DIN EN 16413:2014-08 (E)

Ambient air - Biomonitoring with lichens - Assessing epiphytic lichen diversity

Contents

Page

Foreword 3

0 Introduction 4
0.1 Biomonitoring and air quality 4
0.2 Biomonitoring and EU legislation 4
0.3 Biomonitoring with lichens 5

1 Scope 6

2 Terms and definitions 6

3 Principles 7

4 Equipment 8
4.1 Field work preparation equipment 8
4.2 Field equipment 8
4.3 Laboratory equipment 9

5 Sampling 10
5.1 General 10
5.2 Sampling objective 10
5.3 Study type considered 10
5.4 Sampling design 11
5.4.1 General 11
5.4.2 Prior to sampling 11
5.4.3 Standard tree species selection for a survey 11
5.4.4 Standard tree parameter 12
5.4.5 Sampling scheme 13
5.4.6 Sampling unit 16
5.4.7 Sampling density 16
5.4.8 Surveying lichens 17
5.4.9 Identification in laboratory of critical specimens 17

6 Lichen species frequencies 17

7 Recommendations for Quality Assurance and Quality Control 17

Annex A (informative) Example of survey sheets 20

Annex B (informative) Calculating lichen diversity metrics 22

B.1 General 22
B.2 Lichen Diversity Value (LDV) 22
B.3 Diversity value of the indicators of eutrophication (e.g. LDVN sensu VDI 3957 Part 13) 23

Annex C (informative) Suitable tree species 24

Annex D (informative) Sampling density calculations 25

Annex E (informative) Information needed at the end of the survey 26

Annex F (informative) Main phases of application of this European Standard 27

Bibliography 28