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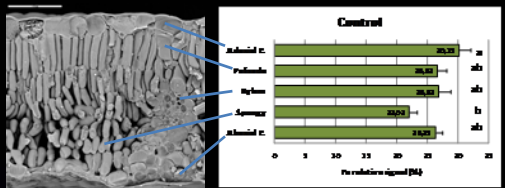
INTRODUCTION

Plant physiological processes take place in a complex cellular environment. Organs are complex structures made up of different tissues with distinct cell types. Traditional biochemistry involves the analysis of bulk samples containing a mixture of heterogeneous tissues, leading to a non correct interpretation of the results. This averaging effect can only be overcome by increasing the spatial resolution of analysis to a tissue- or even cell-specific level, in other words, by using image techniques.

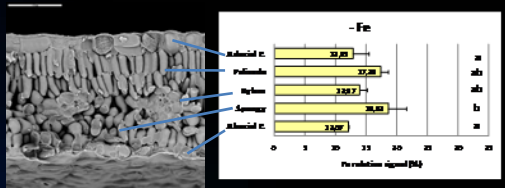
ELECTRON MICROSCOPY

LT-SEM (peach leaves)

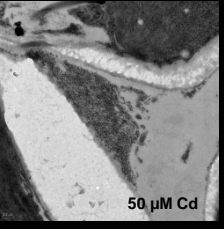
Control SPAD = 39.7 [Fe] = 95 mg Kg⁻¹



-Fe SPAD = 11.5 [Fe] = 70 mg Kg⁻¹

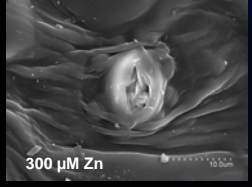
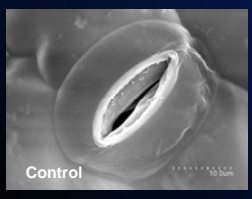


TEM (sugar beet leaves)

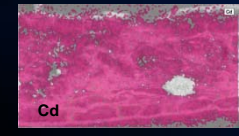
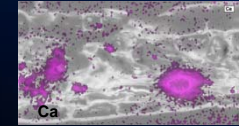
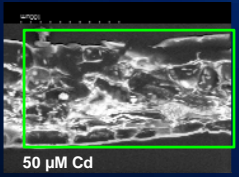


SEM (sugar beet leaves)

Surface imaging

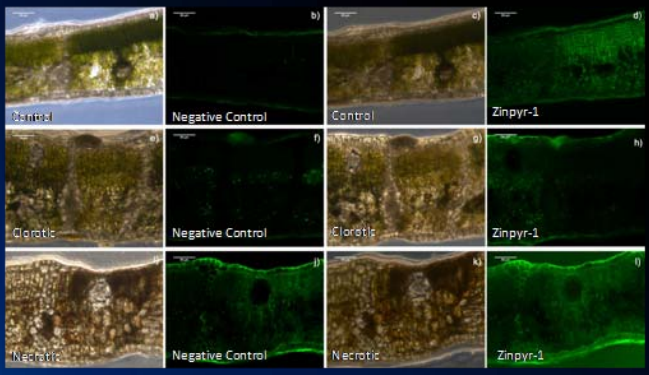


Elemental mapping

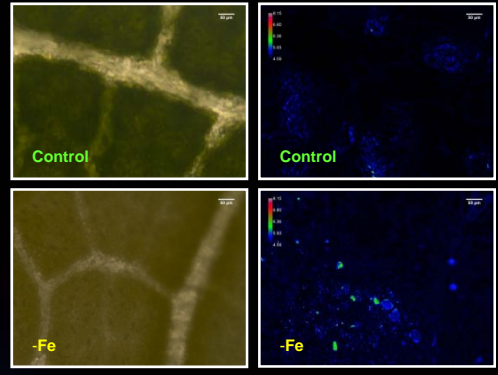


FLUORESCENT MICROSCOPY

Zn localization (pecan leaves)

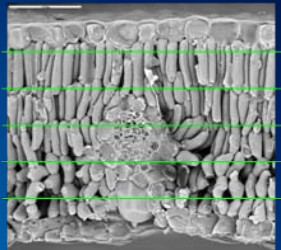
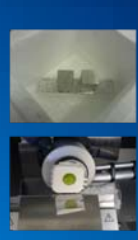


Apoplastic pH image analysis (peach leaves)



PARADERMAL CRYOSECTIONING

Pigments (sugar beet leaves)



- 0-40 μm Adaxial E.
- 40-80 μm Palisade
- 80-120 μm Palisade
- 120-160 μm Spongy
- 160-200 μm Spongy
- 200-240 μm Abaxial E.

