



Ben-Gurion University of the Negev  
The Zuckerman Institute for Water Research (ZIWR)

15<sup>th</sup> Specialized Conference on  
Small Water & Wastewater Systems

7<sup>th</sup> Specialized Conference on  
Resources Oriented Sanitation

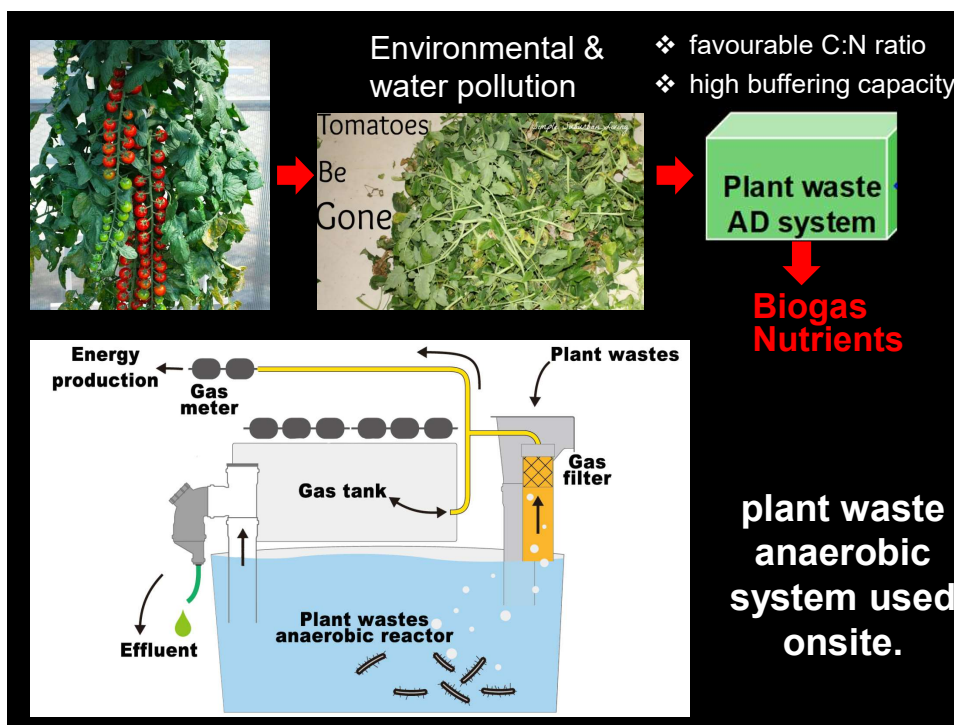


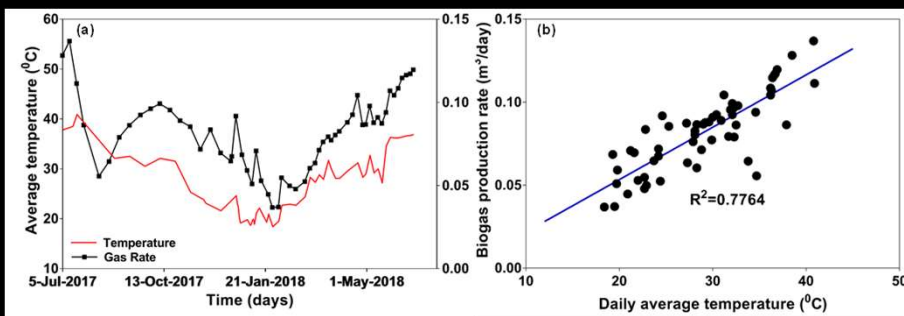
IWA  
the international  
water association

## Onsite anaerobic digestion of agro-waste

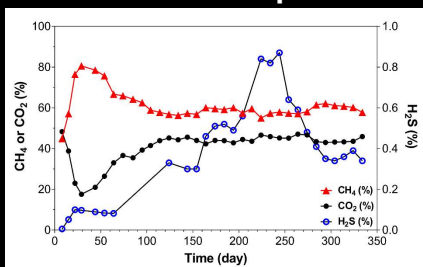
Ze Zhu  
Adviser: Amit Gross

16.10.2018



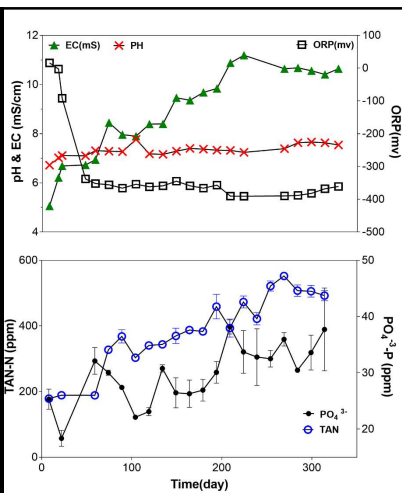


**Biogas production rate and temperature in the tomato plant waste anaerobic system.**

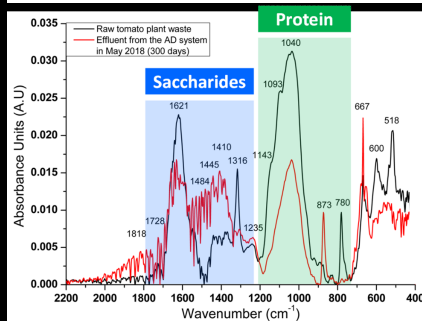
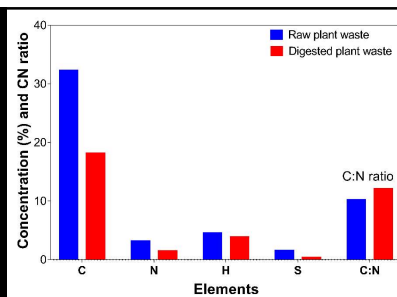


**Biogas compositions over time**

- Biogas production rate 0.12 m<sup>3</sup>/d
- 61.7 % CH<sub>4</sub> and 38.1 % CO<sub>2</sub>
- effect of temperature over the year on gas yield was significant (p<0.05).



**Operation performance of continuous experiments:**  
 (a) pH, EC and ORP;  
 (b) TAN-N and PO<sub>4</sub>-P in effluent.



**Elemental analysis and FTIR spectra for raw and anaerobic digested plant waste**

## Conclusions

- Small-scale anaerobic agro-waste system was successfully operated for **over 1 year**
- 54.1 kg dried waste (~**530 kg wet waste**) was introduced, of which 48.5 kg were digested and recovered mainly as **biogas**
- Producing a significant amount of energy-usable biogas, thus **reducing the waste load by 90%**

Welcome to my poster **#18** and give comments

**Thank you for your attention!**