AGROECOLOGY FOR WEEDS

Practice Abstract Nº 20
Weed management in cowpea in an organic system, Portugal

INTRODUCTION

This study examined the impact of different cover crop compositions, termination methods, and weed management strategies on cowpea establishment and weed control in an organic trial site in Central Portugal. Three cover crop options: rye (*Secale cereale* L.), a three-species mixture of oat (*Avena sativa* L.), lupin (*Lupinus* spp.), and turnip (*Brassica rapa* subsp. rapa), and a six-species mixture of **oat**, **rye**, **lupin**, **turnip**, **mustard** (*Sinapis alba* L.), and **flax** (*Linum usitatissimum* L.).) were tested, along with three termination methods (tillage, mowing, and roller-crimper).

MAIN RESULTS – OUTCOMES

- The six-species cover crop mixture provided the best ground coverage, offering potential for improved weed management
- Cowpea germination was particularly poor in the roller-crimper-treated plots, likely due to compacted soil and thick mulch preventing emergence
- Weed suppression in cowpea was significantly higher in plots treated with the shredder and roller-crimper compared to tillage and the untreated control

PRACTICAL RECOMMENDATIONS

1. To improve establishment and weed suppression, sowing should occur earlier in the season to prevent delays caused by weather conditions
2. The roller-crimper treatment effectively suppressed weeds but hindered cowpea germination. Adjusting termination timing or integrating other soil preparation methods could balance these effects

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