

# Störung der Nährstoffverteilung in Blättern Eschenfadenblättrigkeitsvirus- infizierter Blumeneschen

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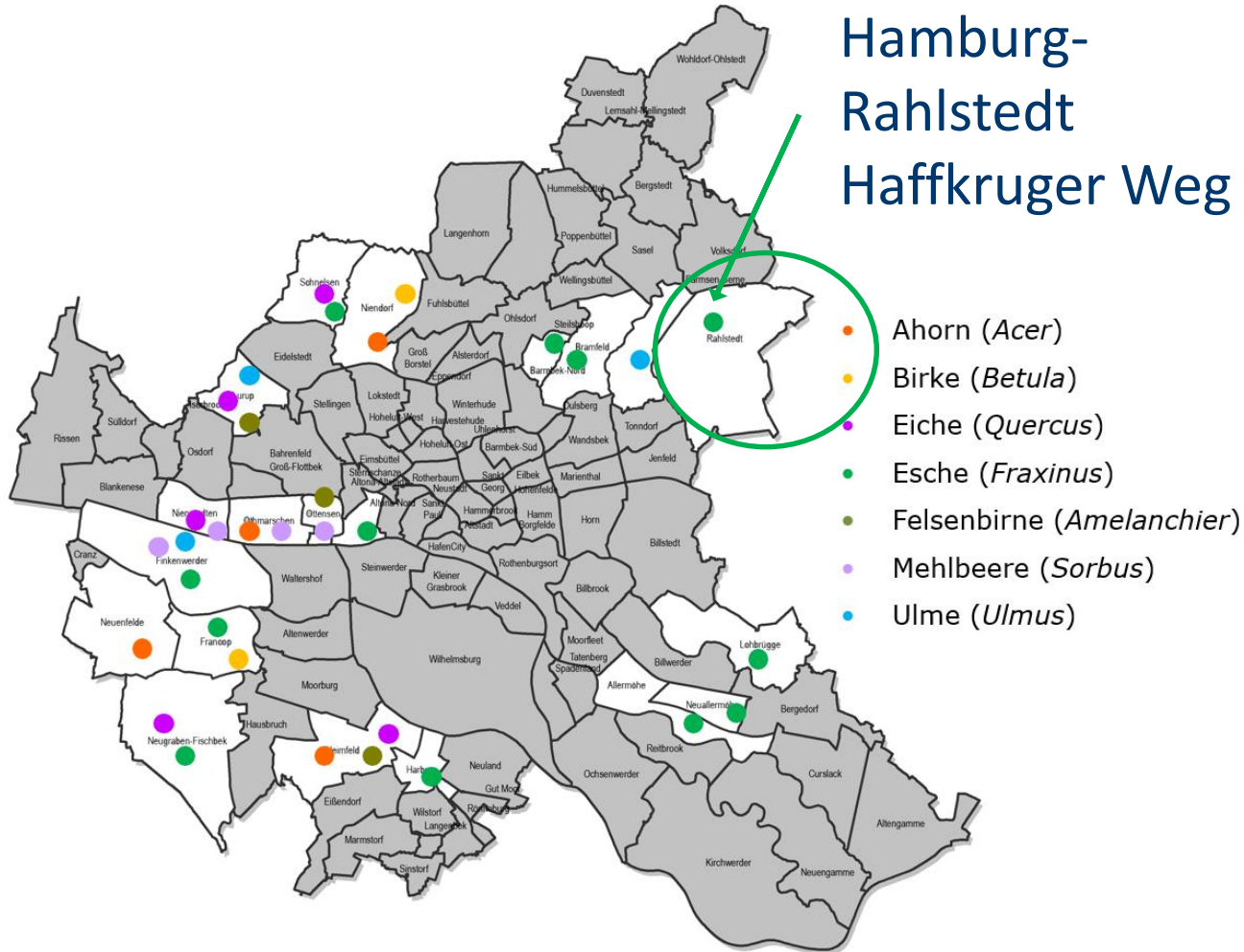
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# Introduction - Trial Site



## Hamburg- Rahlstedt Haffkruger Weg





# ASaV-related Symptoms

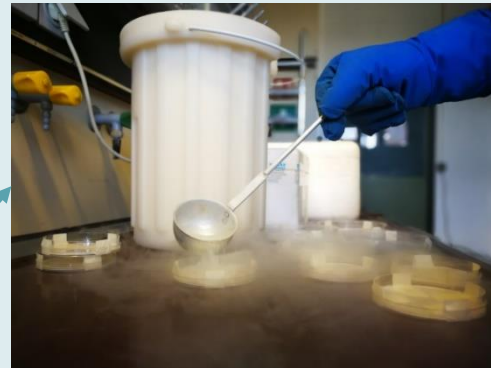
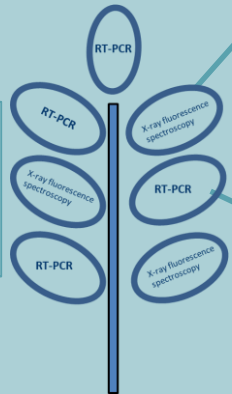




# Material and Methodes



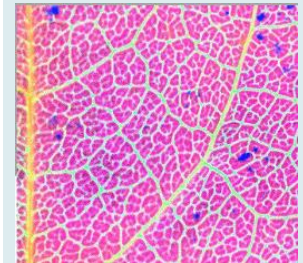
sampling of leaf with and without ASaV related symptoms



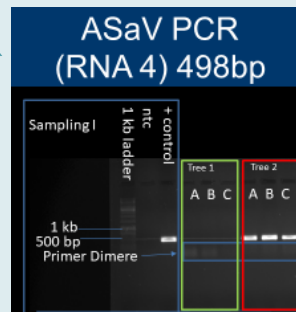
Petri dish press and liquid nitrogen treatment



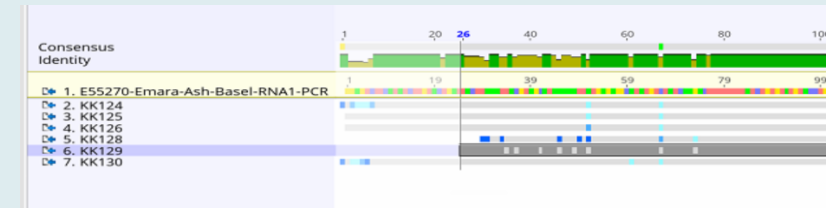
Freeze drying



Analysis with x-ray fluorescence spectroscopy based methods



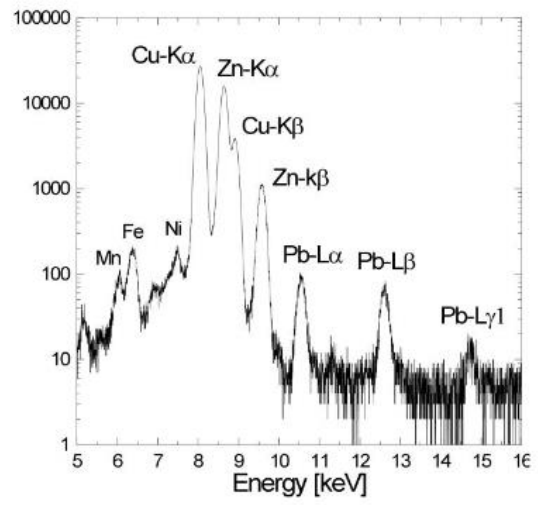
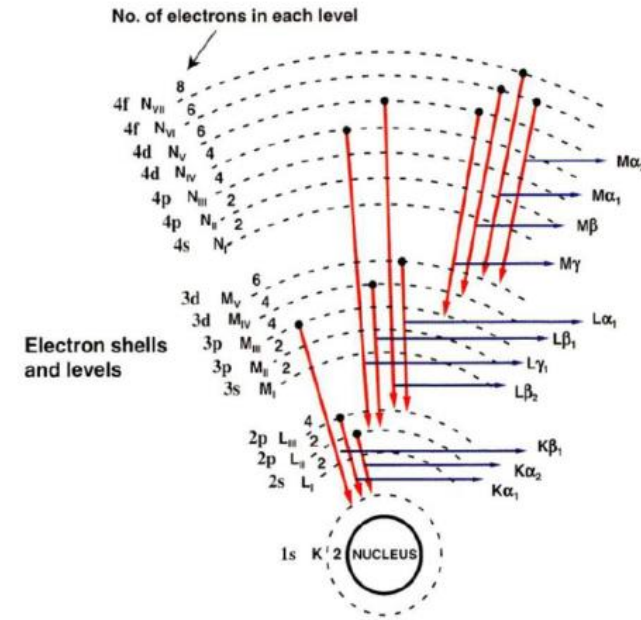
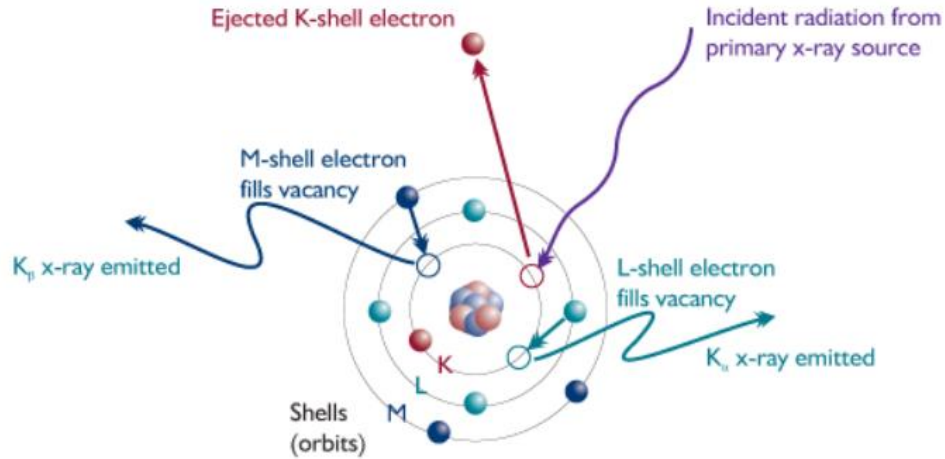
ASaV specific RT-PCRs and gel electrophoresis For ASaV detection



ASaV identification via Sanger sequencing of PCR-amplicons

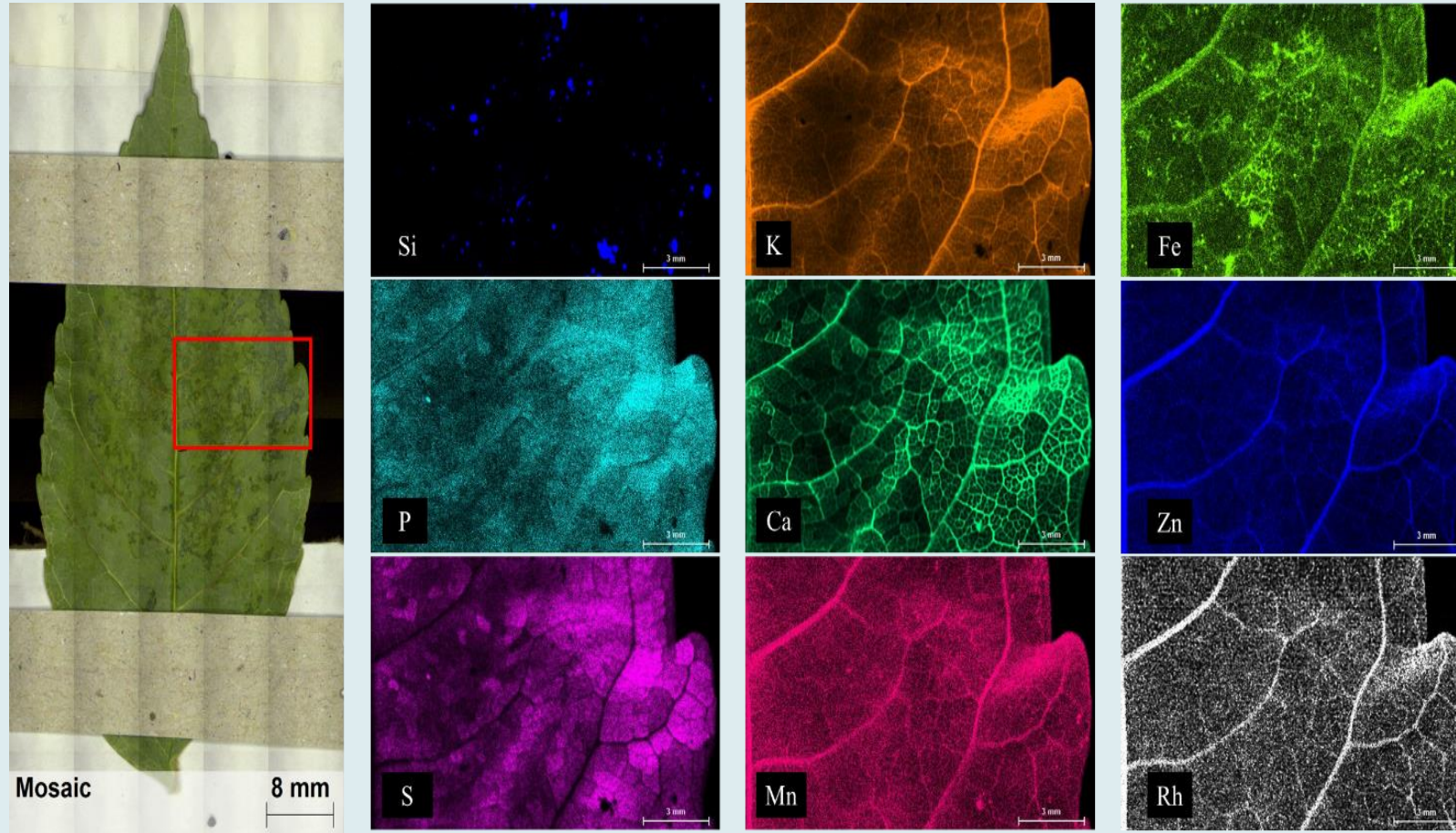


# x-ray fluorescence spectroscopy





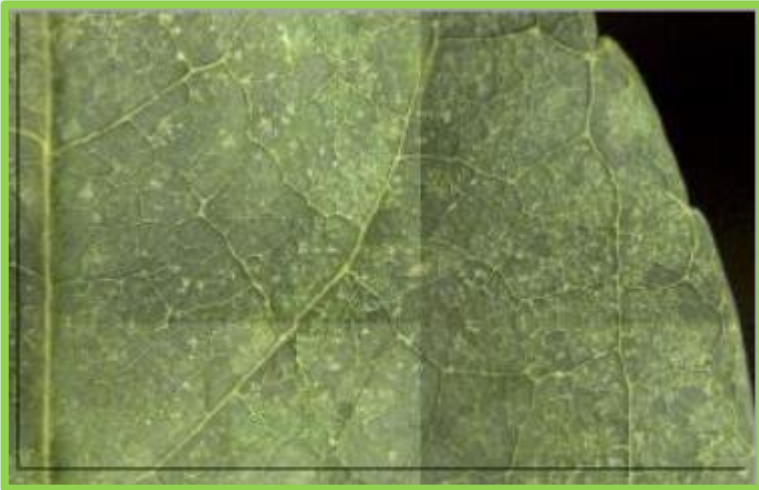
# $\mu$ -XRF Spectrometer Nutrient Mapping with **ESPRIT**



ESPRIT software (Bruker Nano GmbH, Berlin, Germany, version 1.3.0.3273) and further processed by PyMca 5.1.3 [Solè et al., 2007] and Datamuncher [ref.] software

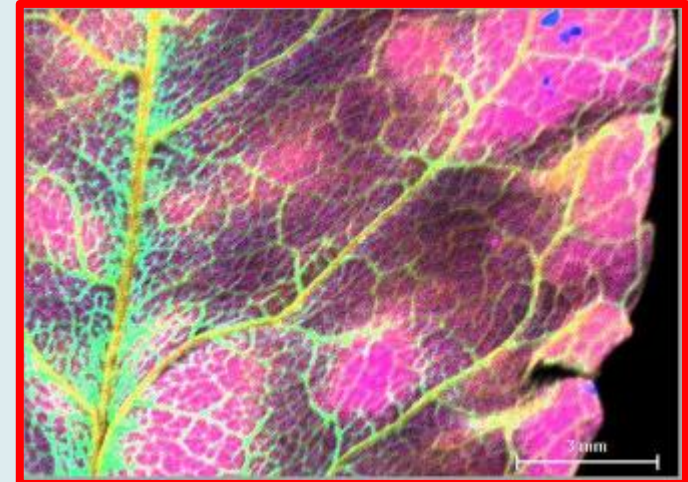
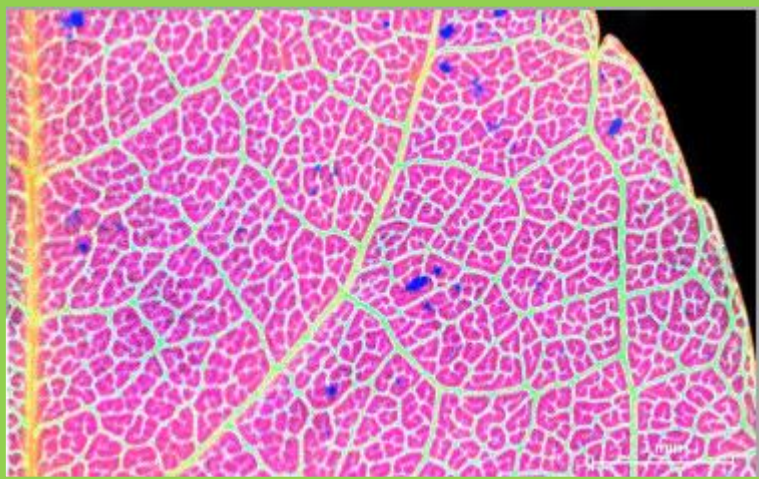


# Nutrient Distribution in *Fraxinus ornus* leaves



„healthy“

ASaV  
infected



Benchtop  $\mu$ -XRF spectrometer  
(M4 Tornado, Bruker Nano GmbH, Berlin,  
Germany)



# Calcium / Potassium Ratio



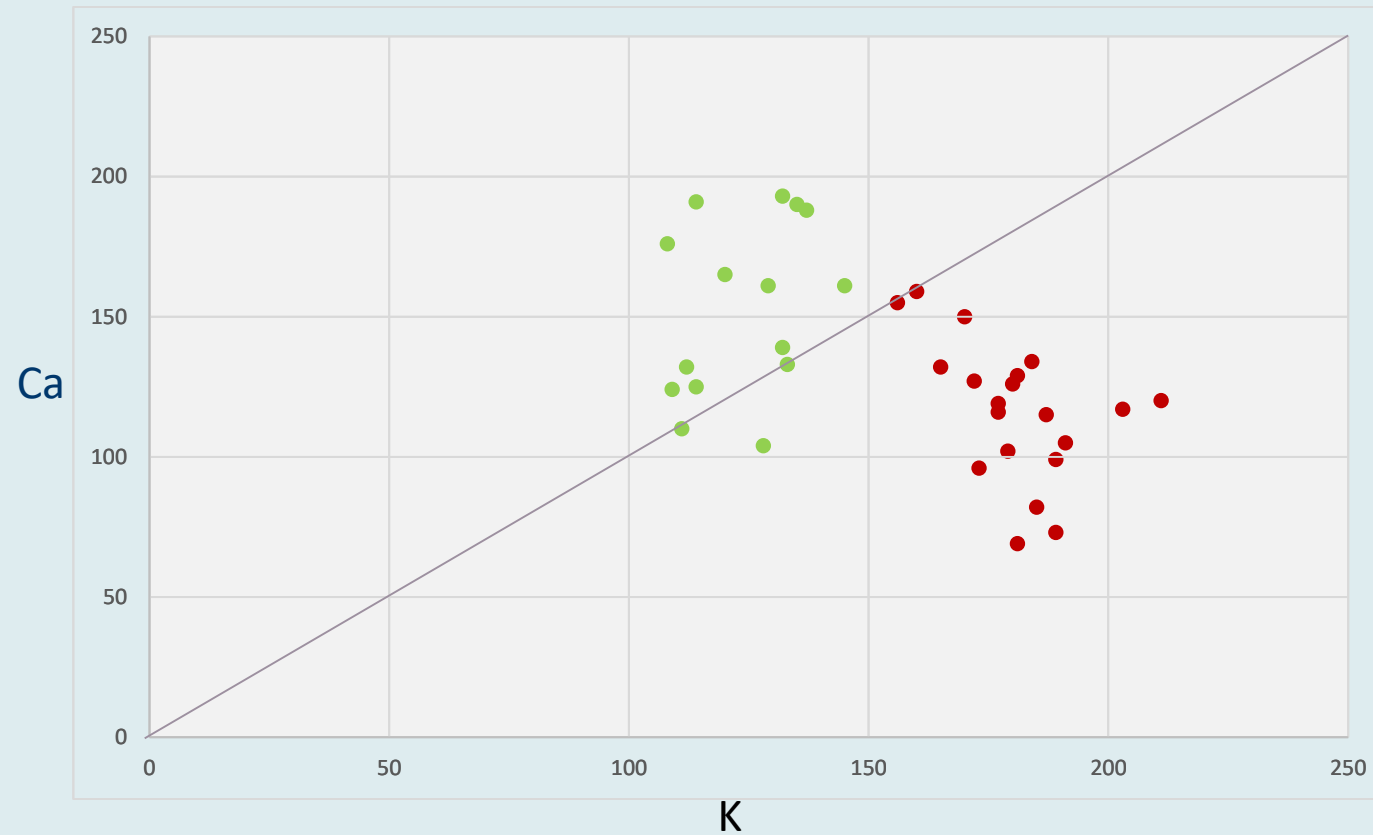
## Calcium/Potassium Ratio

N=35

n „healthy“ = 15 (one tree, two sampling dates in 2020)

n „ASaV-infected“ = 20 (two trees, two sampling dates in 2020)

- Additional leaf samples from more trees taken in 2021; need to be treated and analysed



portable energy dispersive XRF spectrometer (Thermo-NITON XL3t)





**Thank you  
for your  
Attention**

