



University of Agricultural Sciences and
Veterinary Medicine of Cluj-Napoca
Since 1869

SoilMan

Ecosystem services of soil biota in agriculture



SOILMAN MEETING

Uppsala, 17-20 September 2018

M. Sandor, D. Dascalu , B. Onica



THÜNEN



GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN



CSIC
Spanish Council of Research



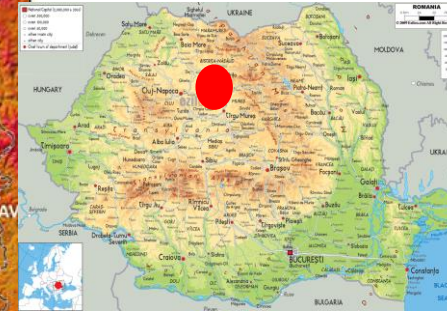
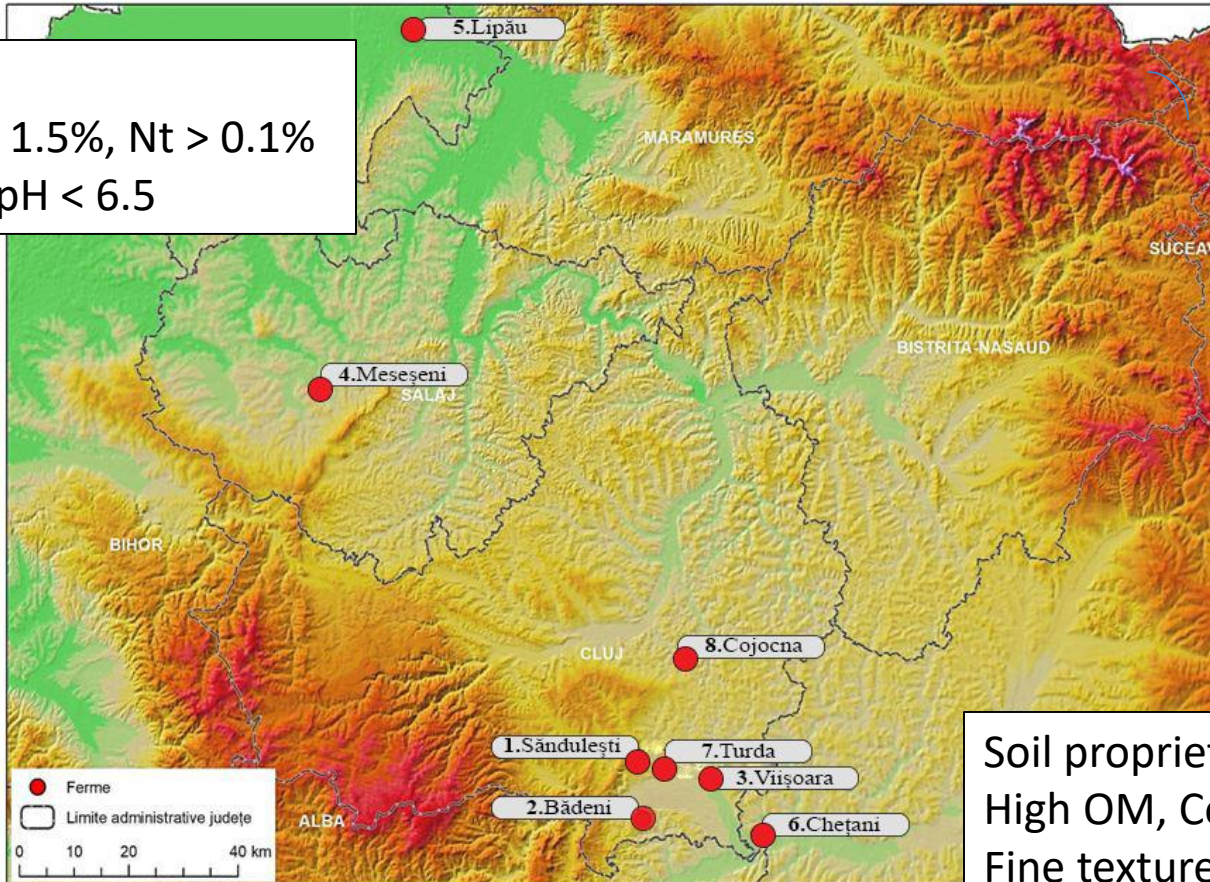
UNIVERSITÉ DE
RENNES 1



FARM NETWORK IN ROMANIA

- Located in N-W part of Romania
- Climate is continental: rainfall around 700 mm/year, temperature 9°C
- For the farm network we chose 9 farms where 15 fields was selected for sampling: **8 fields CT**, **7 fields MT**
- **CT**: Ploughing, use of harrow disc or cultivator to homogenized the soil, sowing
- **MT**: No-ploughing, chisel plow or cultivators were used to mix the soil at the surface

Soil properties:
 Low OM, Corg < 1.5%, Nt > 0.1%
 Coarse texture, pH < 6.5



Soil properties:
 High OM, Corg > 2.5%, Nt > 0.2%
 Fine texture, pH > 7

Replicate	Tillage	
	CT	MT
Rep 1	maize, plowing, disc, mineral fertilizers, herbicide, plant protection	soybean, OM in soil, cultivator, MF, H, PP
Rep 2	maize, plowing, disc, mineral fertilizers, herbicide, plant protection	?, cultivator, MF, H, PP
Rep 3	maize, plowing, disc, mineral fertilizers, herbicide, plant protection	sugar beet, OM in soil, cultivator, MF, H, PP
Rep 4	wheat, plowing, disc, mineral fertilizers, herbicide, plant protection	
Rep 5	?, plowing, disc, mineral fertilizers, herbicide, plant protection	?, cisel plow, cultivator, MF, H, PP
Rep 6	maize, plowing, disc, mineral fertilizers, herbicide, plant protection	sugar beet, OM in soil, cultivator, MF+OF, lucerne integrated
Rep 7	soybean, plowing, disc, mineral fertilizers, herbicide, plant protection	soybean, cisel plow, OM in soil, MF, H, PP
Rep 8	maize, plowing, disc, mineral fertilizers, herbicide, plant protection	maize, cultivator, OM in soil, MF, H, PP

- Sampling campaign

Start: beginning of April

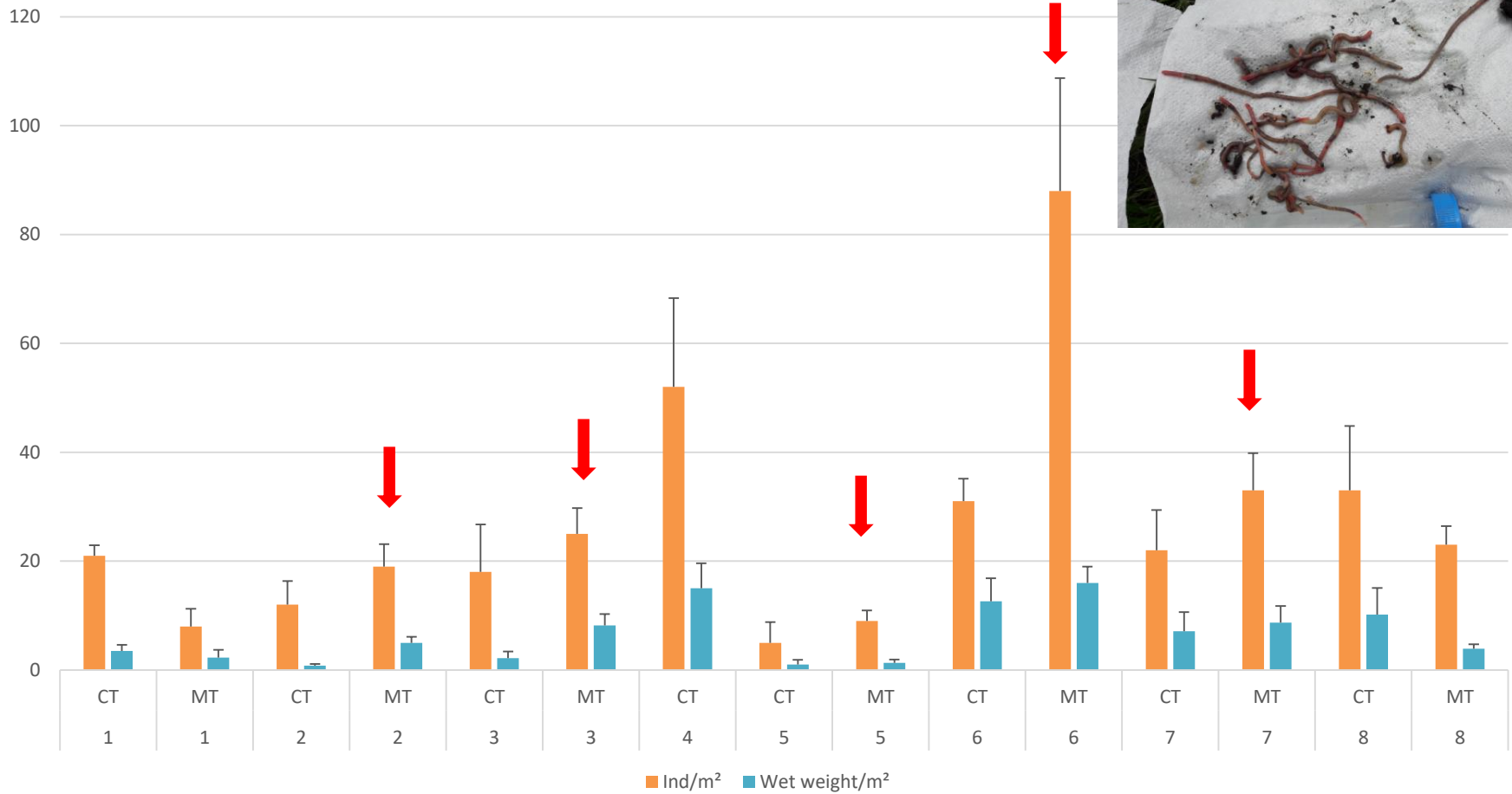


End: end of May



Good conditions for sampling soil organism without dry period or high temperature

Earthworms density and biomass in FN



LTO sampling

- 20 – 23 of May for all groups
- Only 5 earthworms collected/other groups?
 - high temperature, dry conditions at the surface, selected sampling points (at the edge of the field)
- We repeated earthworms sampling in LTO fields after harvest and in better conditions
- CT 18 ind/mp; MT 22 ind/mp (*A. caliginosa*, *Octolasion cyneum*, *Allolobophora chlorotica*)

Acknowledgements

The SoilMan project (grant number 01LC1620) was funded through the 2015-2016 BiodivERsA COFUND call for research proposals with the following funders:



European Commission



Bundesministerium
für Bildung
und Forschung



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD



Eesti Teadusagentuur
Estonian Research Council

FORMAS

