



## Oak ecosystem succession of the Northern Caucasus

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English oak (*Quercus robur* L.) along with its well-known good properties has a high sanitary-hygienic and curative potential. Its volatile metabolites (VM) influence bacteriostatically *Staphylococcus aureus* 209r, oppressing it in vitro by 85% compared with the control, and *Escherichia coli* by 45%. There is the least amount of epiphytic microorganisms on the leaves of *Q. robur* L. compared with some tree species [1]. In addition, VM of *Q. robur* L. have direct milieu (hypotensive) effects on the organism under its canopy, lowering blood pressure by 20-25 mm Hg [2].

A.P. Kazankin (1993) [4] calculated the prehistoric formula of forest species composition of Caucasian Mineral Waters region (Northern Caucasus): 6Qr3Crp1Fr which was based on the theory of calcium-magnesium absorption complex. According to the theory, underground mineral water, soil, forest litter and the leaves of ground vegetation of the area have the same ratio of the cations Ca and Mg - calcium-magnesium index [3]. Hence oldgrowth in the region consisted of oak (Qr) by 60%, hornbeam (*Carpinus-Crp*) by 30% and ash (*Fraxinus-Fr*) only by 10%. Currently, the formula of the forests of the region has been changed by man: 5Fr3Crp2Qr. The proportion of oak forests has decreased to 20%, the proportion of ash has increased by 50%, but the proportion of hornbeam hasn't changed.

So it is relevant to restore oak forests of the region in the former ratio to other forest-forming species - ash and hornbeam. Taking into consideration the change of economic formation of society in Russia, it is extremely important to restore natural seed oak forests. Therein the luminance of surface areal is a limiting factor. We have calculated that the natural recovery of oak forests is possible providing observation of optimal moisture standards and soil fertility in combination with solar light within 10-24% from the light of open space. Measures for promotion of oak natural regeneration in mountain resorts of the Northern Caucasus can be found in elaborate recommendations [5].