AGROECOLOGY FOR WEEDS

Practice Abstract Nº 18
Weed management in triticale in a conventional system, Italy

INTRODUCTION

This study investigated the effectiveness of various weed management strategies in a triticale cropping system at a conventional trial site in Sardinia, Italy. A Randomized Complete Block Design (RCBD) was used, with treatments including two individual cover crops, a cover crop mixture, chemical and mechanical control methods, cultural practices, and a digital control method. The goal was to assess the impact of these treatments on weed diversity and triticale grain yield.

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MAIN RESULTS – OUTCOMES

- *Oxalis pes-caprae* (Bermuda buttercup) and Asteraceae species dominated the field, with no reduction in their density or biomass across all treatments
- Triticale grain yield increased by 20% in plots where *Medicago truncatula* and *Trifolium brachycalycinum* were used as a cover crop mixture, compared to untreated control plots
- The monoculture of *M. truncatula* also resulted in a high grain yield (4,344.1 kg ha^{-1}) and did not differ from the mixture of *M. truncatula* + *T. brachycalycinum* (4,420.6 kg ha^{-1})
- Straw yield was up to 21% lower in the herbicide-treated plots than in the cover crop plots and 13% lower than in the untreated control plots. It is possible that the herbicide application injured the triticale plants to some extent and suppressed their biomass production

PRACTICAL RECOMMENDATIONS

1 **Optimize cover crop selection** → The cover crop mixture of *M. truncatula* and *T. brachycalycinum* showed potential for improving triticale grain yield, although weed control was not significantly impacted

2 **Combine alternative weed management practices** → In our trials, given the heavy infestation of *O. pes-caprae*, combining multiple weed management strategies, such as targeted herbicide use or mechanical control, may be needed to manage persistent weed species

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