

Lichens

- body of lichens – thallus
- thallus could be: leafy, bushy and crustose
- is a composite organism that arises from algae or cyanobacteria living among filaments of multiple fungi species in a mutualistic relationship
- meaning: bioindicators for air pollution (SO₂ or NO_x) and pioneer organisms

Task no.1:

Look at the lichens scale below and describe the air quality (SO₂ concentration) within:

- The plot (1)
- Bus parking (EE1) (2)
- Street Rue Richard Coudenhove – Kalgeri (3)

Your notes:

1

2

3

More scientific research about lichens as a bioindicators:

<https://pubmed.ncbi.nlm.nih.gov/11584645/>

Lichens scale as : SO₂ bioindicator

1: SO₂ in the air above 170 µg/m³

Almost no lichens – very high level of pollution (where this can happen??.....)

2. SO₂ od 100 do 170 µg/m³

Some of the lichens could be present (what is their body?) - high level of pollution



Lepraria incana (L.) Ach



Lecanora conizaeoides Nyl. ex Cromb.

3. SO₂ 99-70 µg/m³

.....and crustose lichens commonly present



Xanthoria parietina (L.) Th. Fr.



Physcia adscendens (Fr.) H. Olivier.

4. SO₂ 69-50 µg/m³

You can see some lichens but not many



Hypogymnia physodes (L.) Nyl



Parmelia sulcata Taylor

5. SO₂ 49-40 µg/m³

A lot of lichens withstructure – sometimes the whole bark of a tree is covered by lichens



Evernia prunastri (L.) Ach.



Pseudevernia furfuracea (L.) Zopf

6. SO₂ 39-30 µg/m³

Many lichens from 5 stage and 6 stage- very common on trees bark and manyandlichens on branches



Usnea filipendula Stirt.



Platismatia glauca (L.) W.L. Culb. & C.F. Culb.

7. SO₂ below 30 µg/m³ - ONLY VERY SENSITIVE lichens



Ramalina fraxinea (L.) Ach.



Lobaria pulmonaria (L.) Hoffm.

Brochure made according to Polish Lichens scale:

„OCENA STANU ŚRODOWISKA NATURALNEGO SZCZECIŃSKIEGO PARKU KRAJOBRAZOWEGO Z ZASTOSOWANIEM SKALI POROSTOWEJ” by Anetta Wieczorek Katedra Ekologii i Ochrony Środowiska, Uniwersytet Szczeciński w Szczecinie

<https://www.lasy.gov.pl/informacje/publikacje/dla-nauczycieli/jakim-powietrzem-oddycham/jakim-powietrzem-oddycham-klucz.pdf>