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THE IMPORTANCE OF GREEN SPACES IN THE SOUTHERN ARAL SEA REGION

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Abstract
Green spaces located in the path of the polluted air flow divide the initial concentrated flow into different directions. Thus, harmful emissions are diluted with clean air, and their concentration in the air decreases. It should be noted that the gas-protective role of green spaces is largely determined by the degree of their gas resistance. Plants with increased photosynthesis intensity have less resistance to gases. The peculiarity of green spaces is also that they absorb carbon dioxide from the air and release oxygen as a result of photosynthesis.

Keywords: green spaces, pollution, dust-retaining, Aral Sea region, gas resistance, trees, shrubs.

Introduction

In conditions of continuous increase of man-made loads on urban residents, the vegetation-covered spaces of the city become a powerful means of partially neutralizing the negative impact of negative factors of life in urbanized territories.

The stability, durability, manufacturability and efficiency of tree plantations in the urban environment and settlements are primarily determined by their assortment. Therefore, the range of woody plants developed on a scientific basis not only makes it possible to effectively solve environmental and architectural planning problems of settlements, but also significantly reduces material costs in the field of green construction [12].

On the basis of long-term introduced tests of the condition of plants in green spaces in cities and settlements, in terms of winter hardiness, drought resistance, resistance to pests and diseases, as well as decorative durability and biomorphological features, environmental safety, most publications of far abroad and CIS countries are devoted. A

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similar goal in the field of greening settlements is being set in the countries of Western Europe. These issues are also reflected in the studies of scientists of Central Asia, including the Republic of Uzbekistan [2, 12, 13].

Green spaces purify the city air from dust and gases. Polluted air flow, meeting a green array on its way, slows down the speed, as a result of which, under the influence of gravity, 60-70% of the dust contained in the air settles on trees and shrubs. A certain amount of dust falls out of the air stream, bumping into trunks, branches, leaves. A significant part of the dust settles on the surface of leaves, needles, branches, trunks. During the rain, this dust is washed off to the ground.

Under the green spaces, due to the temperature difference, descending air flows arise, which also carry dust to the ground. The spread or movement of dust is hindered not only by trees and shrubs, but also by lawns, which delay the forward movement of dust driven by the wind from different places. Among green spaces, the dustiness of the air is 2-3 times less than in open urban areas. Tree plantings reduce the dustiness of the air even in the absence of foliage cover. In the depths of the green massif, at a distance of 250 m from its edge, the dustiness decreases by 2.5 times.

The dust-retaining properties of various tree species and shrubs are not the same and depend on the morphological features of the leaves. Rough leaves and leaves, the surface of which is covered with villi, like lilac, detain dust best. If we take the amount of dust retained by 1 cm2 of the surface of a poplar leaf for 1, then the amount of dust retained by the same area of a maple leaf will be 2, lilac 3, elm 6. The dust deposited on the leaves is periodically washed off by rain, blown away by the wind, and the leaves are again able to retain dust [1, 3, 5].

The dust-retaining properties of various tree species and shrubs are not the same according to the literature data. In particular, pubescent or sticky leaves retain significantly more dust than smooth ones (Table 1).

Table 1 Dust-retaining properties of some plants in the south of the Aral Sea

Plant	Total area of the sheet	Quantity	
		total, kg	kg/m²
Trees			
Ailant tall	208	24	0,12
Robinia pseudoaction	86	4	0,05
Feathery elm	66	18	0,27
Rough Elm	233	23	0,10

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Gledichia	130	18	0,14
Field maple	171	20	0,12
Willow	157	38	0,24
Ash - leaved maple	224	33	0,15
Mulberry	112	31	0,28
Canadian poplar	267	34	0,12
Green	195	30	0,15
ash Common ash	124	27	0,22
Shrubs			
Acacia yellow	3	0,2	0,07
Beresklet European	13	0,6	0,05
	2	**3**	**4**
Red Elderberry	8	0,4	0,05
Narrow - leaved loch	23	2,0	0,09
Common lilac	11	1,6	0,15
Spirea	6	0,4	0,07
Grape	3	0,1	0,03
Privet	8	0,3	0,04

Among green spaces, the dustiness of the air is 2-3 times less than in open urban areas. For example, tree plantations reduce the dustiness of the air during the growing season by 42.2%, and in the absence of foliage cover by 37.5%. Even relatively small urban gardens reduce the dustiness of urban air in the summer by 30-40%.

Green spaces significantly reduce the harmful concentration of gases in the air. For example, the concentration of nitrogen oxides emitted by industrial enterprises decreases at a distance of 1 km from the emission site to 0.7 mg/m3, and in the presence of green spaces to 0.13 mg/m3 [4, 6].

Green spaces, absorbing harmful gases from the air and neutralizing them in tissues, contribute to the preservation of the gas balance in the atmosphere, biological purification of ground air. The principle of sanitary protection zones is based on the use of gas-cleaning properties of tree and shrub plantations.

Harmful gases are absorbed by plants during transpiration, and solid aerosol particles settle on leaves, trunks and branches of plants. Landings located across the flow of

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polluted air break up the initial concentrated flow into different directions. Thus, harmful emissions are diluted with clean air, and their concentration in the air decreases. The most important property of plants is their ability to reduce bacterial air pollution, increase its ionization, and enrich it with various kinds of phytoncides [8, 9, 10, 14].

It should be noted that the gas-protective role of green spaces is largely determined by the degree of their gas resistance. The slightly damaged species include elm (rough and smooth), tree willow, ash maple, aspen, poplar (Berlin, balsamic, Canadian and black), Siberian apple tree, yellow acacia, wild cherry, black currant; medium-damaged - basket willow, Tatar maple and others. Plants with increased photosynthesis intensity have less resistance to gases. Of the grasses, meadow fescue has the greatest resistance to gases, and white vole has the least. Fertilizing with nitrogen fertilizers, as well as liming, which improve the water regime of soils, significantly increase the resistance of plants to gases. Plants such as white and silver maple, common and white willow, warty birch, white acacia, virgin juniper, black and pyramidal poplar, oriental biota, contribute to an increase in the level of air ionization - the concentration of light ions under their crowns reaches 500 ions/cm3.

Mixed coniferous-deciduous plantings, as well as many flowering plants, improve the ionic regime of atmospheric air to the greatest extent [9, 10, 11]. Green spaces reduce the level of urban noise by attenuating sound vibrations at the moment of their passage through branches, foliage and needles. Noise reduction depends on the density of the crown, the density of foliage, the location of plantings in relation to the noise source and in proportion to the width of the greened strip [7].

It should be emphasized that in the real conditions of the urban environment, only significant green areas have a noticeable effect on the microclimate (including the thermal regime) of the territory. That is why we should strive to expand the area of green spaces in cities and towns of Karakalpakstan.

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