Weed occurrence in soybean under different conservation tillage and liming

Iva Rojnica, Bojana Brozović, Irena Jug, Boris Đurđević, Marija Ravlić, Danijel Jug

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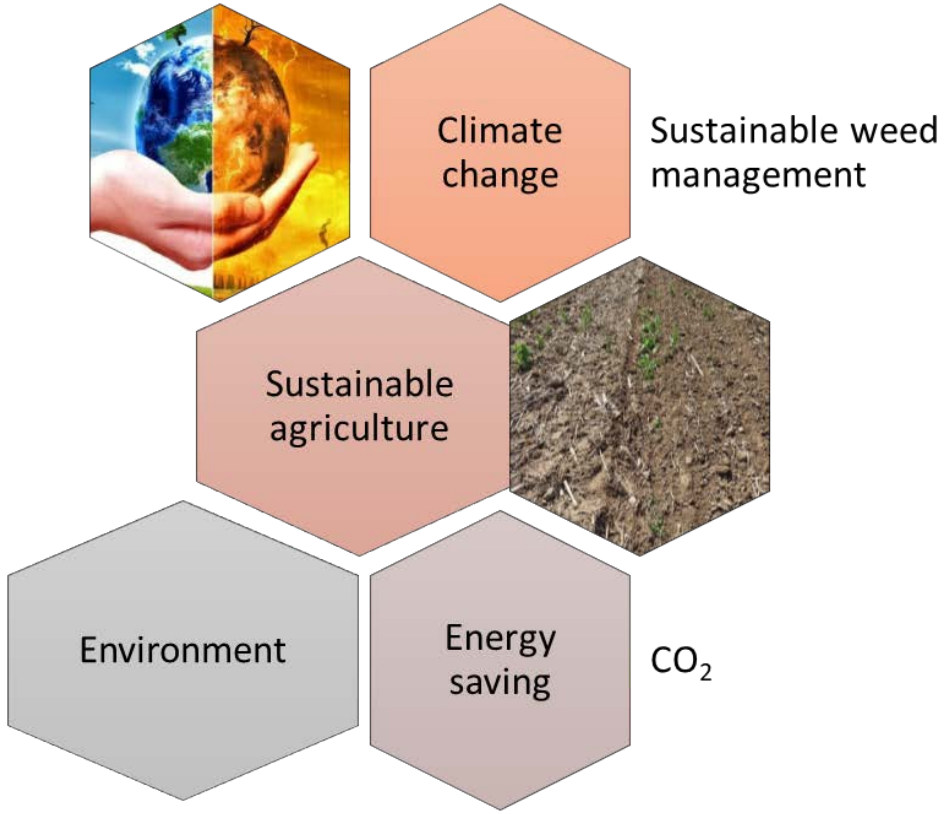
Introduction



Materials and Methods

- The aim of the research **was to determine the influence of tillage and limig on weed status in soybean fields**
- **Čačinci, Croatia** (17°86'36'' E, 45°61'32''N, 111 m a. s. l.)
- **2022**
- **split plot design with three replications**
- **Weed sampling occurred during critical weed period in soybean crops (V3) and at maturity stage (R7)**
- pH (KCl) = 4,09, pH (H2O) = 5,65
- **Herbicide application - Uniform for all treatments**

- Pre-em: 960 gl-1 S-Metolachlor (1.2 l ha-1), Metribuzin 70 % (0.6 kg ha-1)

- Post-em: 22.4 g l-1 Imazamoks, 480 g l-1 Bentazon (1 l ha-1)

Materials and Methods

Main treatment

- **conventional tillage** (ST - plowing up to 30 cm depth)
- **deep conservation tillage** (CTD - loosening up to 30 cm depth) with 30% minimum crop residue coverage
- **shallow conservation tillage** (CTS - loosening up to 10 cm depth) with 50% minimum crop residue coverage

Sub-treatment

- Liming material (CaO) was manually applied in recommended amounts (1046 kg/ha)

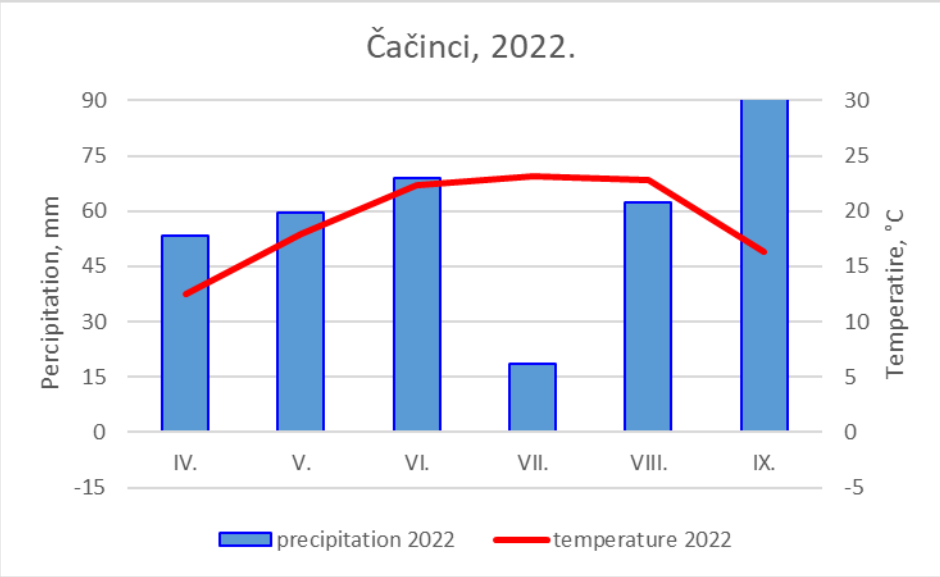
Materials and Methods

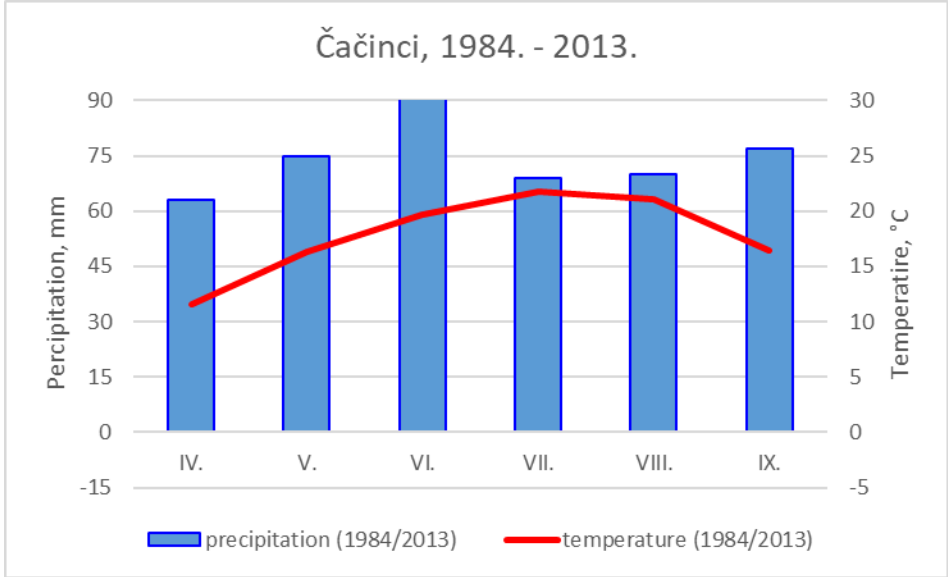
weed coverage - visual assessment using a square of 0.25 m^2 at four randomly selected places on each experimental plot

the number and above-ground **biomass of weeds** - counting individual **weed species** using a square of 0.25 m^2 in four replicates per experimental plot

weeds from each square - cut at ground level, counted, dried at 60°C for 48 h and weighed

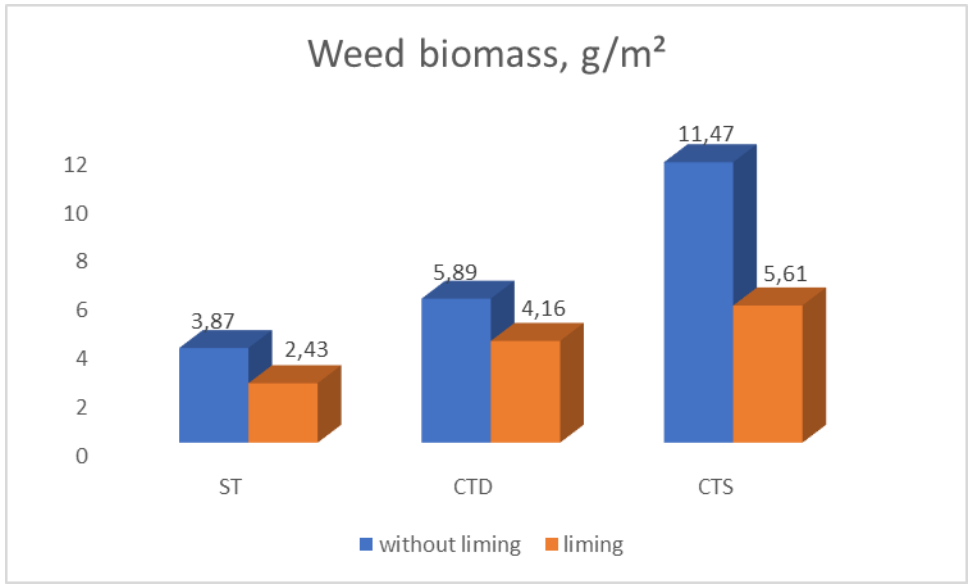
Weather conditions, Čačinci 2022



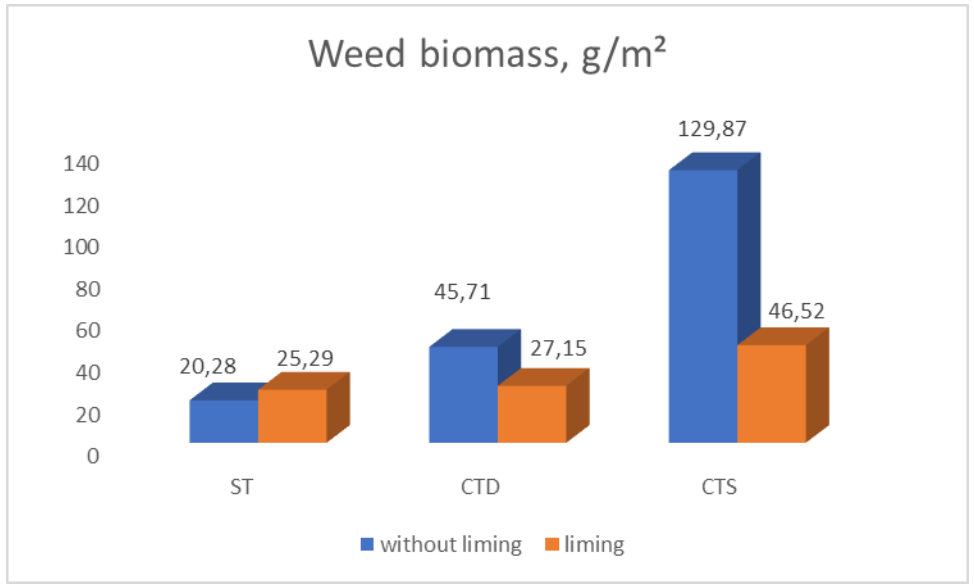


Weed biomass

V3 stage

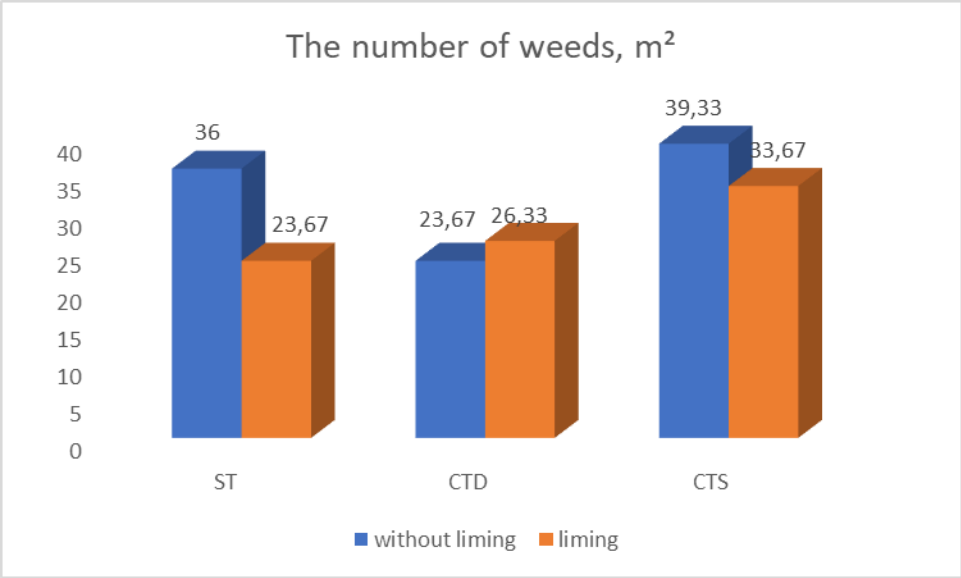


R7 stage

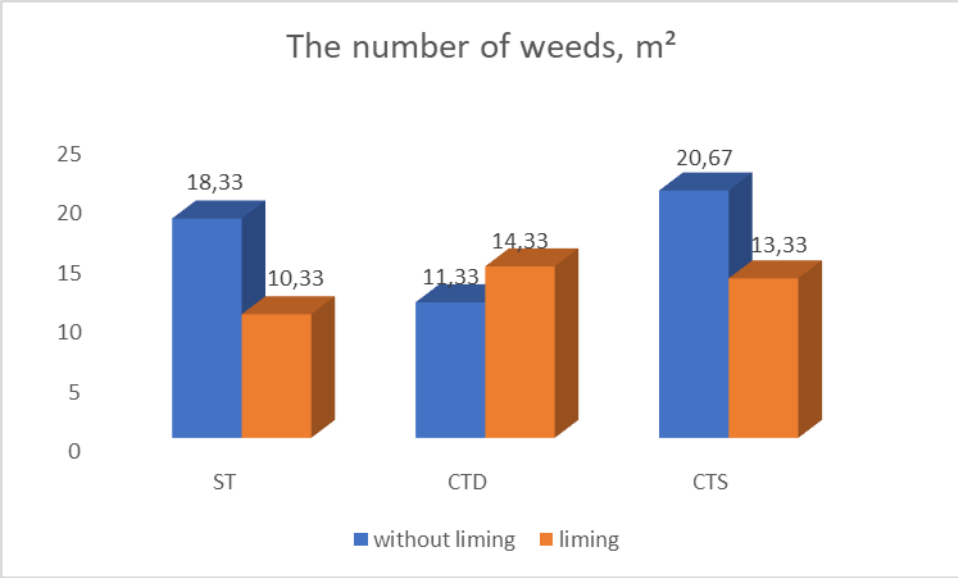


The number of weeds

V3 stage

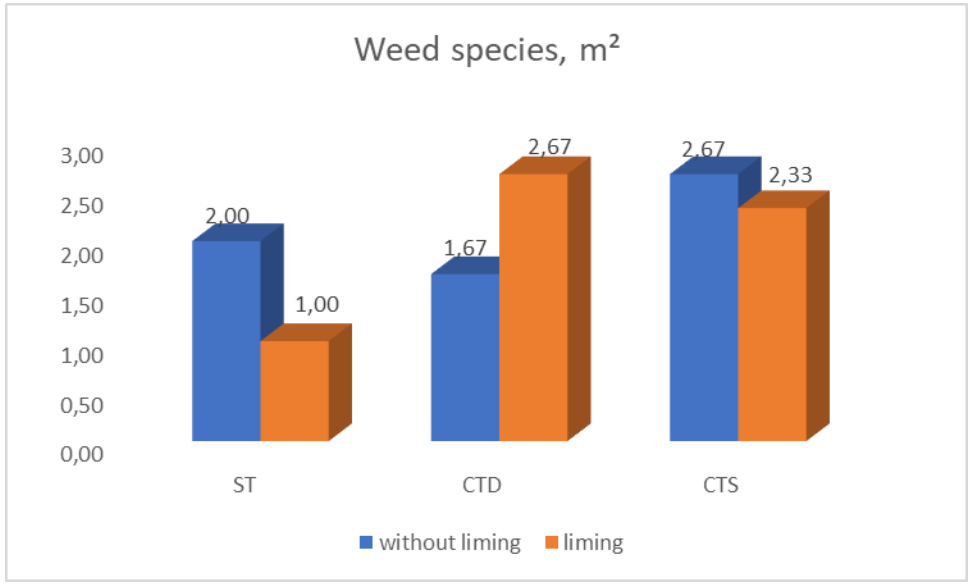


R7 stage

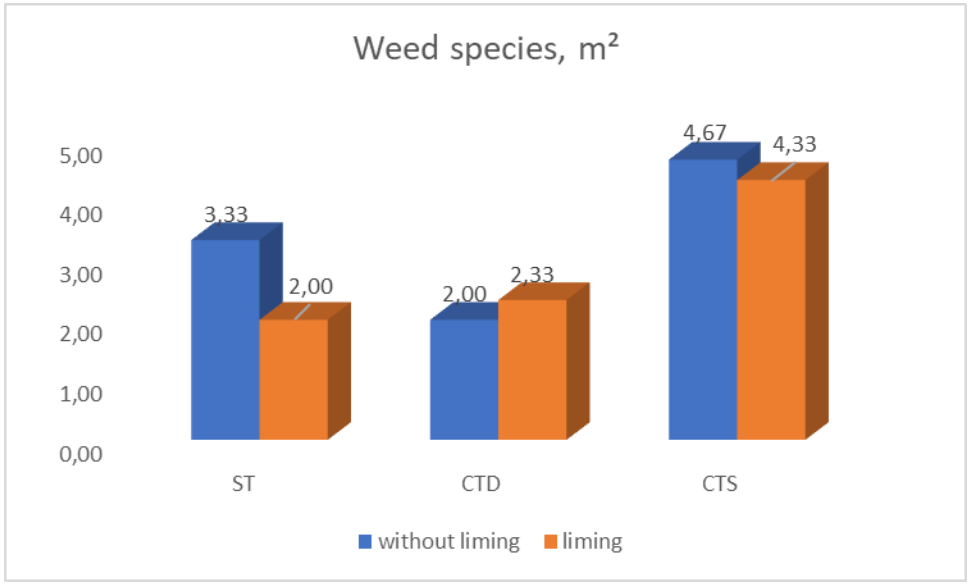


Weed species

V3 stage

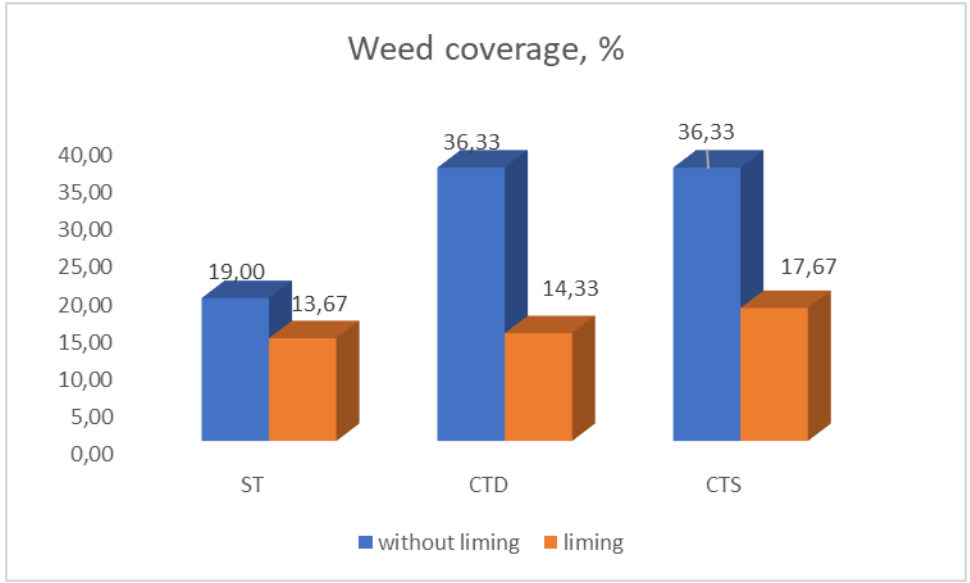


R7 stage

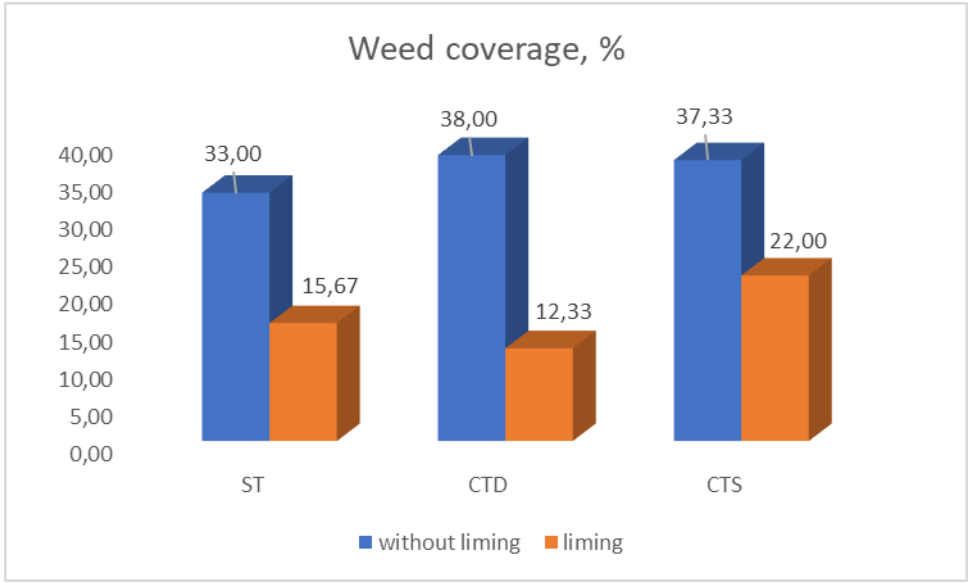


Weed coverage

V3 stage



R7 stage



Conclusions

On average, weed parameters were higher at non-limed treatments compared to limed.

Liming significantly decreased weed biomass and weed density on CTS in R7 growth stage. An average decreasing in weed coverage was present in all limed tillage treatments compared to non-limed.

On average, CTS with no liming led to increased weed infestation in soybean crops.

THANK YOU FOR ATTENTION

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