

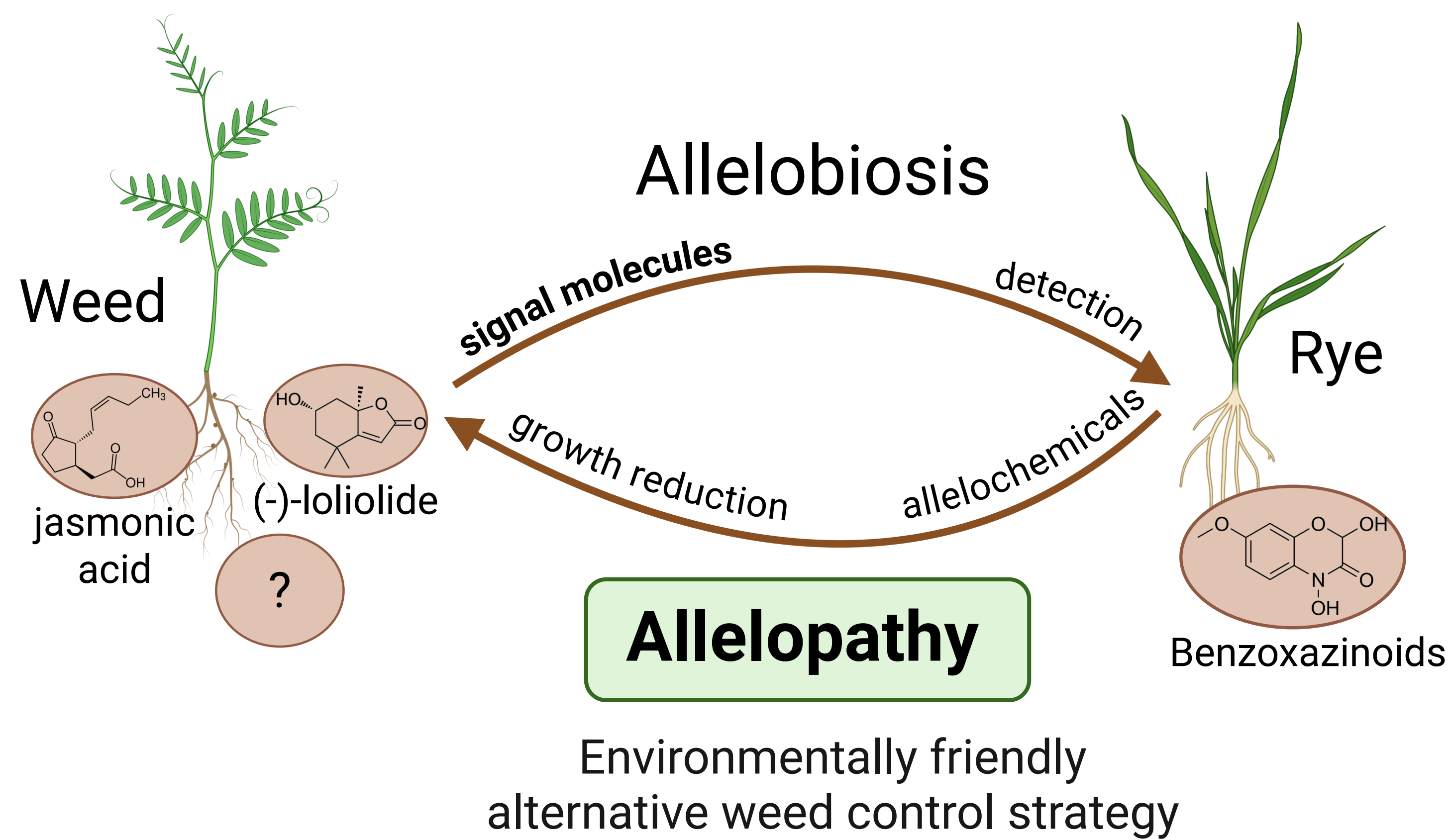
Underground chemical war: molecular basis of weed-induced allelopathy in crop systems

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INTRODUCTION

Weeds cause on average 34% yield loss. Although synthetic herbicides are widely used, their **environmental and health risks**, along with the rise of **herbicide-resistant weeds**, limit their long-term sustainability.



ALLELOPATHY

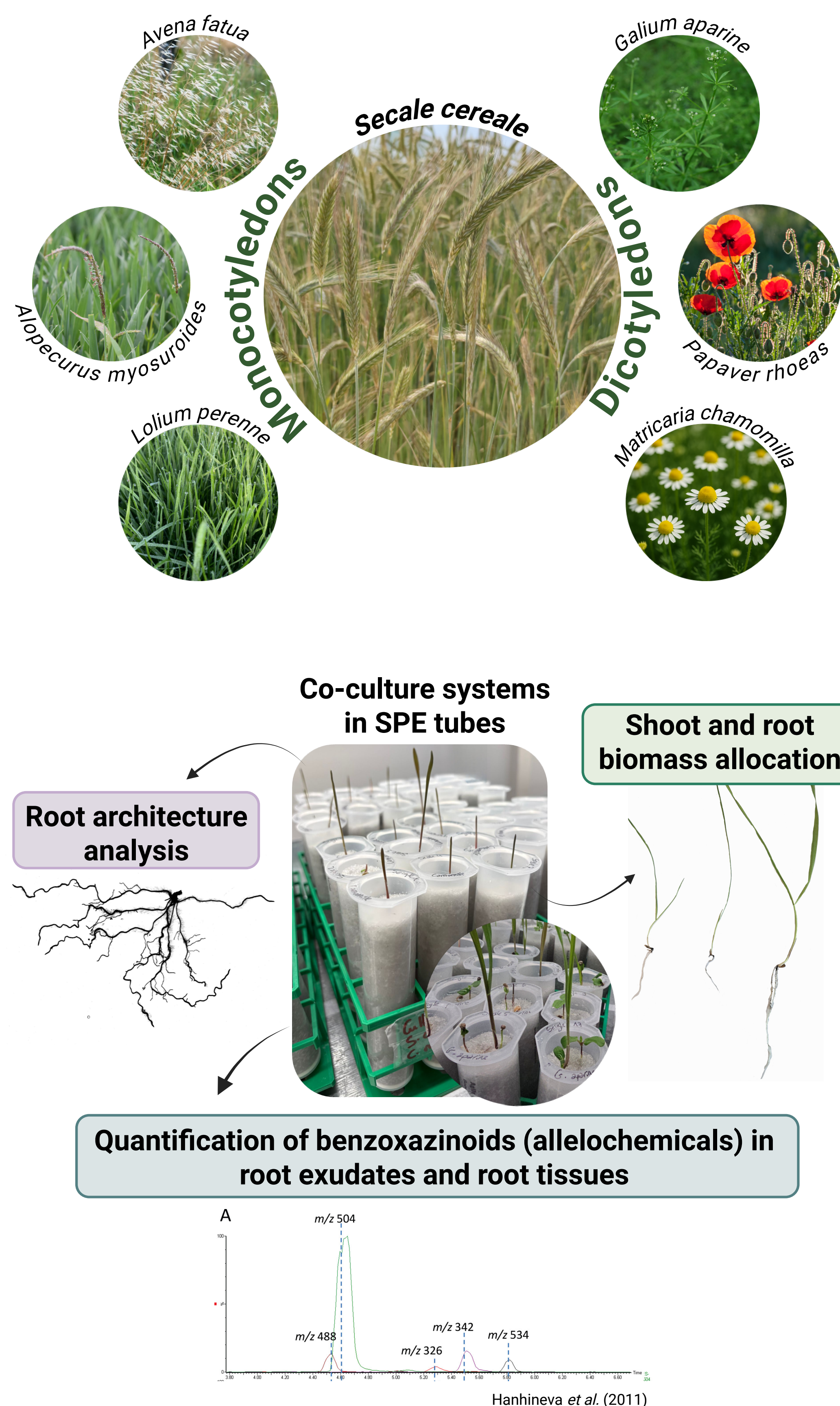
A process involving secondary metabolites (**allelochemicals**) generated by plants that affect the growth, development of agricultural and biological systems.

In cereals, **allelopathic responses are induced by the perception of neighboring weeds**. This phenomenon allows plants to optimize the balance between growth and defense.

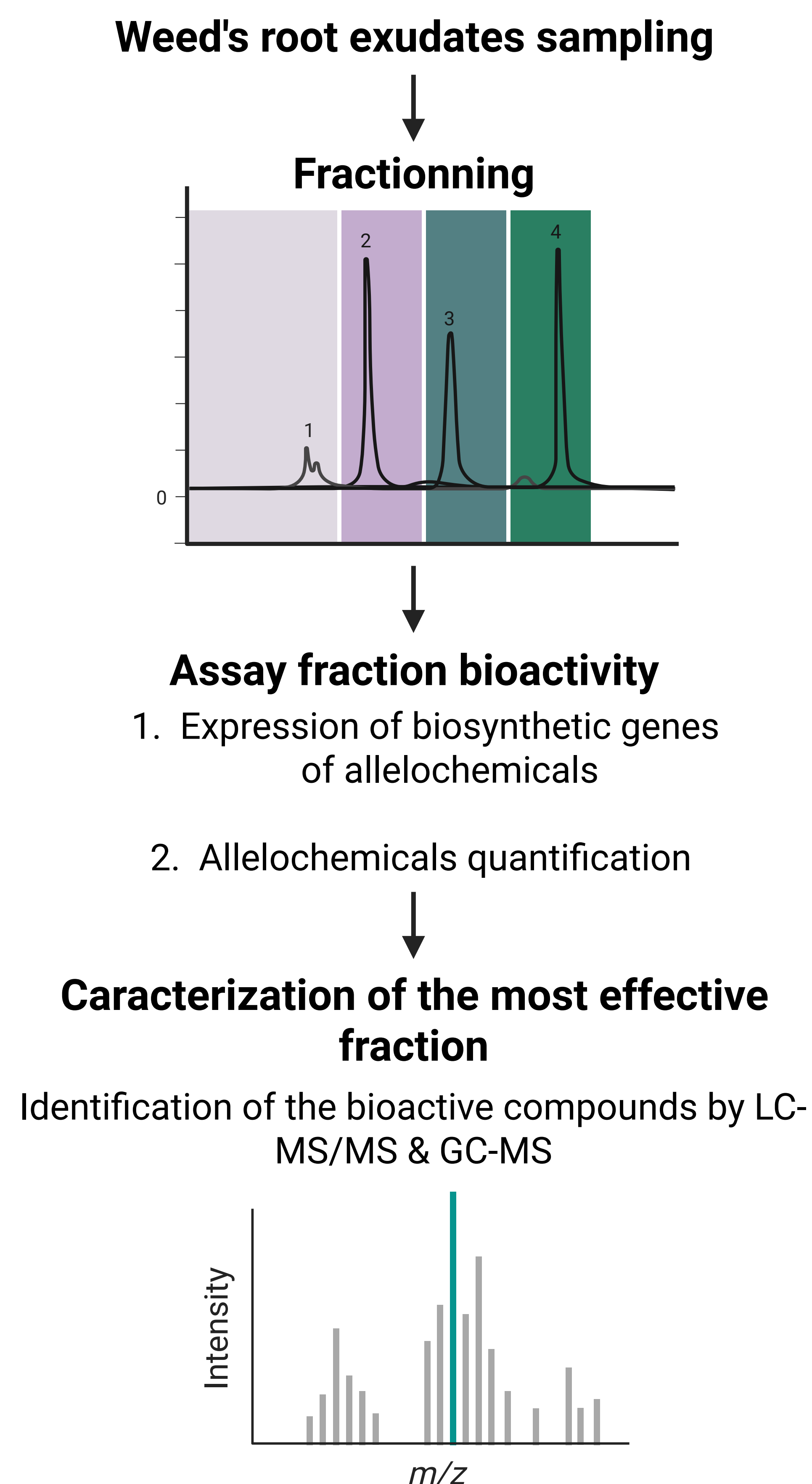
OBJECTIVE

Selecting a pair of model plants that illustrate the phenomenon of induced allelopathy and identifying weed-derived molecules that trigger allelopathic responses in rye.

1. Inducibility of rye allelopathy by weeds



2. Identification of the bioactive compounds



CONCLUSION

Ultimately, elucidating plant-plant chemical communication will contribute to the development of more effective and sustainable weed control strategies, reducing reliance on synthetic herbicides and promoting agroecological approaches.

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3. Transcriptomic analysis

Molecular pathways induced in crop plant's roots by the application of the identified molecules.



Do you have a question?

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