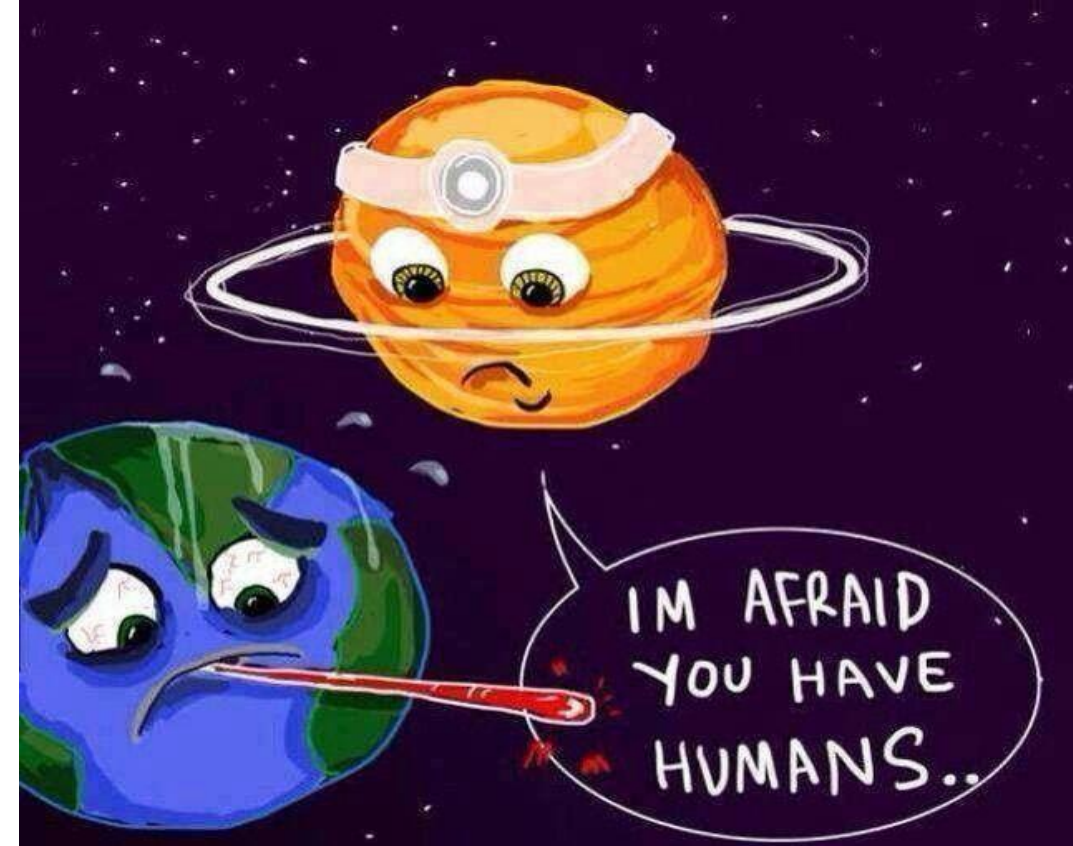


Influence of air temperature and precipitation on the amount of decomposed organic matter and released carbon dioxide

Lidija Tivanovac and Marina Balažinec

Primary school I. Kukuljevića, Belišće and 3rd primary school Varaždin

Reasons for our research:



How can soil research help us?

- 2700 Gt of carbon dioxide stored in the ground
- the decomposition of organic matter takes place with the help of organisms in the soil, releasing carbon dioxide and minerals



Questions and hypotheses

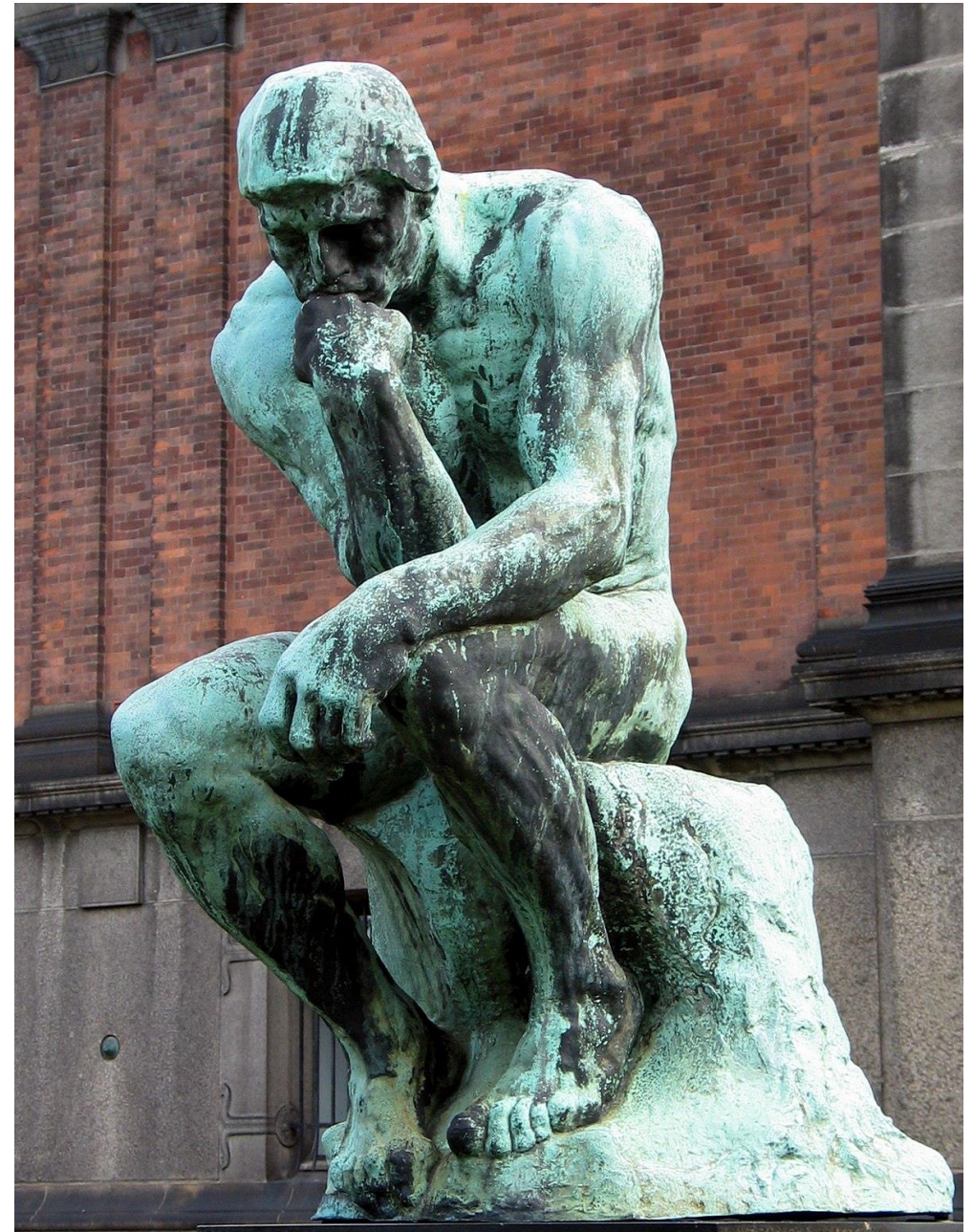
QUESTIONS:

how precipitation and temperature affect the amount of carbon dioxide released, ie the amount of decomposed matter

HYPOTHESES:

as the air temperature rises, the amount of decomposed substance increases, ie more carbon dioxide is released into the atmosphere

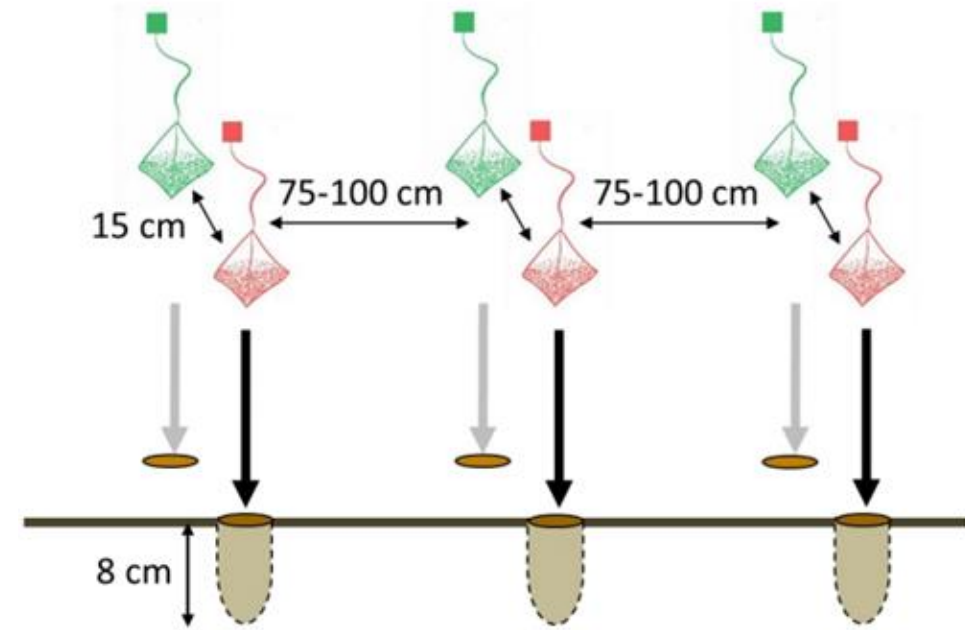
higher rainfall has a positive effect on the decomposition of organic matter



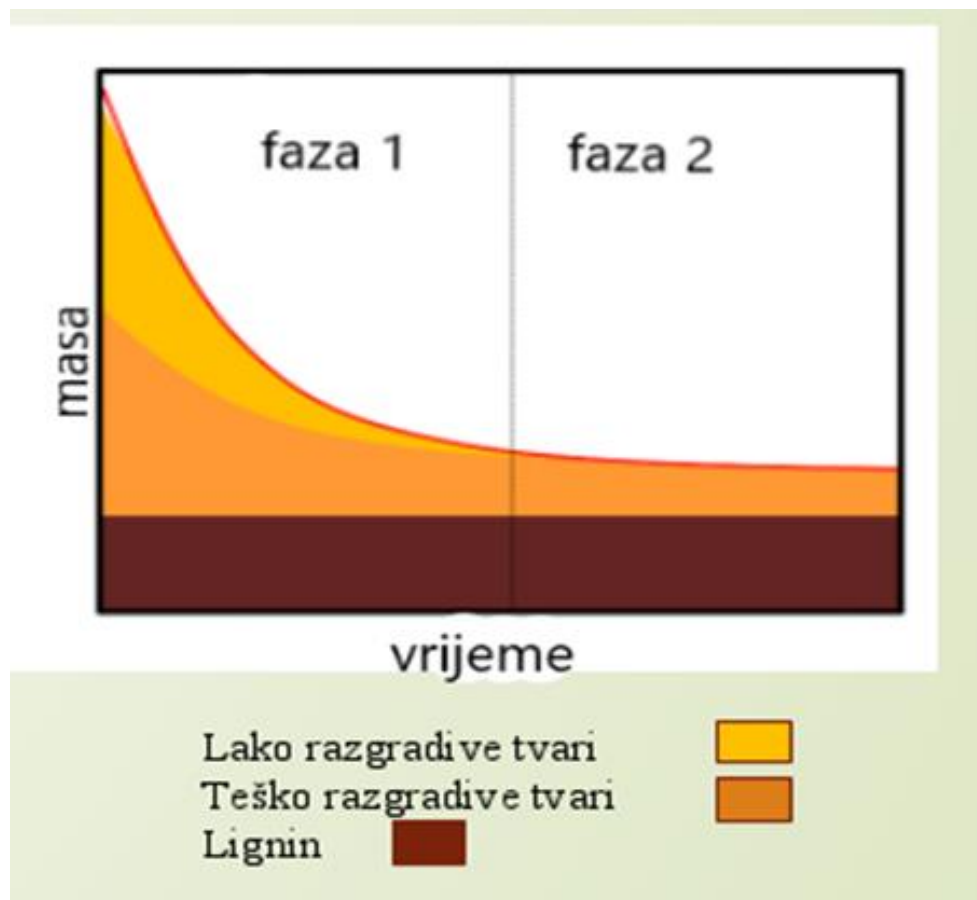
- We looked for answers in Varaždin and Belišće! Collaboration and research work!
- independent variables: rainfall and air temperature
- dependent variables: the amount of carbon dioxide released and the rate of decomposition of the substance
- constant conditions: loamy sand, granular structures covered with grass and deciduous linden trees and temperate continental climate

Research methods

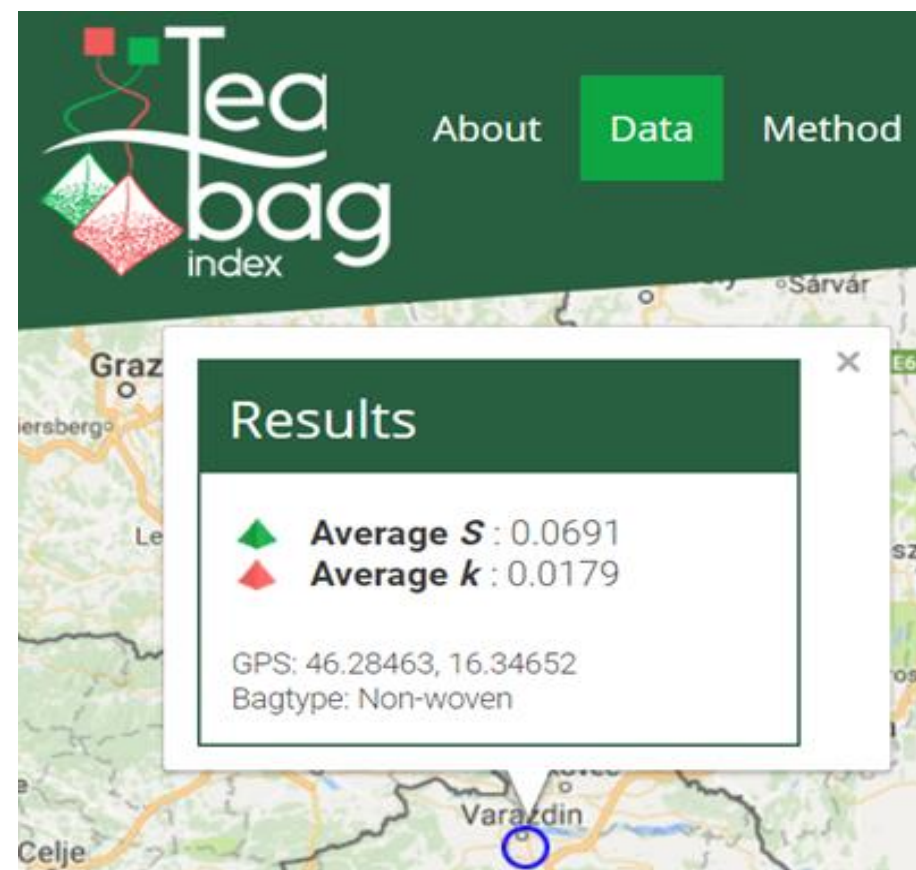
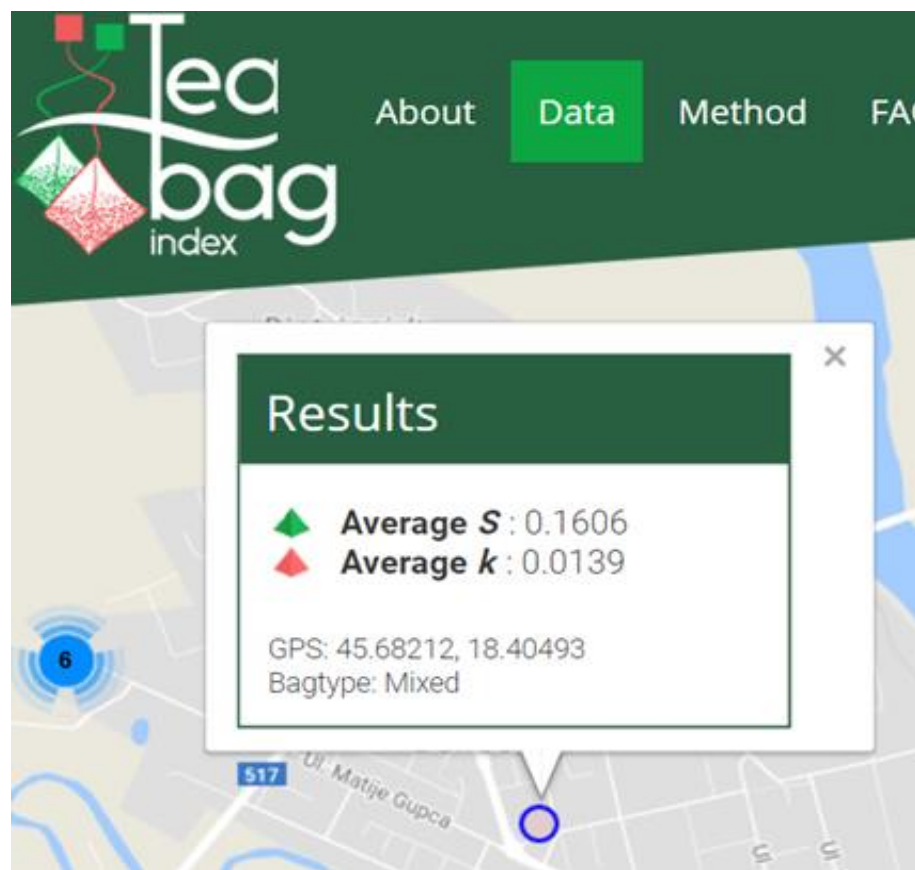
- TBI method (Tea Bag Index)
- green and roibos tea brand Lipton
- after 3 months calculation of stabilization factor (S) and degradation constant (k)



- The survey lasted 3 months: from June 5 to September 1

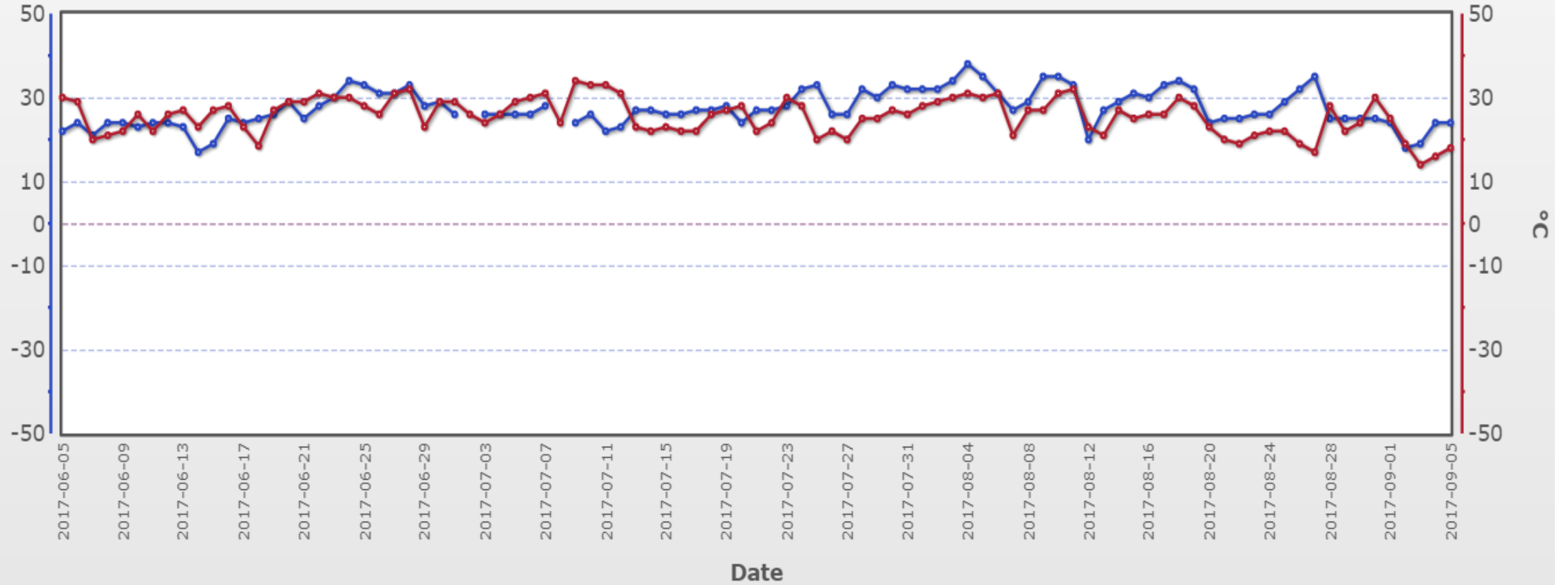


Data display and analysis:



The values of the constants k and S for the elementary schools I. Kukuljević and III Varaždin Primary School

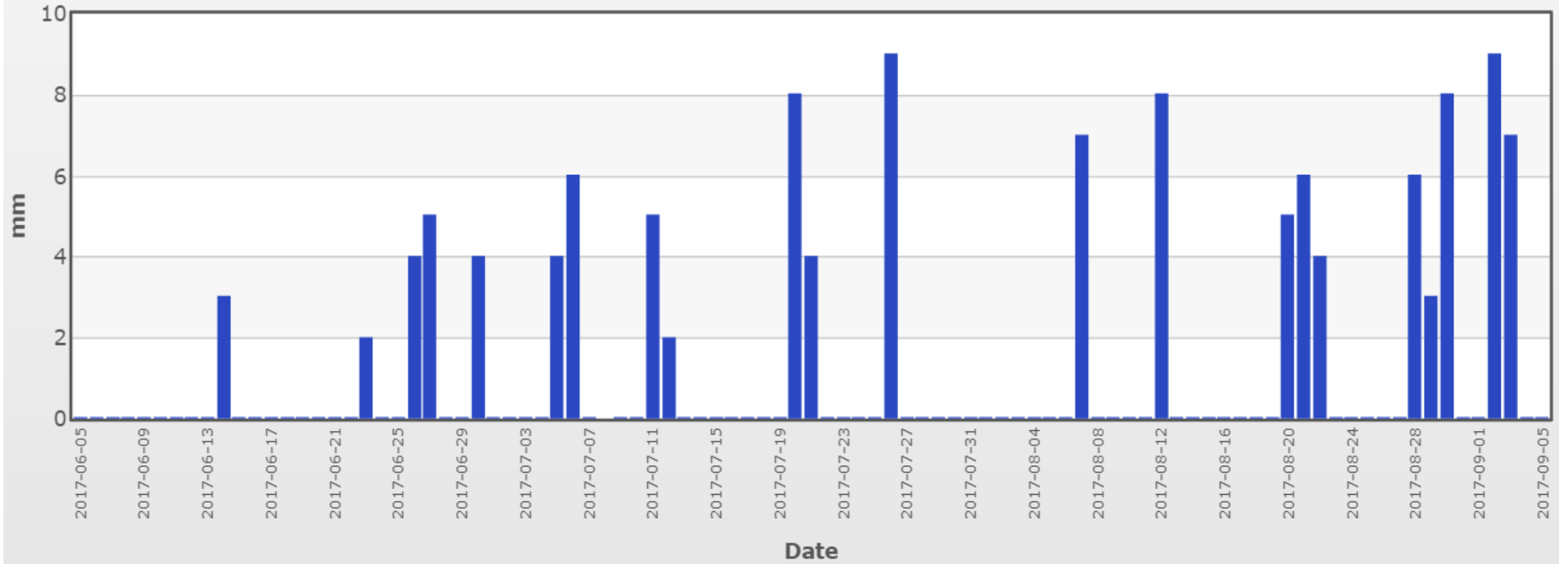
Solar Noon Temperature Dailies, Solar Noon Temperature Dailies, versus Time



III. osnovna skola Varazdin(skola):Air Temperature Dailies:Solar Noon Temperature Dailies
OS Ivana Kukuljevica(dvori?te:ATM-01):Air Temperature Dailies:Solar Noon Temperature Dailies

III. osnovna skola Varazdin (skola) Precipitation Time Series Plot

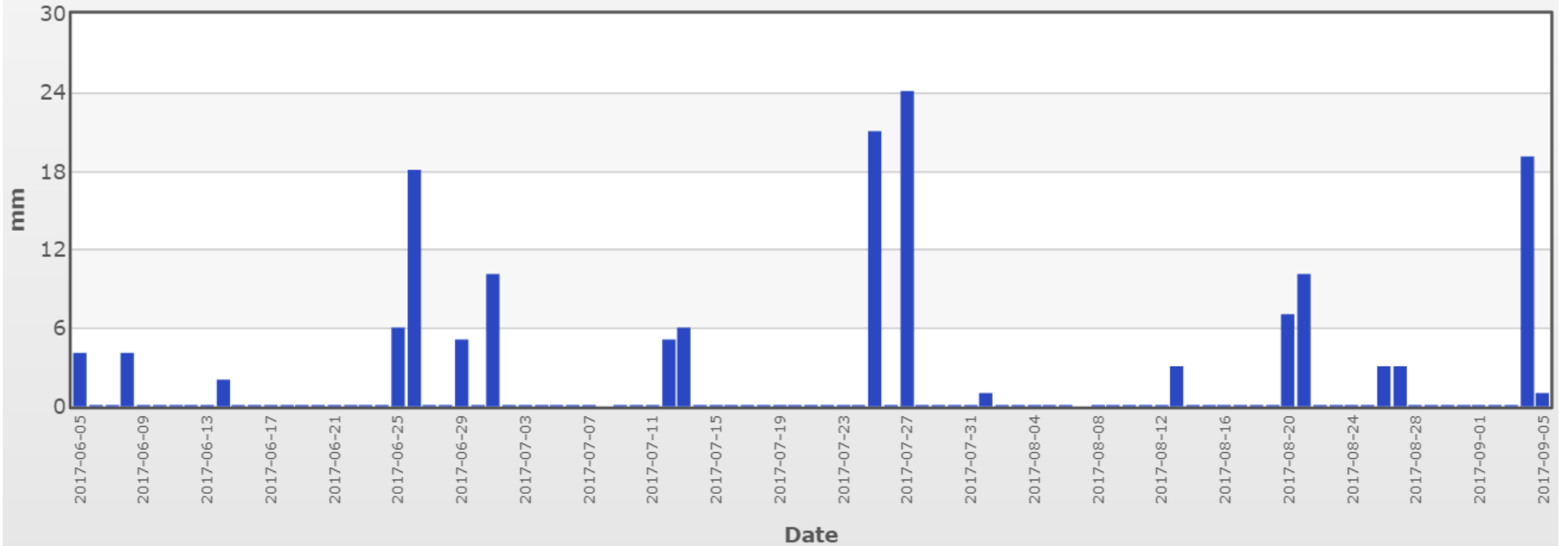
Rain Depth, versus Time



III. osnovna skola Varazdin(skola):Precipitation:Rain Depth



Rain Depth, versus Time



OS Ivana Kukuljevica(dvorište:ATM-01):Precipitation:Rain Depth

Conclusion

- at both stations the decomposition of organic matter proceeded at the same rate
- at the Varaždin station, more organic matter was decomposed and more carbon dioxide was released
- ☐ The decomposition of organic matter is positively affected by higher air temperature and higher precipitation



- Thank you for attention!