



Practice Abstract Nº 1

Tillage, chain mower and roller crimper impact on weed suppression

INTRODUCTION

Effective weed suppression is crucial in **organic cropping systems** to secure yields and reduce competition with main crops. This study assessed different cover crop termination methods—tillage, chain mowing, and roller crimper—on an organic cowpea trial site in Central Portugal. In this trial we compared the performance of a single cover crop (cc), a mixture of 3 cc and a mixture of 6 cc, before the sowing of cowpea.

PRACTICAL RECOMMENDATIONS

- 1 **Optimize cover crop sowing timing** to ensure optimal growth before termination and enhance weed suppression efficiency
- 2 **Consider integrating cover crop mixtures** to maximize ground coverage and weed suppression
- 3 **Adjust termination strategies** based on main crop requirements—roller crimper effectively suppresses weeds but may hinder crop emergence in certain conditions

MAIN RESULTS – OUTCOMES

- 🌱 **Cover crop termination method strongly influenced weed suppression.** The roller crimper showed the highest weed control (>90%)
- 🌱 **Delayed cover crop establishment affected growth and weed suppression.** Late sowing due to heavy rainfall slowed development, making termination less effective
- 🌱 **Six-species cover crop mixture provided the best ground coverage**
- 🌱 **Tillage improved cowpea growth but led to higher weed pressure.** In contrast, roller-crimped plots had excellent weed suppression but poor crop establishment
- 🌱 **Cowpea struggled in non-tilled plots.** Thick mulch from shredded cover crops prevented germination, while extreme weather further hindered development



TILLAGE



CHAIN MOWER



ROLLER CRIMPER


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