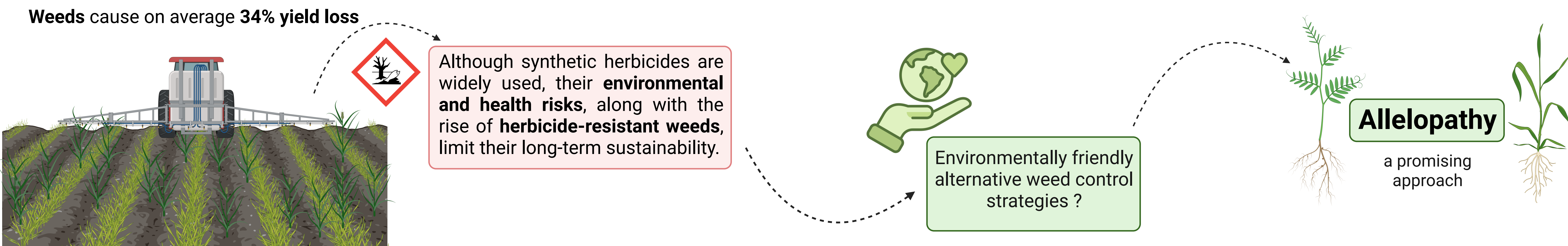


# Chemistry of belowground interactions: allelochemical pathways triggered by weeds?

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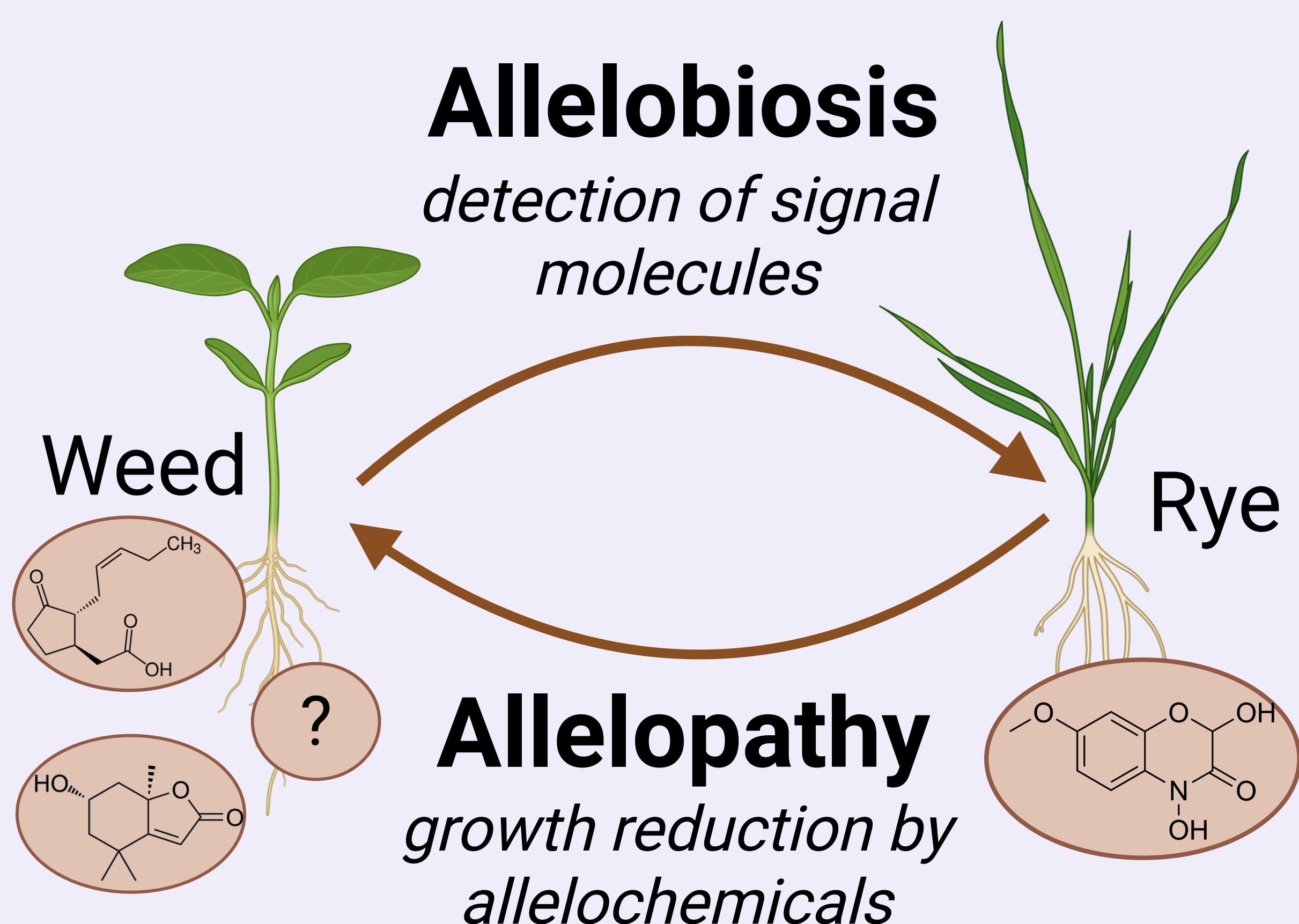
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## CONTEXT



## INDUCED ALLELOPATHY

Allelopathy refers as "any process involving secondary metabolites (**allelochemicals**) generated by plants that **affect the growth, development of agricultural and biological systems**" (*International Allelopathy Society*). In cereals, allelopathic responses can be triggered by the detection of weeds.



## OBJECTIVE

Identifying weed-derived molecules that trigger allelopathic responses in rye

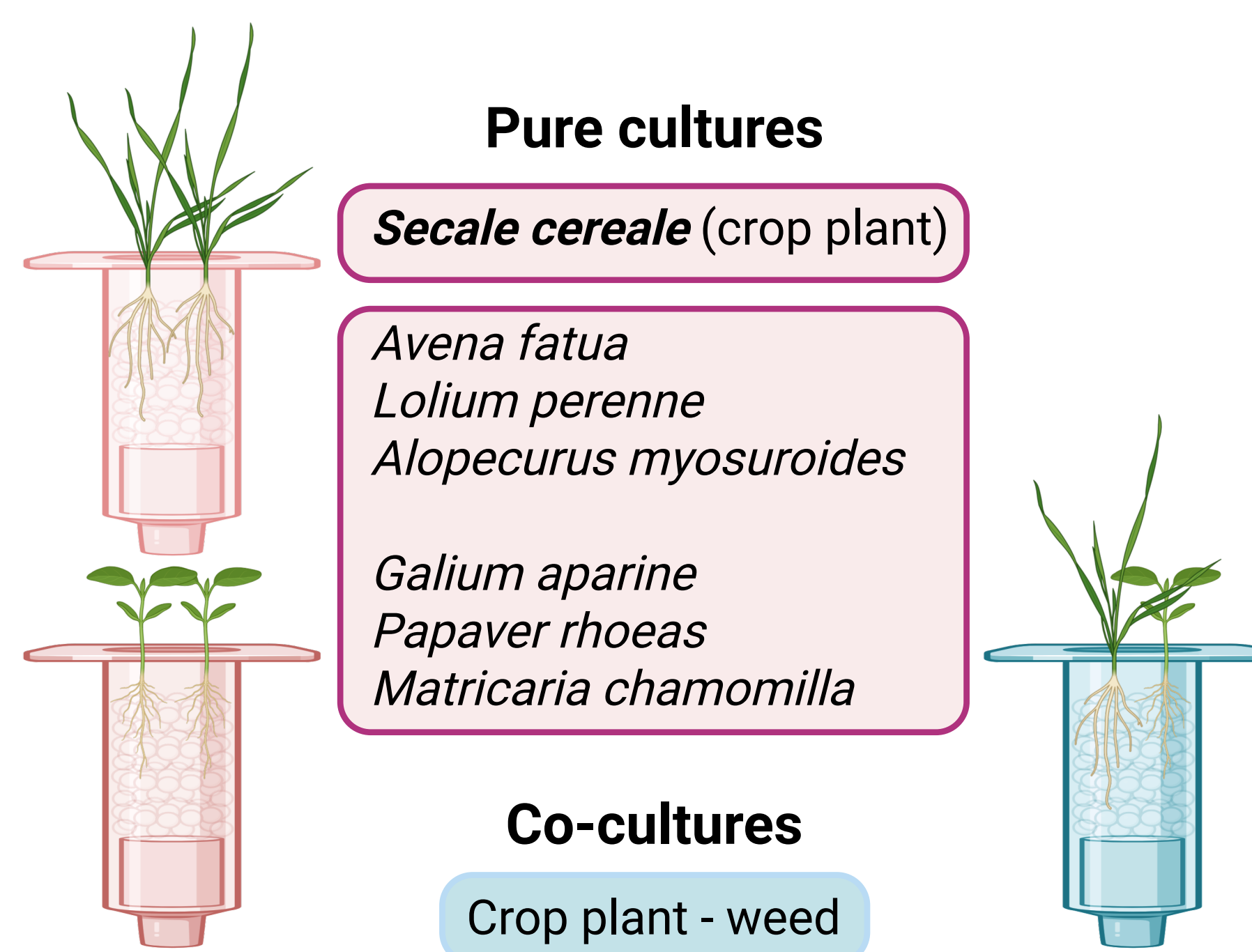
## CONCLUSION

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.

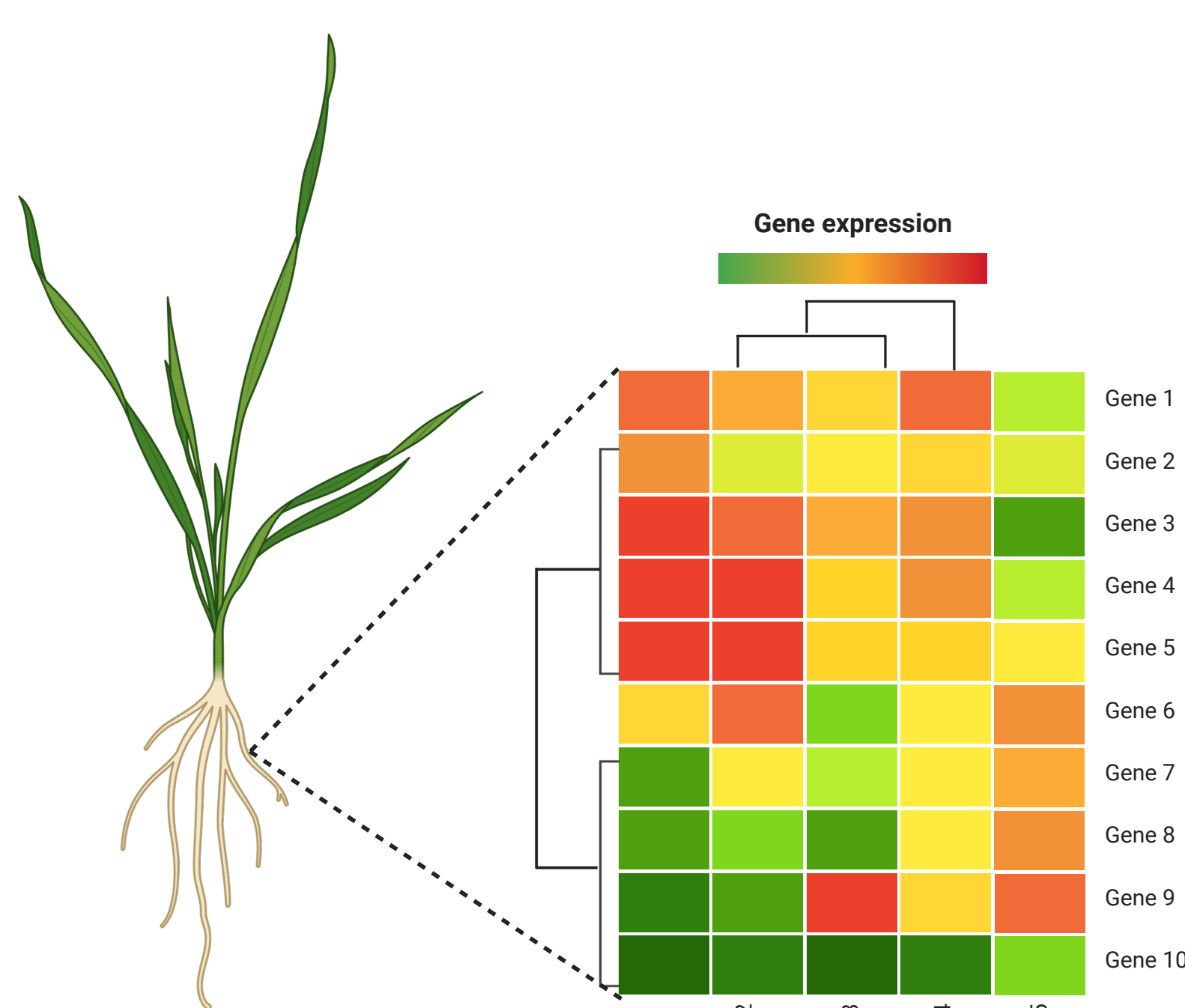
## WORKPACKAGES

1 - Establishment of hydroponic culture systems

2 - Identification of the bioactive compounds

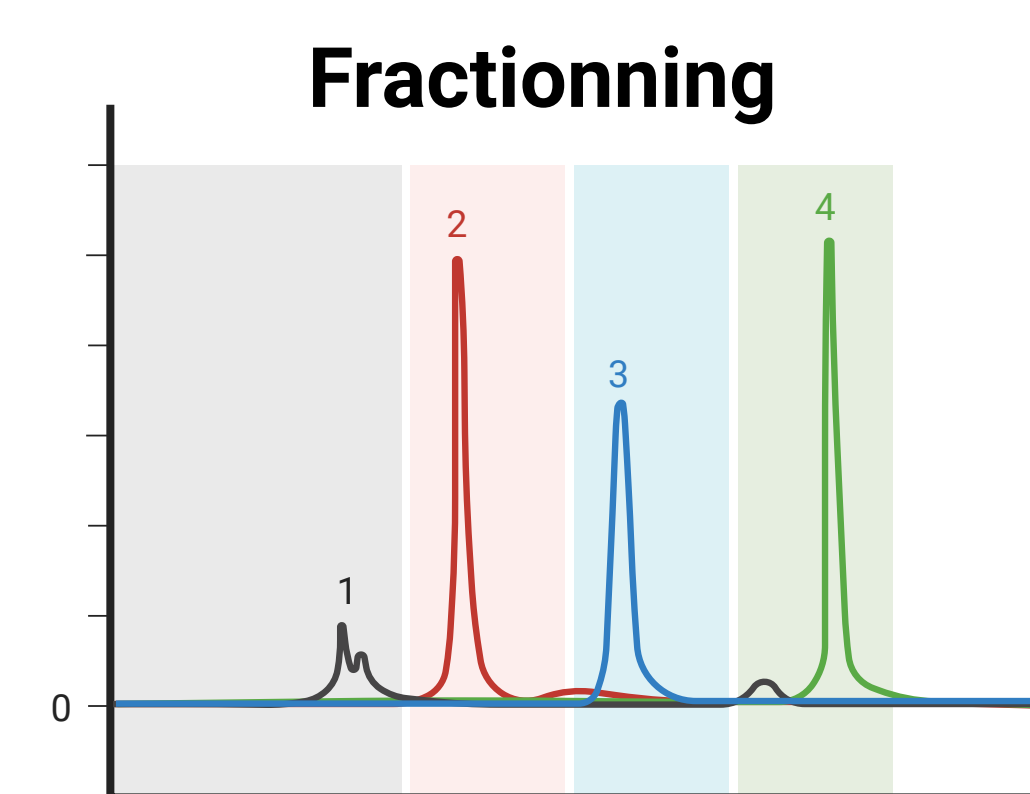


3 - Transcriptomic analysis



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

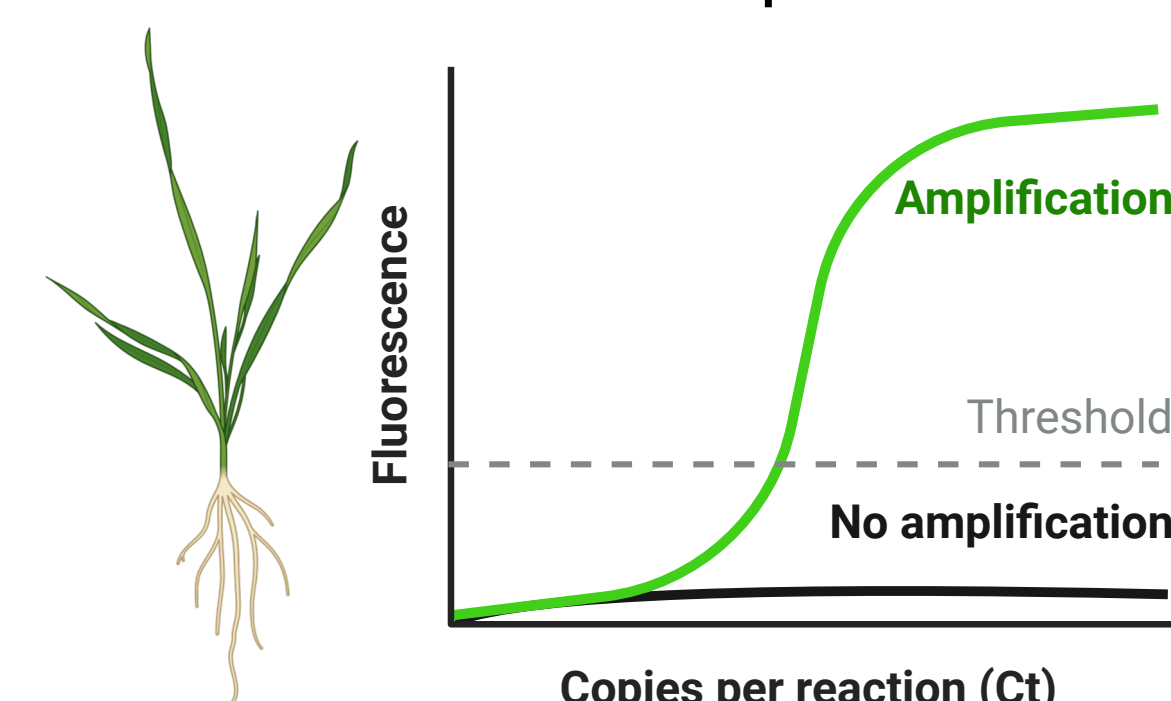
Weed's root exudates sampling



**Assay fraction bioactivity**

1. Expression of biosynthetic genes of allelochemicals

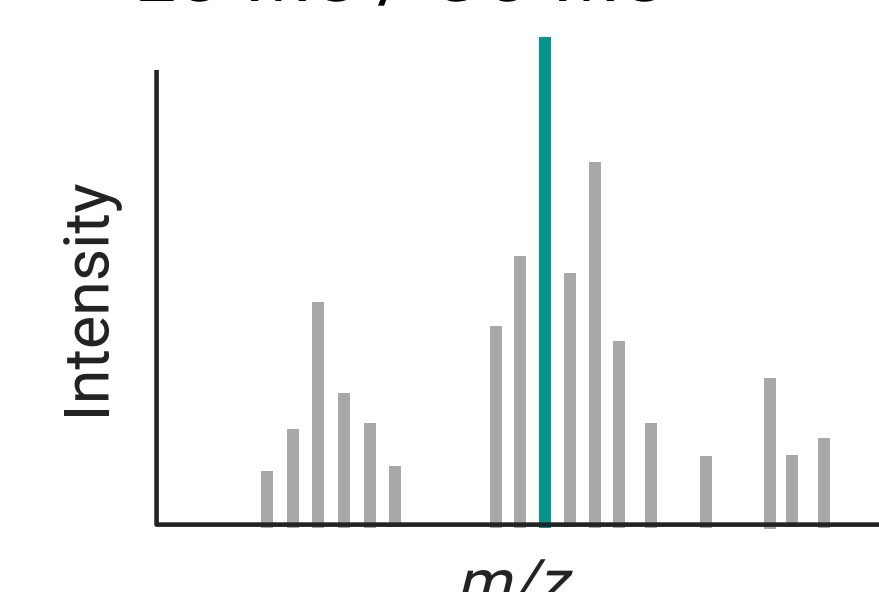
2. Allelochemicals quantification



**Characterization of the most effective fractions**

Identification of the bioactive compounds that induce a surge in the production of allelochemicals

LC-MS / GC-MS



## REFERENCES

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