



# MONITORING SOIL PROCESSES AFTER BIOCHAR AND COMPOST AMENDMENT OF TECHNOSOL.

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## THE PROBLEM

City parks and gardens are often established on excavated materials, containing rubble and garbage. In order to support plants, the porosity and the nutrient contents of these materials need to be improved. This can be achieved by adding compost or biochar, two amendments made out of organic wastes, which are produced in large quantities in cities.

**Objective:** To monitor the effect of biochar and compost amendments on soil processes in a Technosol.

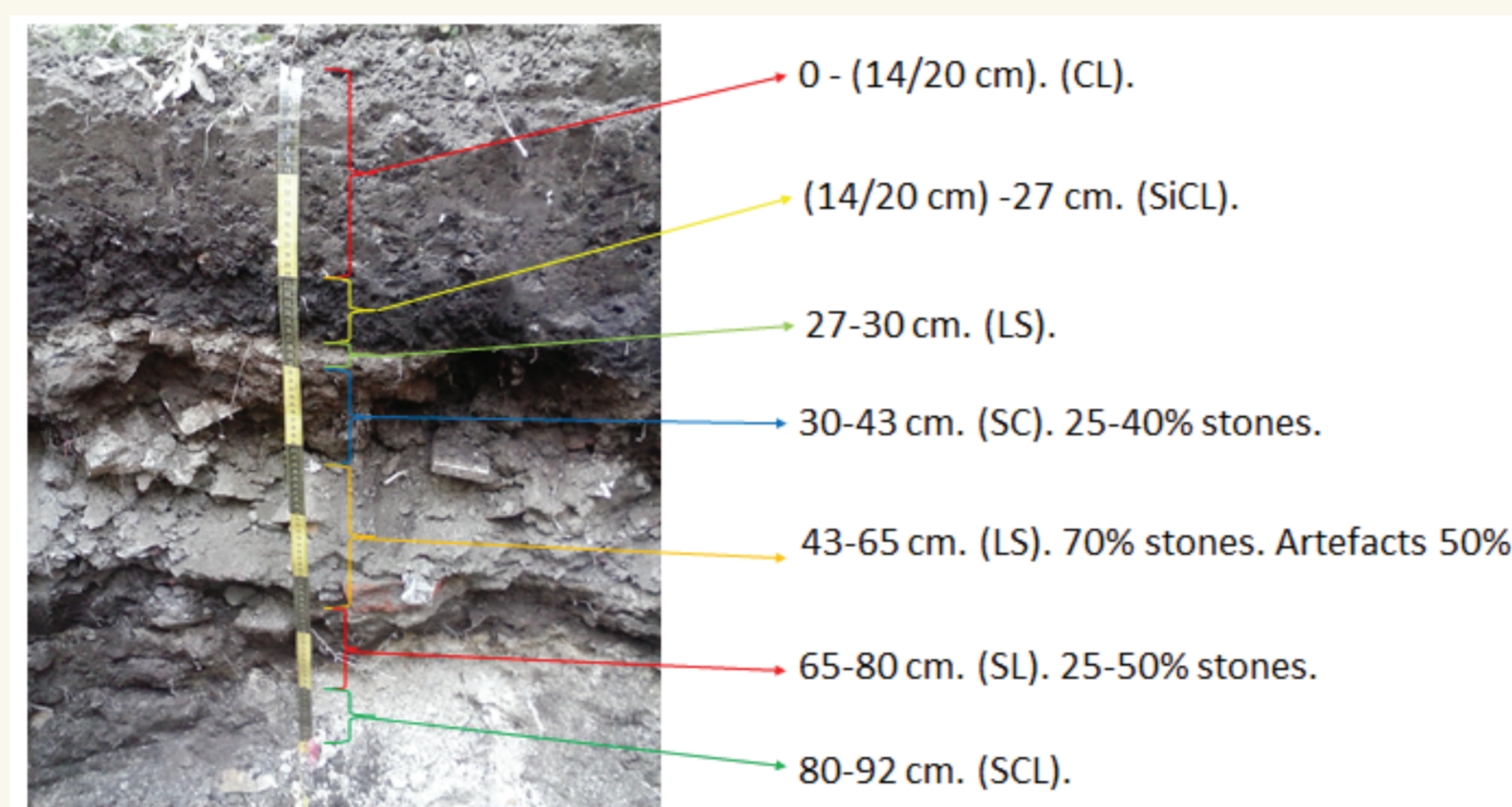
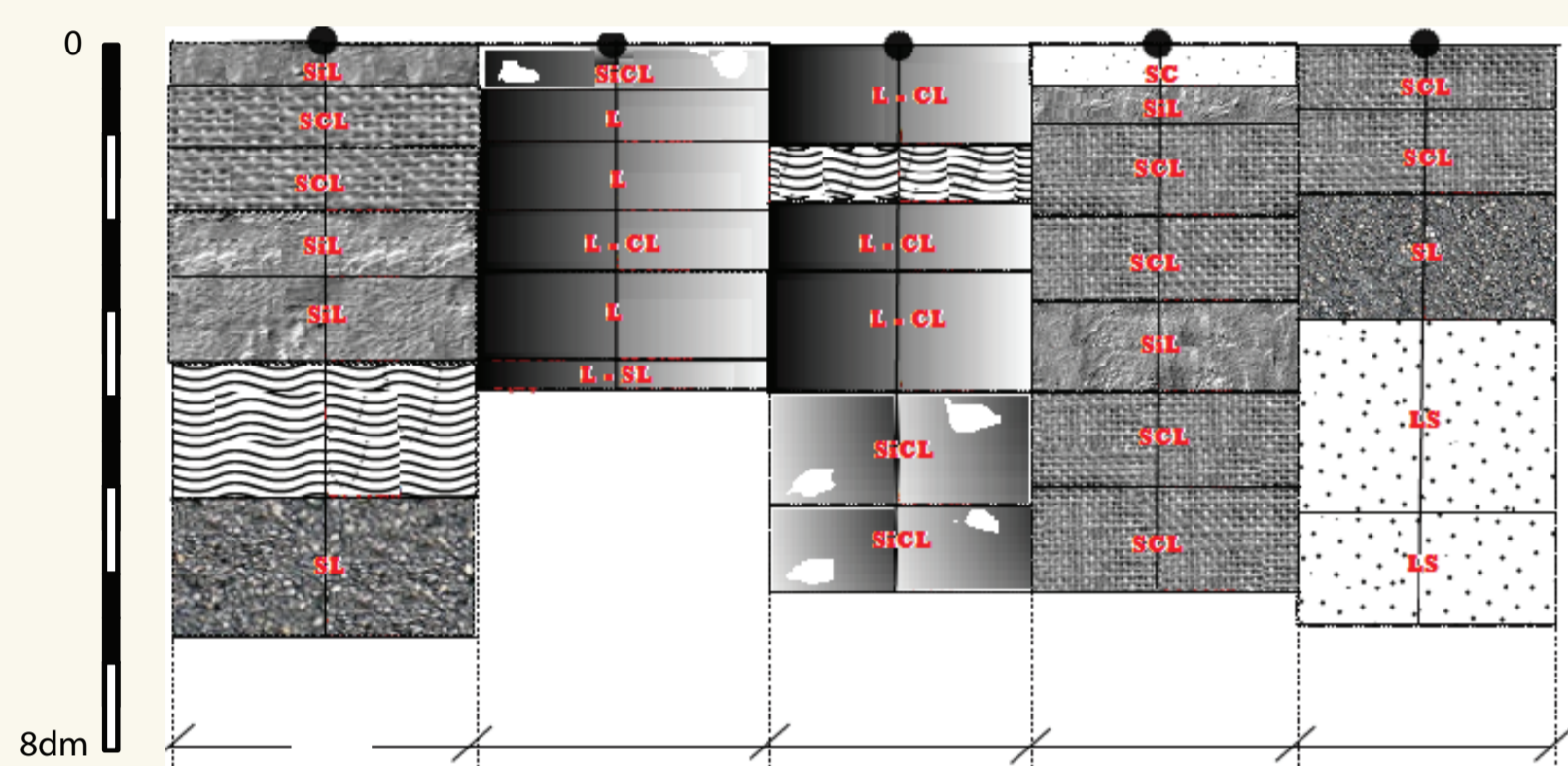
## MATERIALS AND METHODS:

### 1) Site description:

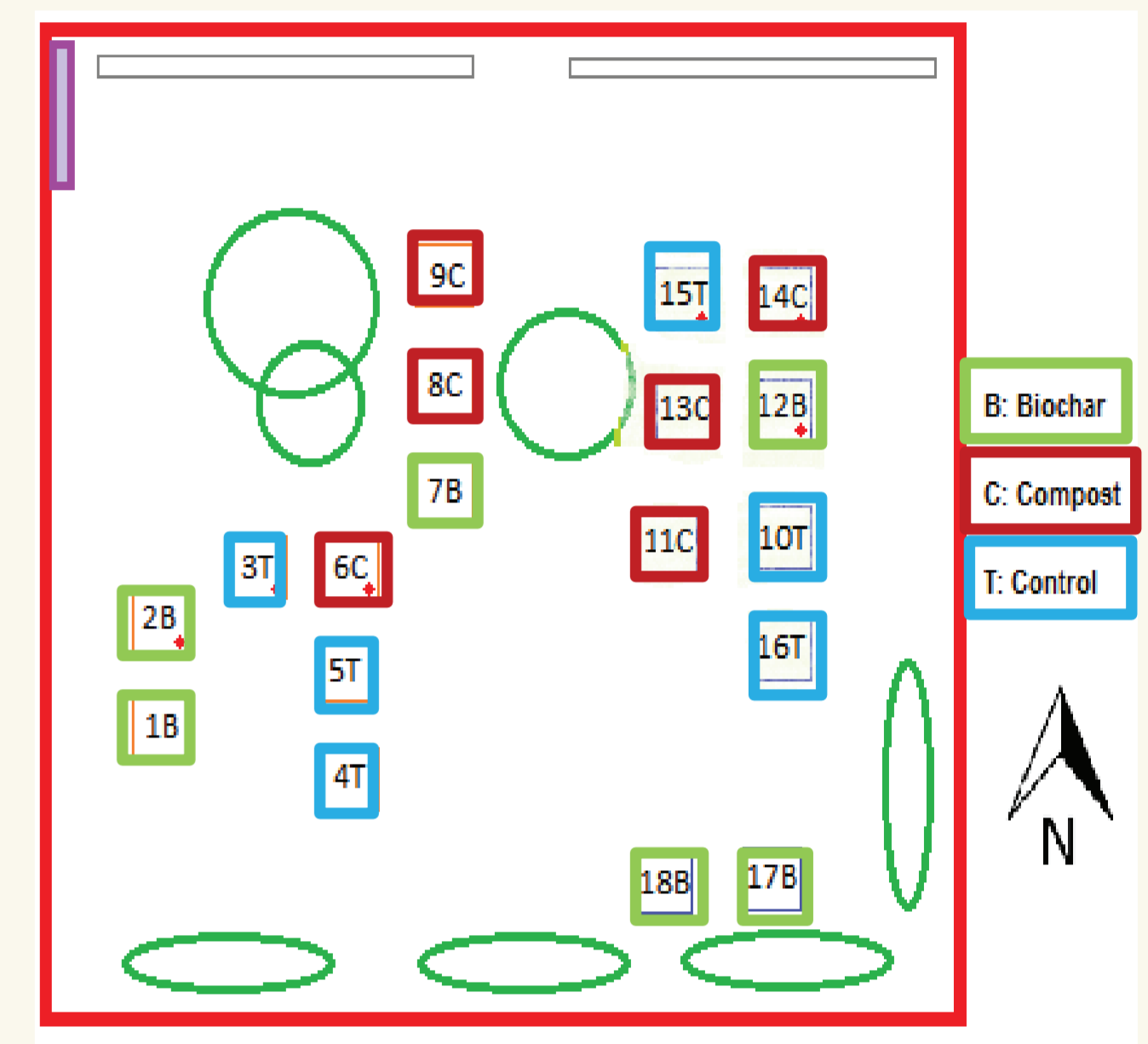
### B) Profile description

### 2) Experimental design

#### A) Soil surveying by augering:



Plots of 1m<sup>2</sup> with 3 treatments: Biochar, compost and control, in 6-fold replication. Dose: 4 kg/m<sup>2</sup> mixed in 10 cm depth. In each plot we planted 4 plants of *Chenopodium ambrosoides*, *Rosmarinus officinalis* and *Lavandula angustifolia*.



### 3) Monitoring of:



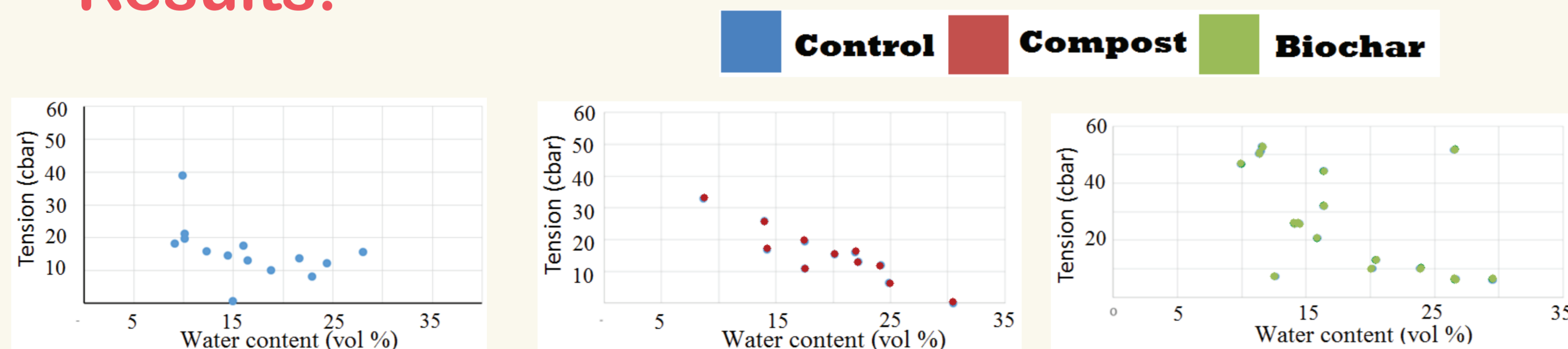
Water tension: Tensiometers and gypsum blocks. [mbar]

Water content (Time domain refractometry). [vol %]

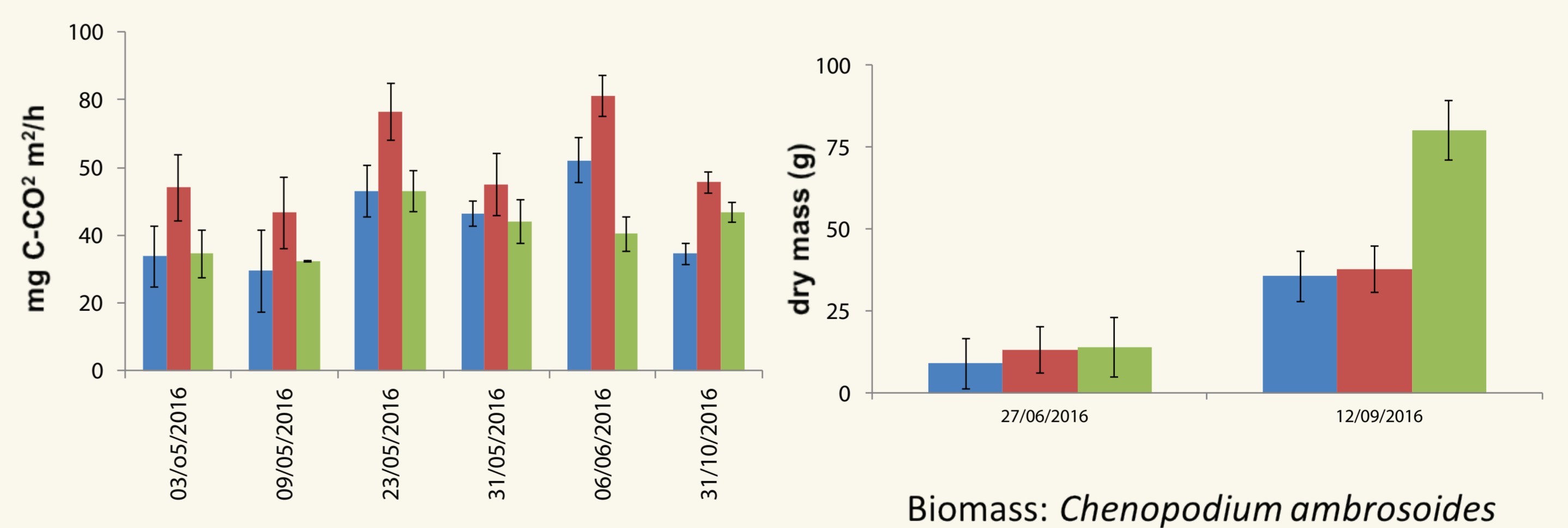
Closed chambers and IR spectrometry

### Water retention curve

## Results:

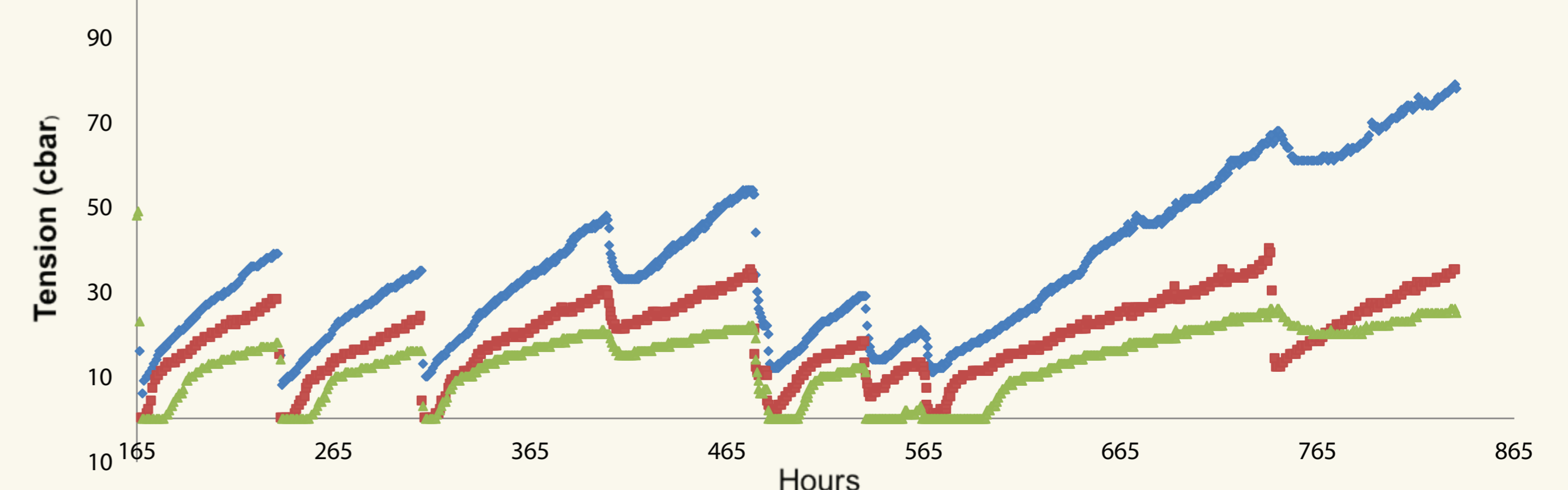


Water retention curves



CO<sub>2</sub> emissions

Biomass: *Chenopodium ambrosoides*



Water tension (gypsum blocks)

## Conclusions:

- a) Both amendments enhanced the water retention capacity and lowered the water tension.
- b) Compost amendments increased the CO<sub>2</sub> emissions.
- c) Largest biomass production was observed in the biochar amendment.