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Quantitative mapping of elements in basil leaves (*Ocimum basilicum*) based on cesium concentration and growth period using laser ablation ICP-MS

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1 **Quantitative mapping of elements in basil leaves (*Ocimum basilicum*) based on cesium**
2 **concentration and growth period using laser ablation ICP-MS**

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10 **ABSTRACT**

11 Quantitative elemental mapping of metallic pollutants in sweet basil was studied by laser
12 ablation (LA)-ICP-MS. For this, the sweet basil was cultivated in Hoagland nutrient solution
13 spiked with 100 and 1000 ng mL⁻¹ of Cs for 10 to 60 days. Then, the Cs distribution in collected
14 leaves was determined by LA-ICP-MS using lab-synthesized standard pellets based on NIST
15 1573a tomato leaves. For comparison, S, Ca, and K were also simultaneously determined in this
16 measurement with a ¹³C⁺ signal from the leaves as an internal standard. The obtained calibration
17 curves showed linear coefficient of determination (R²) of 0.991 for K and 0.999 for Cs. The
18 concentration of Cs measured in the basil leaves increased with growth period and pollutant

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