial area of the city Lutsk and along major highways. Overall, clean areas, in terms of lihenoindykatsiyi, were the only park area.

The conducted study, we assessed the general environmental air quality in the city Lutsk. Good and satisfactory condition, this is the only city park areas (degree of cover trees lichens more than 30-40%), and near major highways and industrial sites (near the brick factory number 3 (st. Industrial, Lvivska region), there is a high degree of contamination acidic aerosols.

Particularly alarming is the situation in the area where sugar factories received the lowest result - 7.7% covering tree trunks lichens.



Pic. 2 – *The degree of coverage of lichens trees in the area of research*



Pic. 3 – *Environmental air quality in a number of districts surveyed Lutsk*

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