

# Unsolved analytical problems with C/S element analyzer and FAAS

*Meeting of the Heads of the Laboratories*

*17<sup>th</sup> – 18<sup>th</sup> September, 2015  
Vienna, Austria*

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# Determination of Ca, Mg using FAAS



PerkinElmer Analyst 200

Flame: air-acetylene

Wavelength:

- Ca 422.7 nm

- Mg 285.2 nm

Interferences:

- ionization (KCl)

- reduced sensitivity ( $\text{La}_2\text{O}_3$ )

# Sample preparation for Ca, Mg analysis



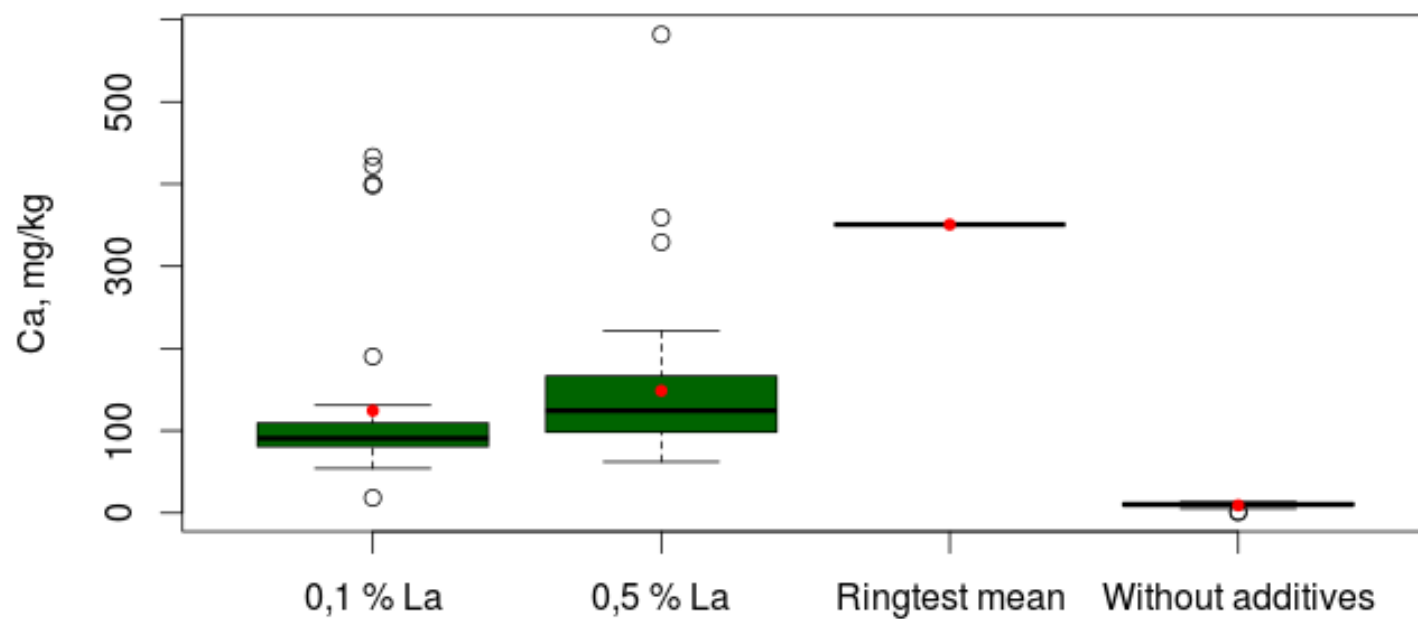
Aqua Regia digestion with  
Behr SMA-ARM workstation

sample weight: ~ 300 mg

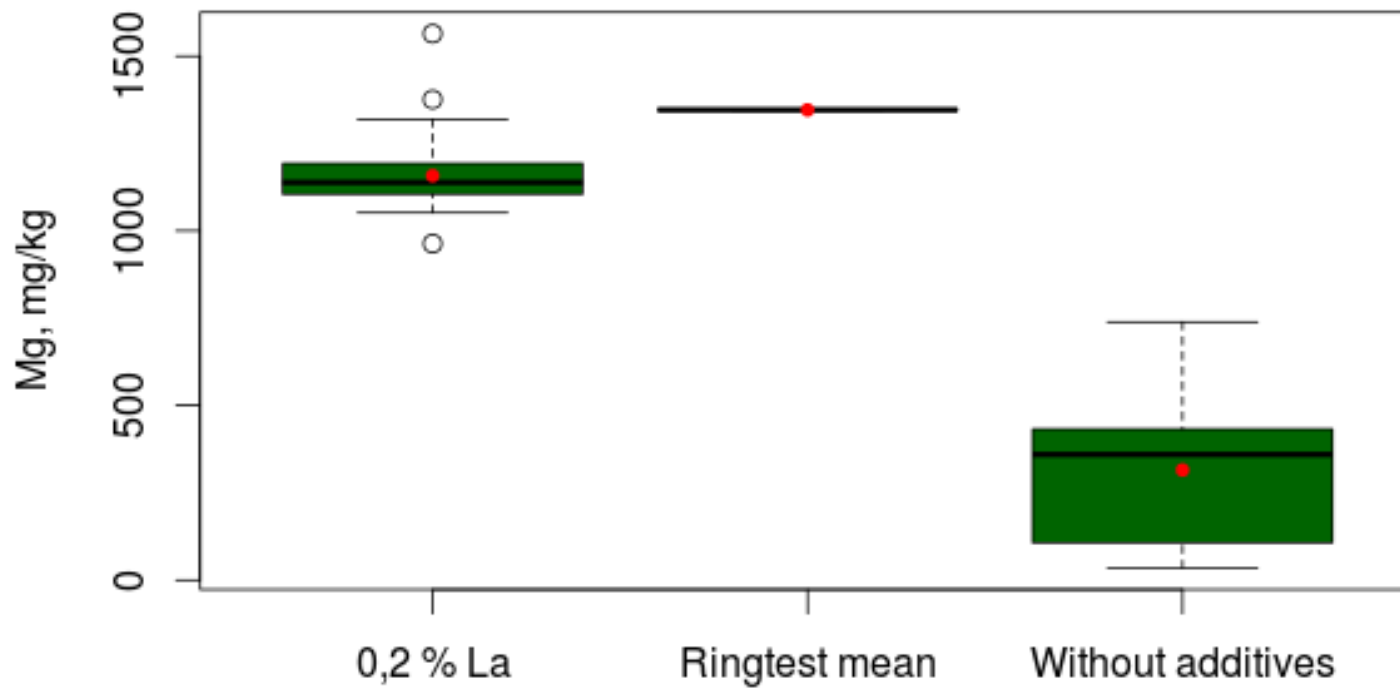
temperature: 145 °C

time: 2 hours

## Ca measurements of the mineral reference soil sample



## Mg measurements of the mineral reference soil sample



# Determination of C, S using element analyzer

ELTRA CS-530

Calibration:

Eltra CRM

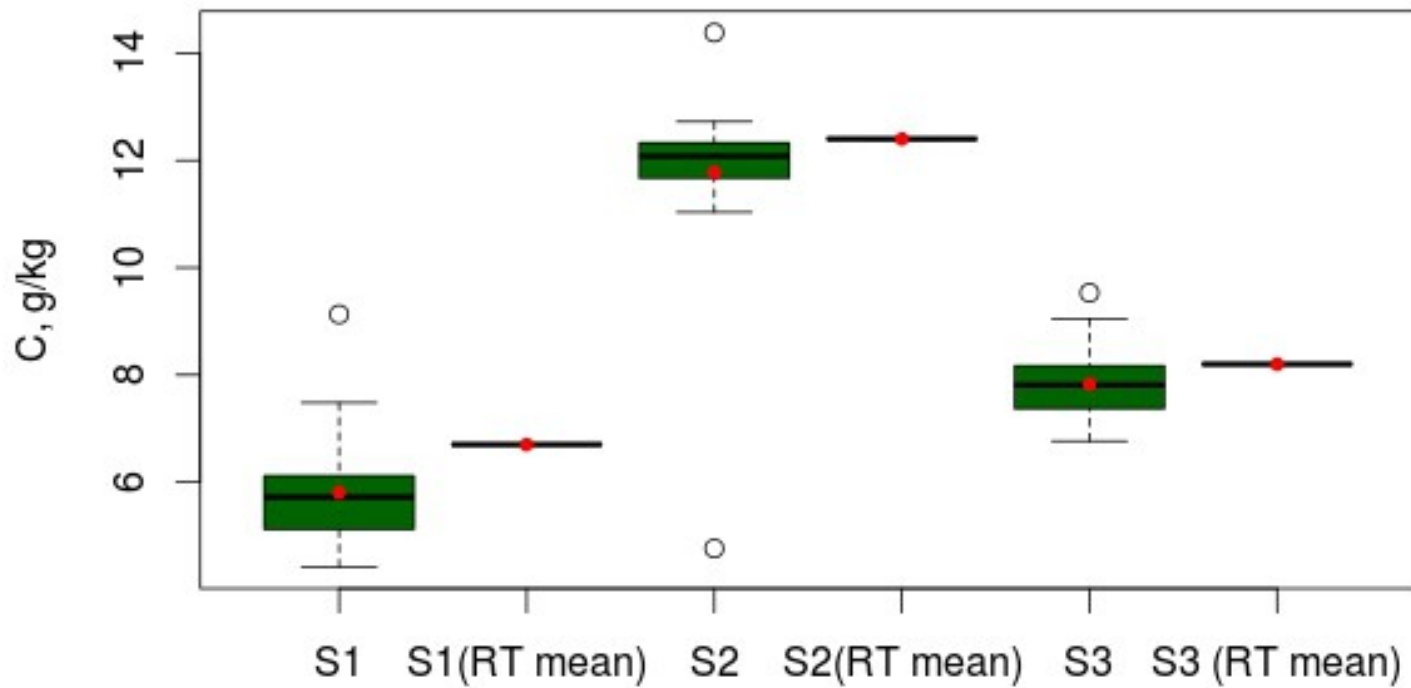
$4.25 \pm 0.04$  % S

$50.9 \pm 0.4$  % C

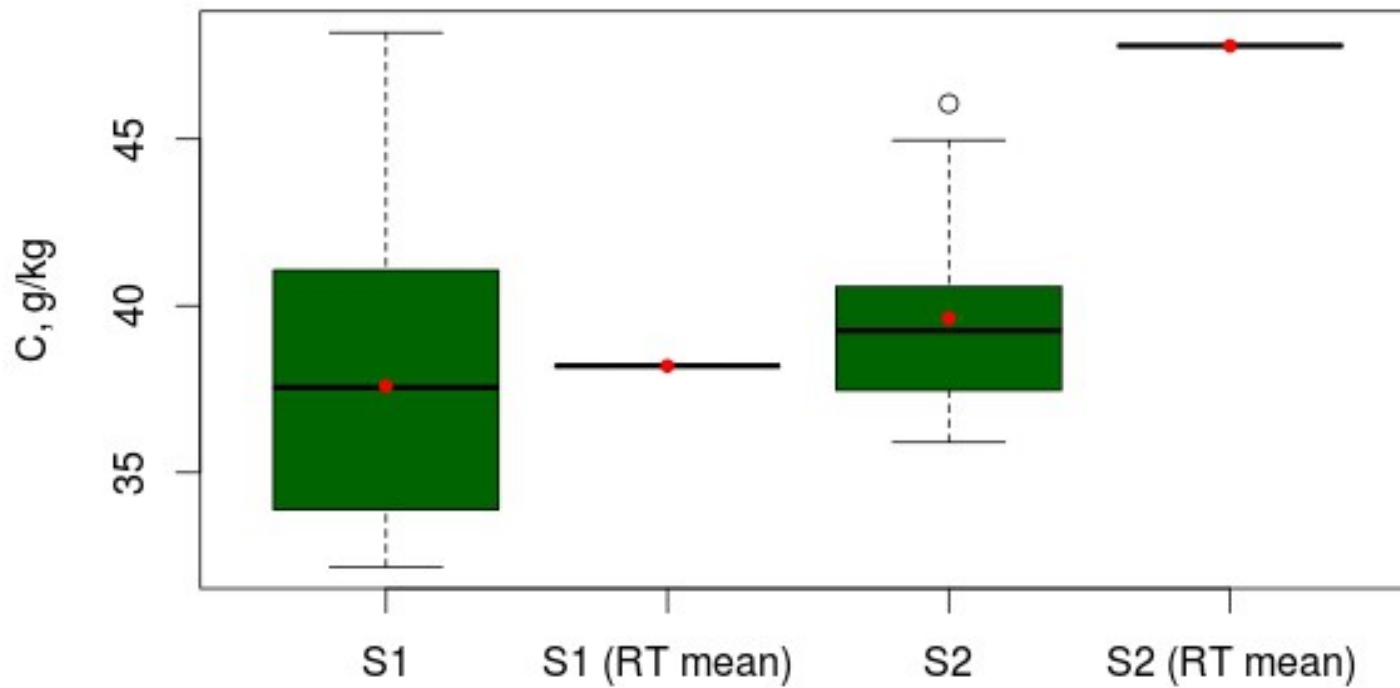
Sample weight: 200-300 mg



## Total C measurements of the mineral reference soil samples

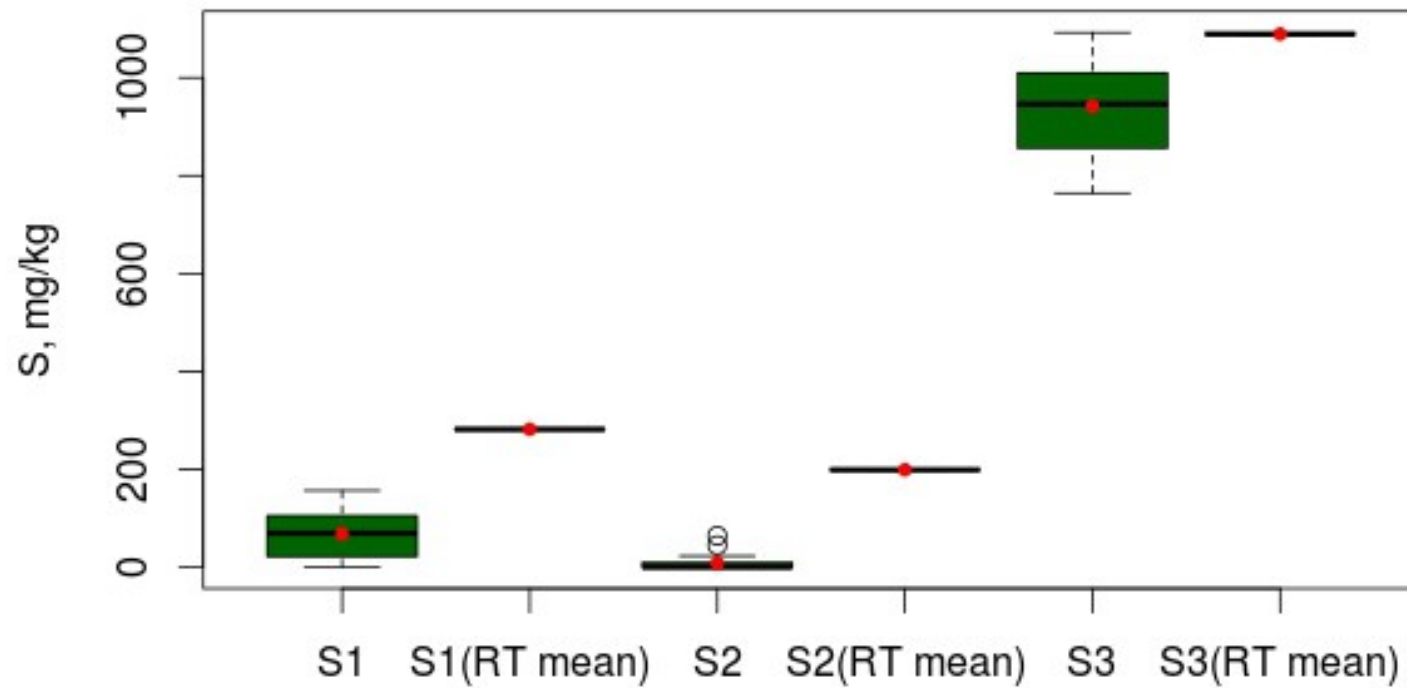


## Total C measurements of the mineral reference soil samples





## Total S measurements of the reference soil samples



# Suggested instruments

- Perkin Elmer AAS  
PinAAcle 900 series
- ICP-OES



- EuroVector  
CHNS-O Elemental  
Analyser. EA3000 Series



Thank you for attention!

