

Therapeutic environmental factors in the climatic spa Lázně Kynžvart in the Czech Republic

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Climatic spa Lázně Kynžvart



- Foothill area on the south-west slope of the Slavkov in the west
- Forest high and constant air humidity
- In the middle of extensive forests of mixed character
- The high degree of air purity



Aim of the study

- 1) The aim is to determine the concentration of monoterpenes and negative air ions at selected sites in the climatic spa Lázně Kynžvart.
- 2) The results could help to define and delimit the specific landscape unit "**Therapeutic Spa Landscape.**"



Introduction

Monoterpenes

- Pinenes - important representatives of the monoterpenes
- Occurring in plants - part of the resins of conifers
- Lipid-derived substances - volatile, a characteristic smell, are used in growth regulation, defence mechanisms, important signalling molecules
- 10-carbon compounds - joining two isoprene units
- Bioactive molecules - therapeutic effect

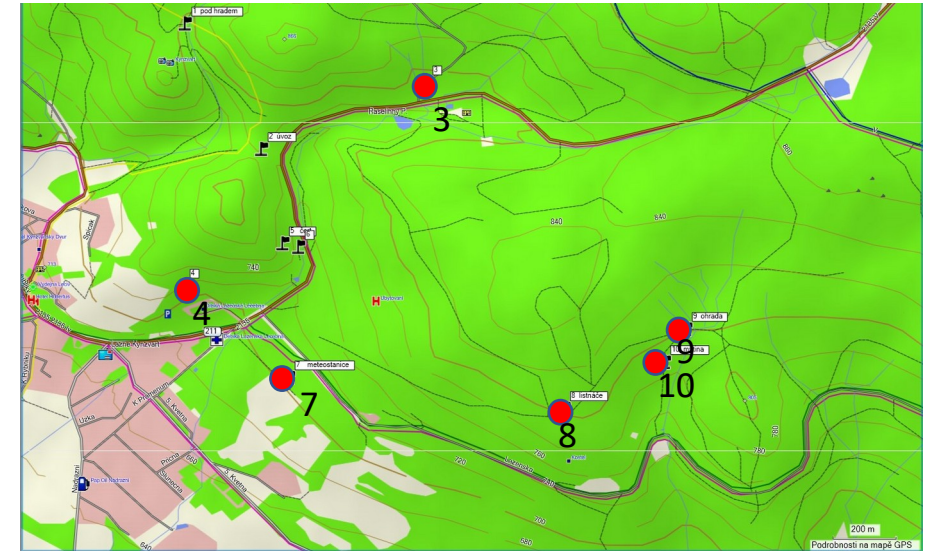
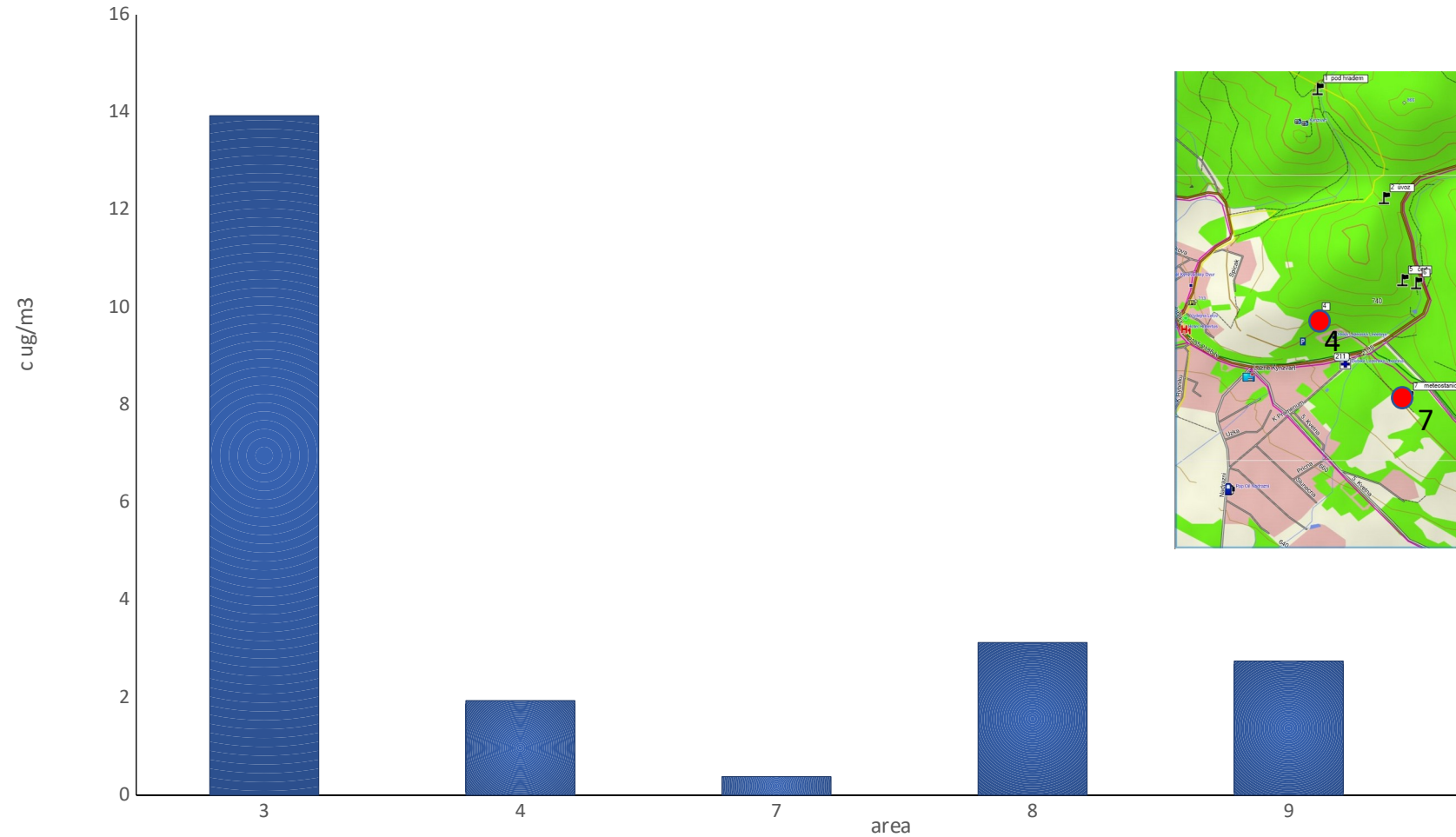
Negative air ions

- The forest produces a higher amount of negatively charged particles in the air
- Concentration of negative air ions is an important indicator of the quality of the healing climate
- Electrically charged molecules or atoms in the atmosphere
- Sources: radiant or cosmic rays, sunlight, plant-based sources of energy, the shearing of water droplets
- Multiple benefits on humans-inhibit the growth of some microorganism, regulating the immune system



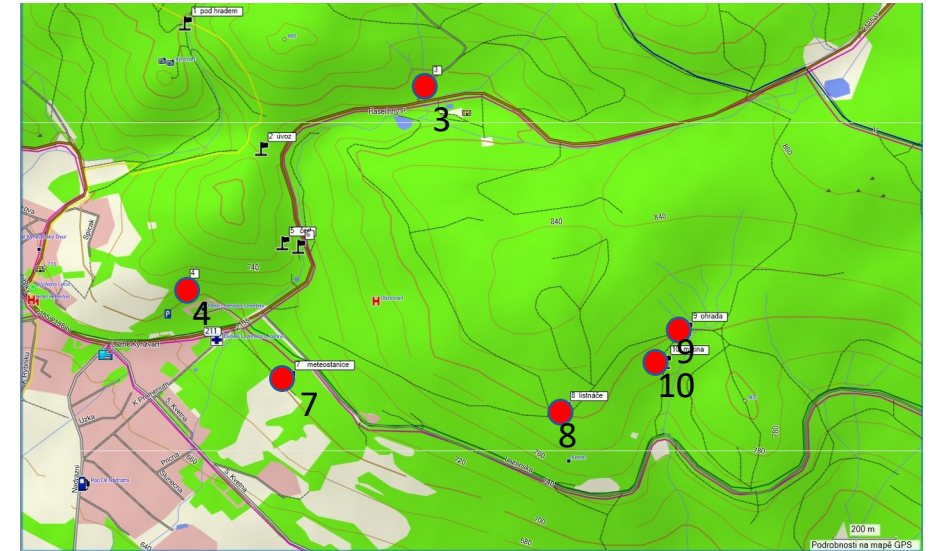
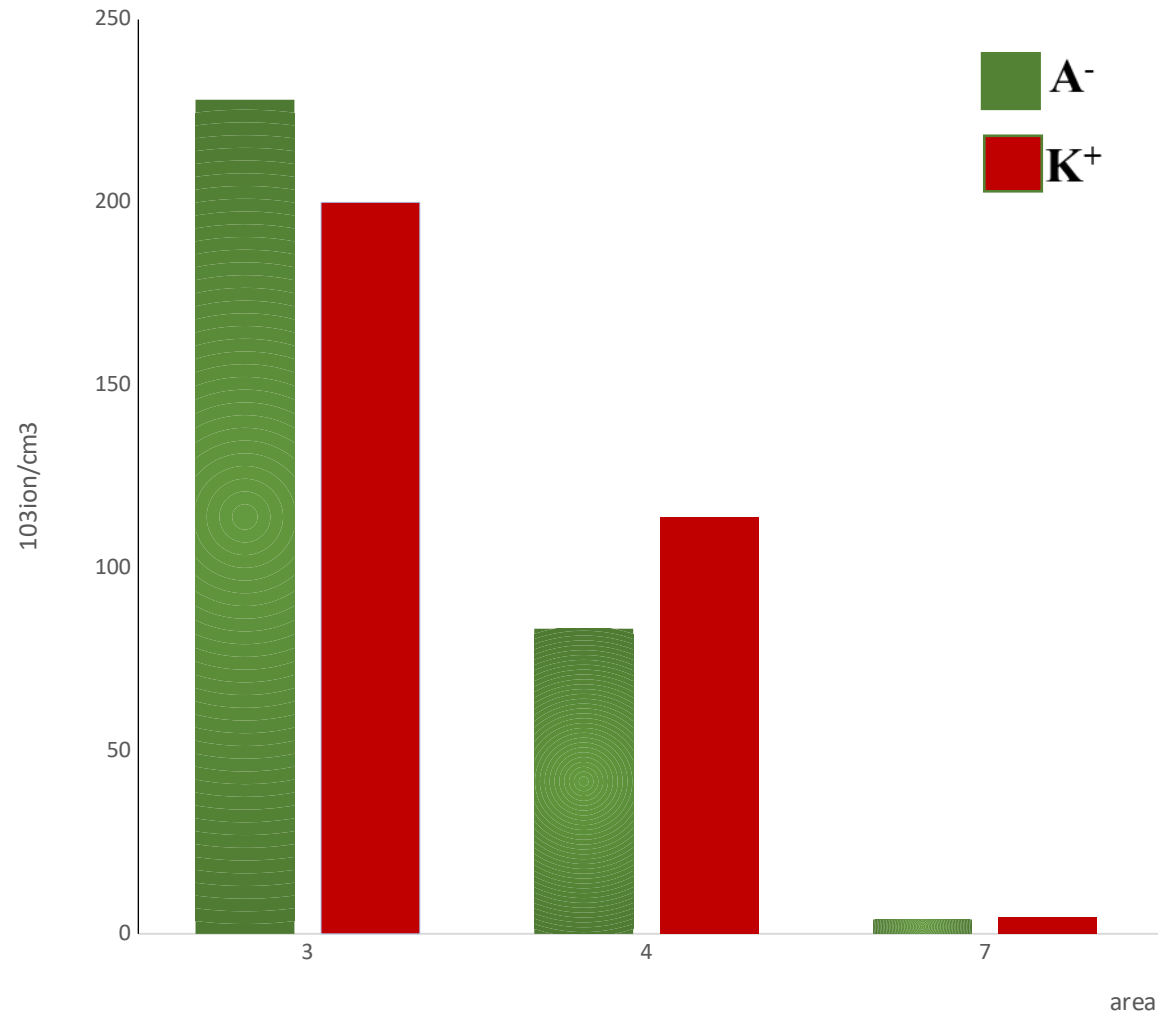
Results I-Monoterpenes

Average mass c Σ of monoterpenes in the air at 6 selected sites



Results II-Ion microclimate

The concentration of negative (A^-) and positive (K^+) ions at 6 selected sites



Conclusion

The use of natural inhalation of these compounds in controlled and medically monitored field treatments of patients could potentiate the therapeutic effect of the spa.

However, a direct relationship between elevated concentrations of pinenes and negative air ions and the spa-therapeutic-rehabilitation effect on humans needs to be confirmed in a clinical study.

