

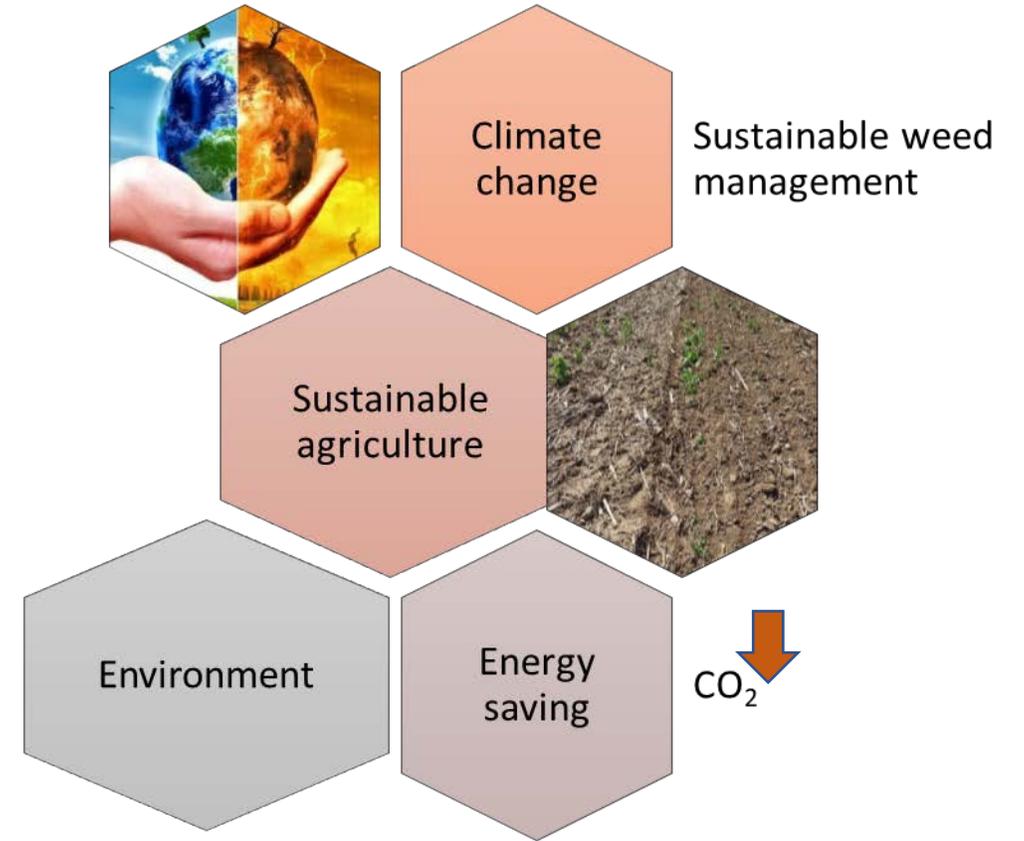
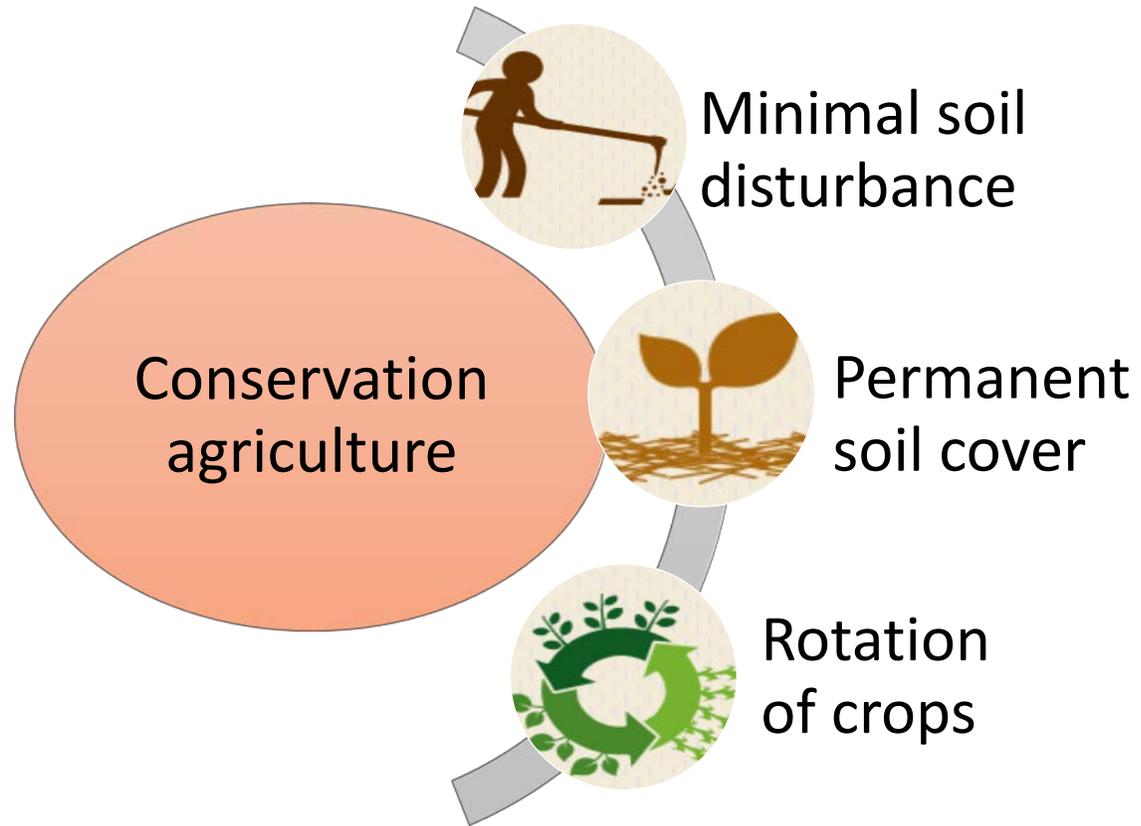


57th Croatian and 17th International Symposium on Agriculture

Influence of conservation tillage on weed occurrence in maize under climate change conditions

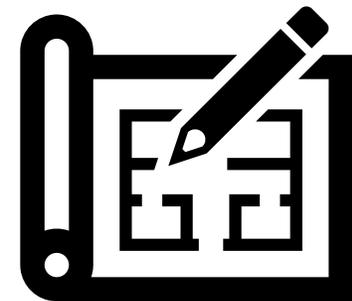
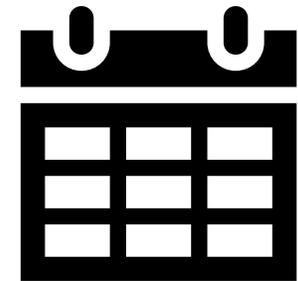
Iva Rojnica, Bojana Brozović, Irena Jug, Boris Đurđević, Vesna Vukadinović, Larisa Bertić, Marija Ravlić, Danijel Jug

Introduction



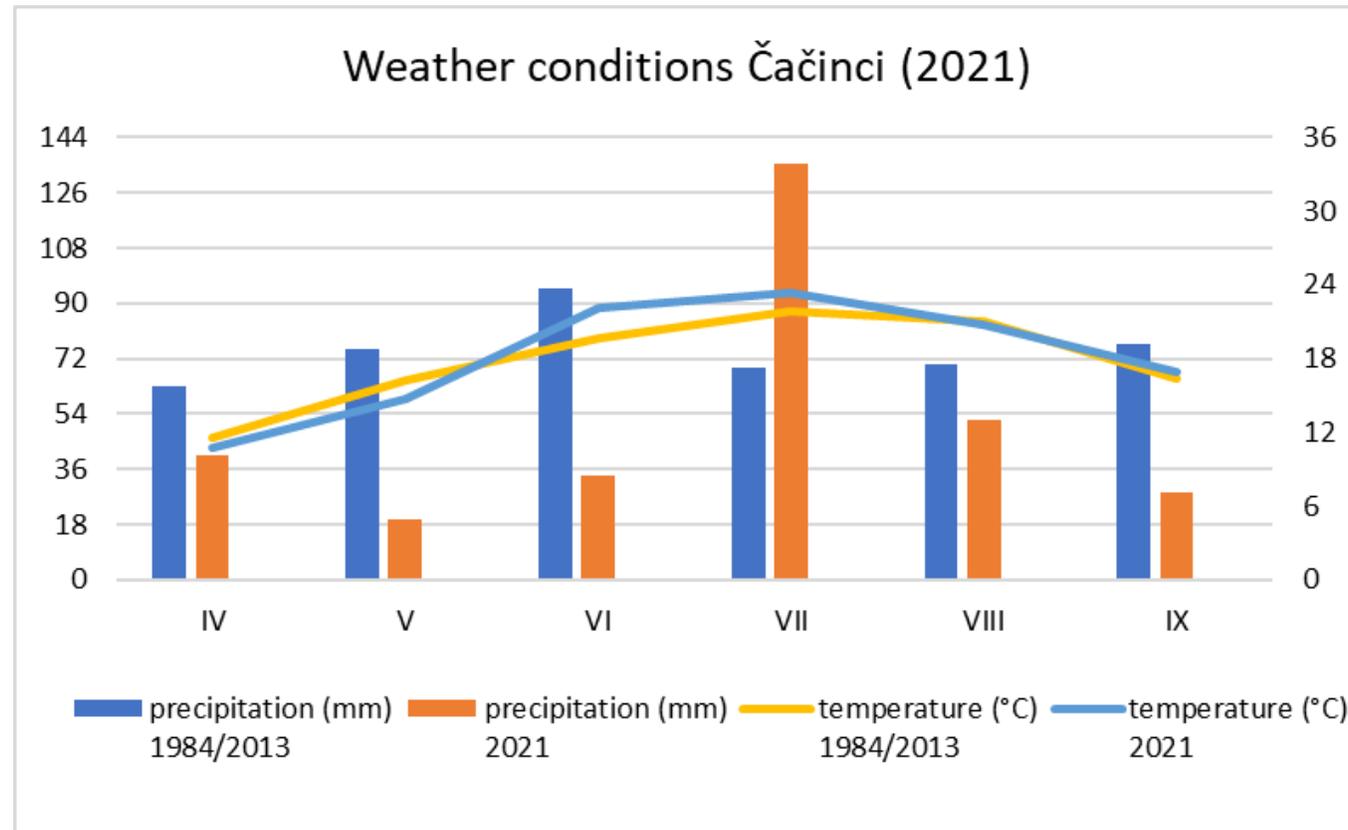
Materials and methods

- Čačinci, 17.86336 E, 45.61316 N, n.v. 111 m
- 2021
- Split plot experimental design in three replicates
- Weed sampling - phenophase V10 and R5



Climatic conditions

2021	IV	V	VI	VII	VIII	IX
Precipitation, mm	40,8	19,83	34,2	135,33	52,23	28,71
Temperature, °C	10,7	14,7	22,1	23,4	20,77	16,9



Treatments

main treatment:

ST tillage - conventional, plowing

CTD tillage - conservation, loosening with a minimum of 30% of crop residues on the surface

CTS tillage - conservation, tillage up to 10 cm with a minimum 50% of crop residues on the surface

sub-treatment:

liming - carbocalc, 10 t ha⁻¹

Materials and methods

weed coverage - visual assessment using a square of 0.25 m² at four randomly selected places on each experimental plot

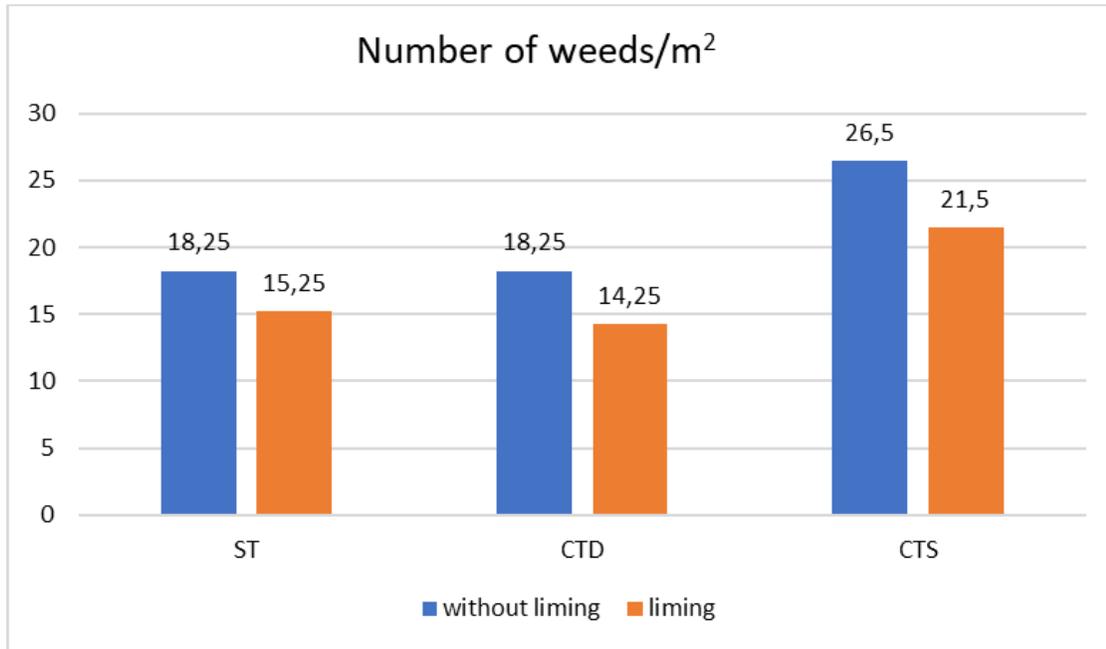
the number and aboveground **biomass of weeds** - counting individual weed species using a square of 0.25 m² in four replicates per experimental plot

weeds from each square - cut at ground level, counted, dried at 65°C and weighed



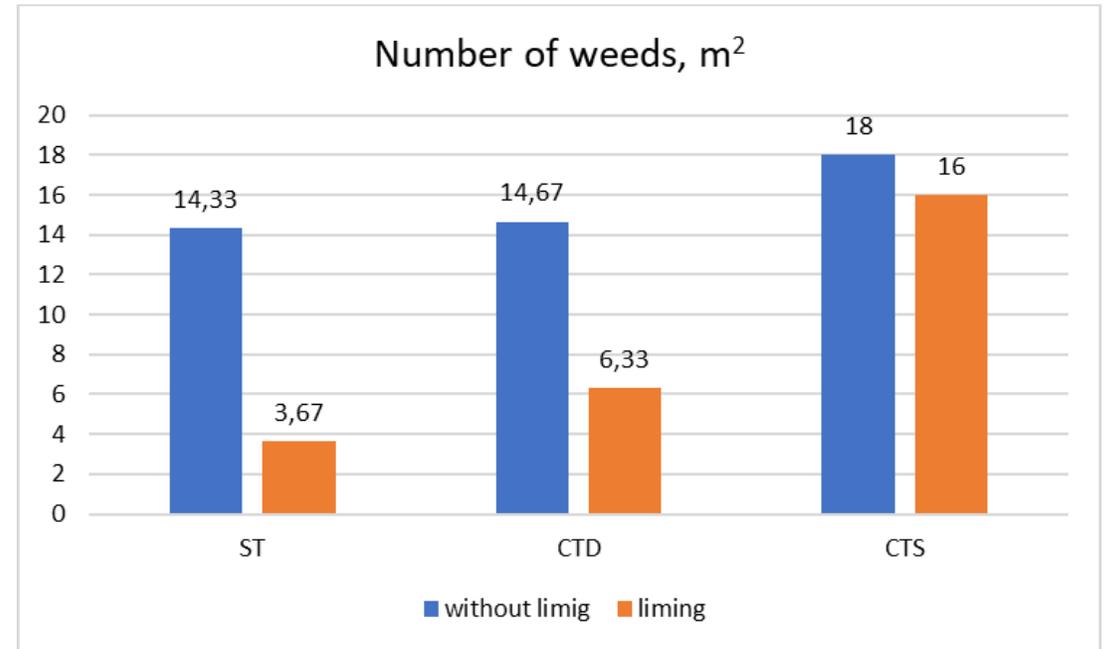
The number of weeds, m²

Phenophase V10



LSD liming =3,550

Phenophase R5



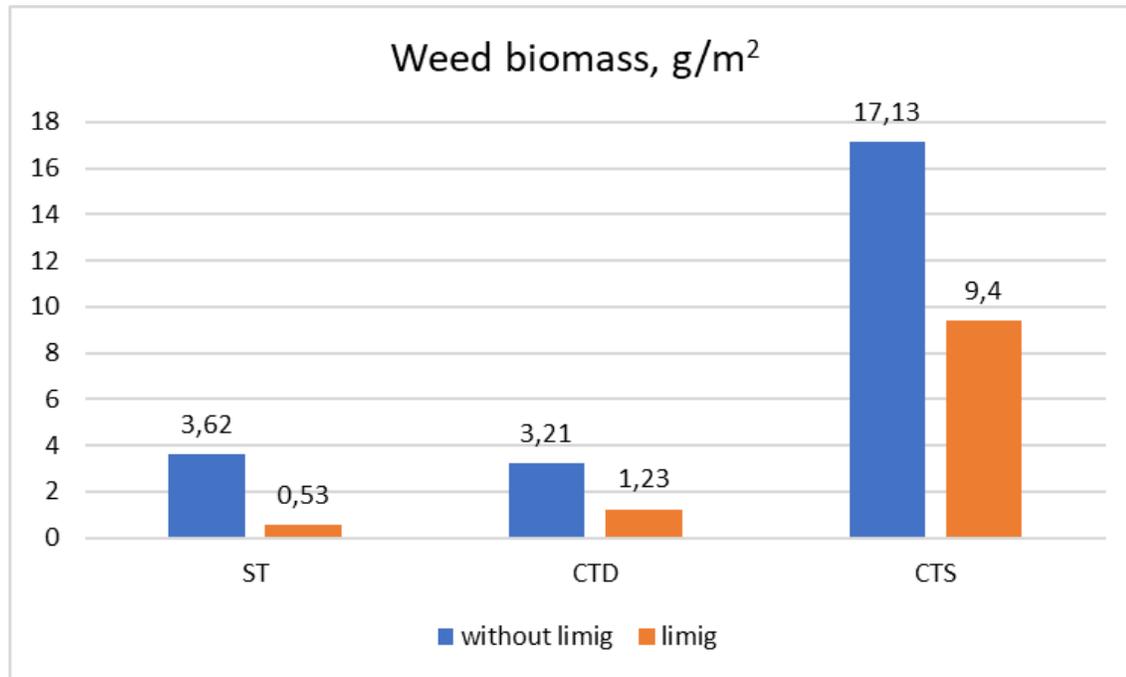
ST TILLAGE - conventional, plowing

CTD TILLAGE - conservation, loosening with a minimum of 30% of crop residues on the surface

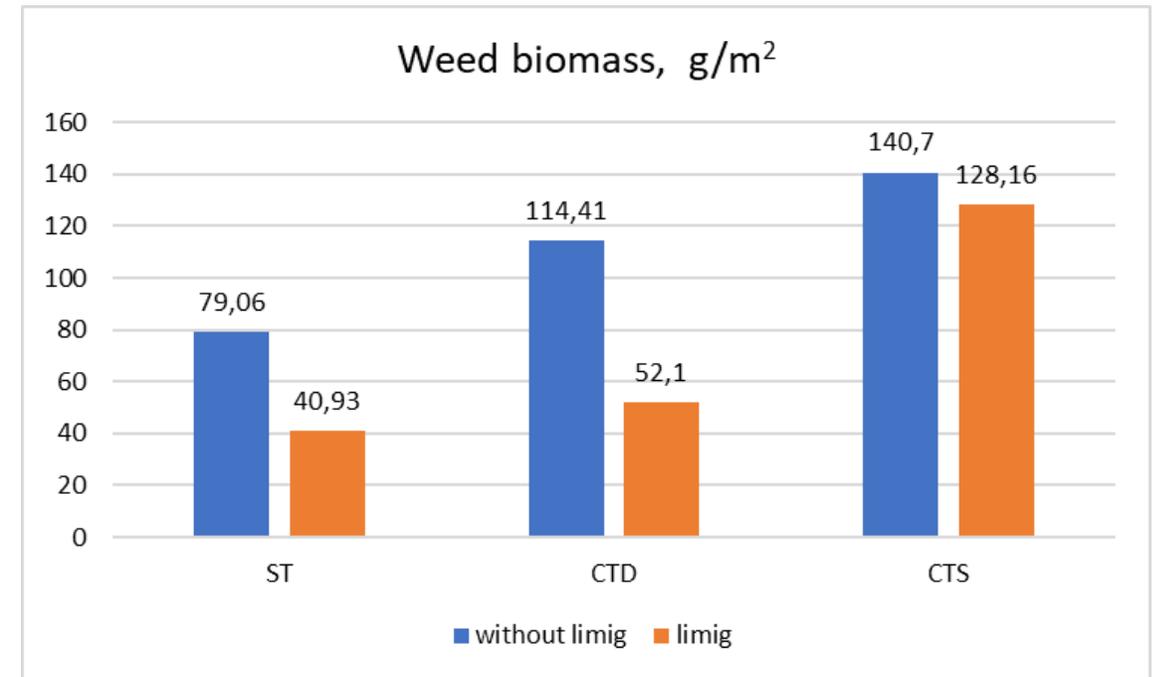
CTS - conservation, tillage up to 10 cm with a minimum 50% of crop residues on the surface

Weed biomass, g/m²

Phenophase V10



Phenophase R5



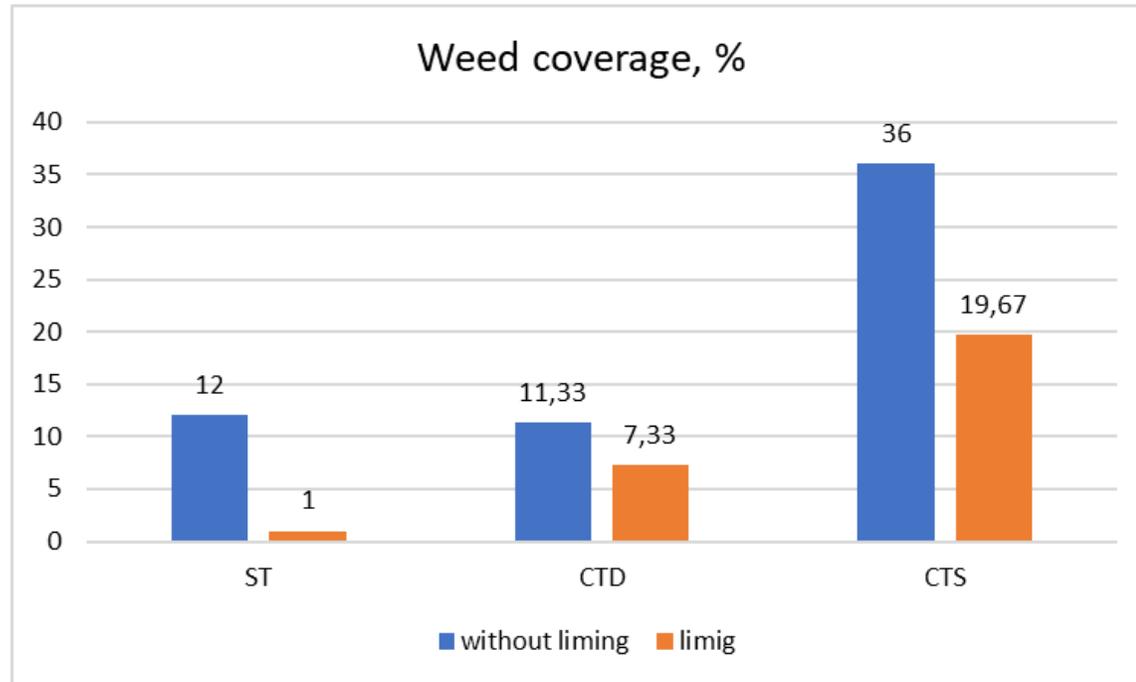
ST TILLAGE - conventional, plowing

CTD TILLAGE - conservation, loosening with a minimum of 30% of crop residues on the surface

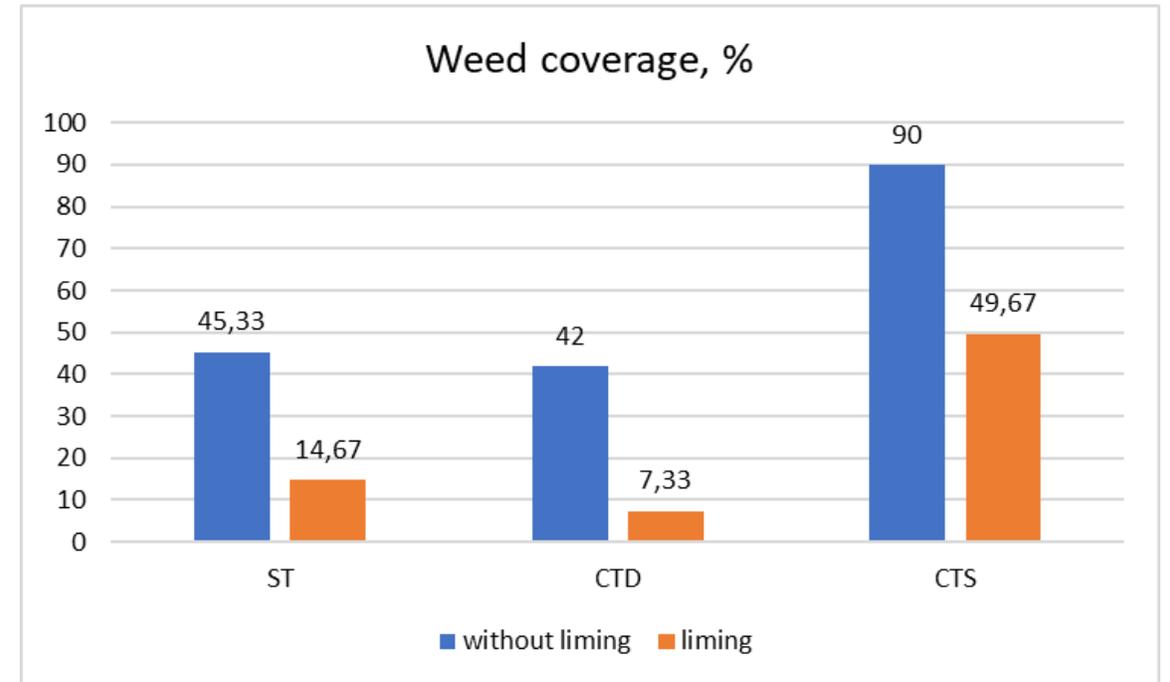
CTS - conservation, tillage up to 10 cm with a minimum 50% of crop residues on the surface

Weed coverage, %

Phenophase V10



Phenophase R5



LSD tillage=27,964

LSD liming=16,387

ST TILLAGE - conventional, plowing

CTD TILLAGE - conservation, loosening with a minimum of 30% of crop residues on the surface

CTS - conservation, tillage up to 10 cm with a minimum 50% of crop residues on the surface

Conclusions

- The dominant weed species were *Ambrosia artemisiifolia* L., *Calystegia sepium* (L.) R. Br. and *Echinochloa crus-galli* (L.) PB.
- All investigated weed parameters were on average the lowest on liming treatments, and **a statistically significant effect was found for the number of weeds in V10 and the coverage in phenophase R5 on liming**
- **Tillage significantly affected weed cover in R5, and the lowest was on CTD (24.67%)**

Conclusions

- **CTS treatment resulted in the highest number of weeds (24 m⁻²), biomass (134.43 g m⁻²) and cover (69.84%), but without statistically significant differences in relation to ST and CTD**

Conservation tillage systems in this study proved to be sustainable in terms of weed management.

THANK YOU FOR ATTENTION

This work has been fully supported by Croatian Science Foundation under the project "Assessment of conservation soil tillage as advanced methods for crop production and prevention of soil degradation – ACTIVEsoil" (IP-2020-02-2647)