



Steffen Pallarz (Autor)

Data driven classification of host-plant response (virus-plant)

Berliner ökophysiologische und phytomedizinische Schriften

Steffen Pallarz

Data driven classification of host-plant response (virus-plant)

Band 44

Inoculation with viruses

symptome development

A. thalana (0.24.56 g/9)

C. spinos (0.24.14 g/9)

transcriptome expression

uProfiler

Cuvillier Verlag Göttingen
Internationaler wissenschaftlicher Fachverlag

<https://cuvillier.de/de/shop/publications/7739>

Copyright:

Cuvillier Verlag, Inhaberin Annette Jentzsch-Cuvillier, Nonnenstieg 8, 37075 Göttingen, Germany
Telefon: +49 (0)551 54724-0, E-Mail: info@cuvillier.de, Website: <https://cuvillier.de>



Contents

Abstract	I
Zusammenfassung	III
1 Introduction	1
2 Materials and Methods	7
2.1 Plant-Viruses	8
2.2 Model Plants	11
2.3 Mechanical Inoculation	12
2.4 ELISA	14
2.5 Sequencing	17
2.6 Transcriptome Analysis	20
2.7 Data Analysis	20
2.8 Pathogen Alignment	25
2.9 n-Gram Based Sequence Profiling for Alignment Free Transcriptome Analysis	25
2.10 Statistical Analysis	26
2.10.1 Welch's unequal variances t-test	27
2.10.2 ANOVA-Test	29
2.10.3 Principal Component Analysis	31
3 Results	33
3.1 ELISA-detection	42
3.1.1 DAS-ELISA for the detection of ArMV	42
3.1.2 DAS-ELISA for the detection of TSWV	42
3.1.3 DAS-ELISA for the detection of CLRV	46
3.1.4 TAS-ELISA for the detection of TSWV	46
3.2 Sequencing	50
3.3 Bioinformatical Analysis	50
3.3.1 Transcriptome Analysis	50
3.3.2 n-Gram Based Sequence Profiling	60
3.4 Validation by means of Pathogen Alignment	70
4 Discussion	72
A Appendix	i
A.1 Sequencing	ii
A.2 Pathogen Alignment	iii

Eidesstattliche Erklärung