



AGROECOLOGY FOR WEEDS

Practice Abstract N° 2

Use of pelargonic acid to control weeds in triticale crop

INTRODUCTION

Weed control in triticale is challenging as a narrow row crop. **Pelargonic acid** (bioherbicide) is increasingly used as an alternative weed control method, both in organic systems as well as in conventional systems aiming to reduce reliance on herbicides. This study assessed the impact of pelargonic acid on weed suppression and triticale yield in trials in Sardinia, Italy.

MAIN RESULTS – OUTCOMES

- ❖ Pelargonic acid effectively reduced weed biomass
- ❖ While **effective in weed control**, the application of pelargonic acid was associated with **lower triticale grain yield** compared to untreated and cover crop treatments
- ❖ Lower straw yield compared to cover crop treatments. The impact of pelargonic acid on overall biomass production suggests potential stress on the crop

PRACTICAL RECOMMENDATIONS

- 1 Optimize application timing and rate to minimize negative impacts on triticale yield while maximizing weed suppression
- 2 Combine pelargonic acid with other weed management strategies such as cover cropping or mechanical control to enhance effectiveness.



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What is pelargonic acid?

Pelargonic acid (PA) ($\text{CH}_3(\text{CH}_2)_7\text{CO}_2\text{H}$, n-nonanoic acid) is a saturated, nine-carbon fatty acid (C9:0) naturally occurring as esters in the essential oil of *Pelargonium spp.* and can be derived from the tissues of various plant species. Pelargonic acid along with its salts and formulated with emulsifiers is used in terms of weed management as a **nonselective herbicide** suitable either for garden or professional uses worldwide.

Travlos, I., Rapti, E., Gazoulis, I., Kanatas, P., Tataridas, A., Kakabouki, I., & Papastylianou, P. (2020). The Herbicidal Potential of Different Pelargonic Acid Products and Essential Oils against Several Important Weed Species. *Agronomy*, 10(11), 1687. <https://doi.org/10.3390/agronomy10111687>

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