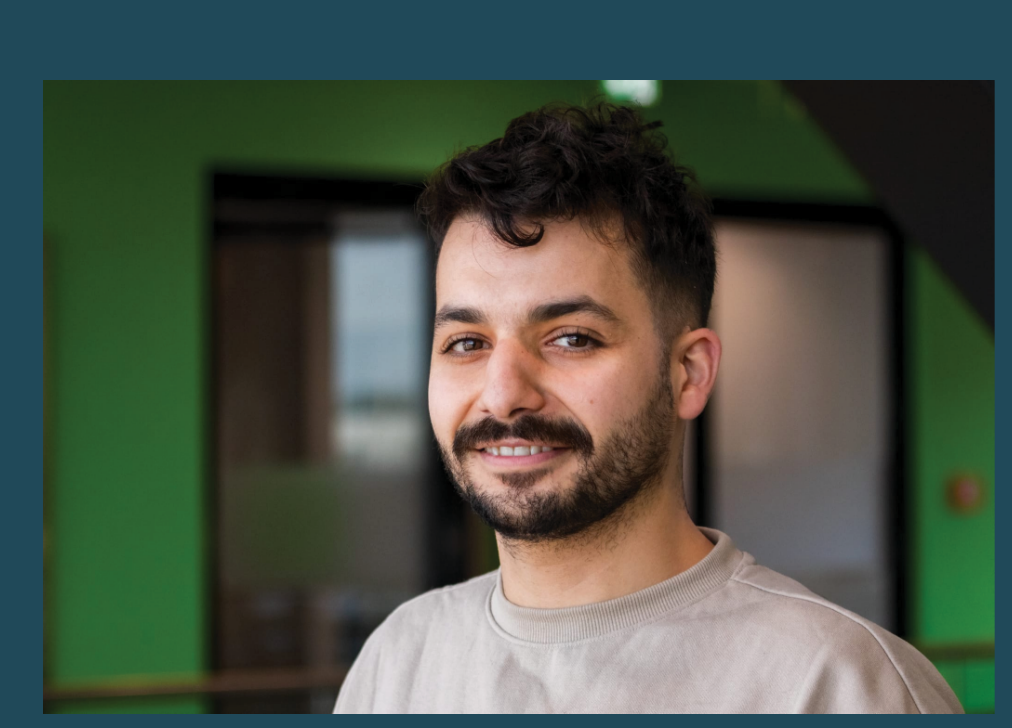


Breeding 4.0: leveraging multi-omics for resilient alfalfa cultivars

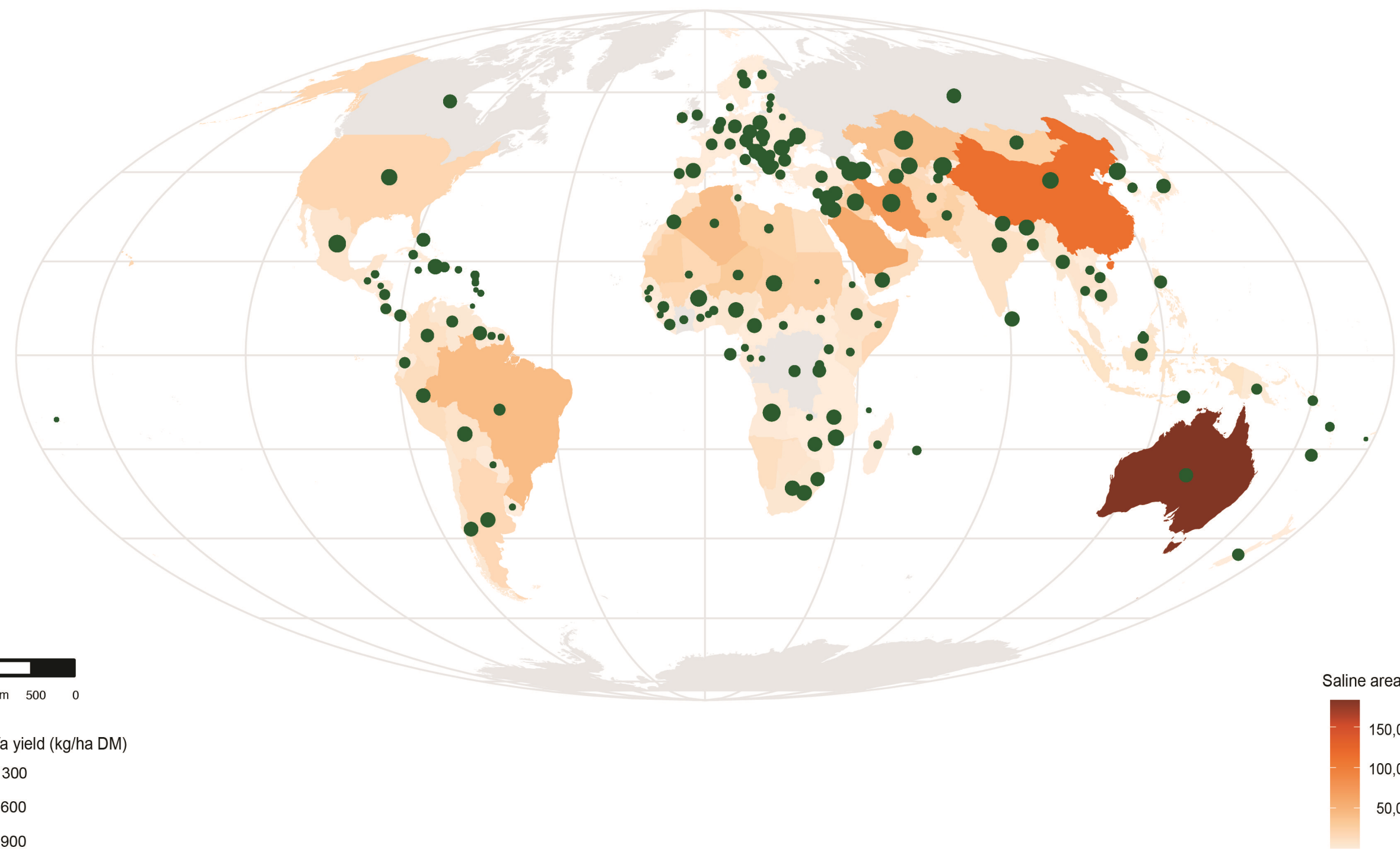


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Background

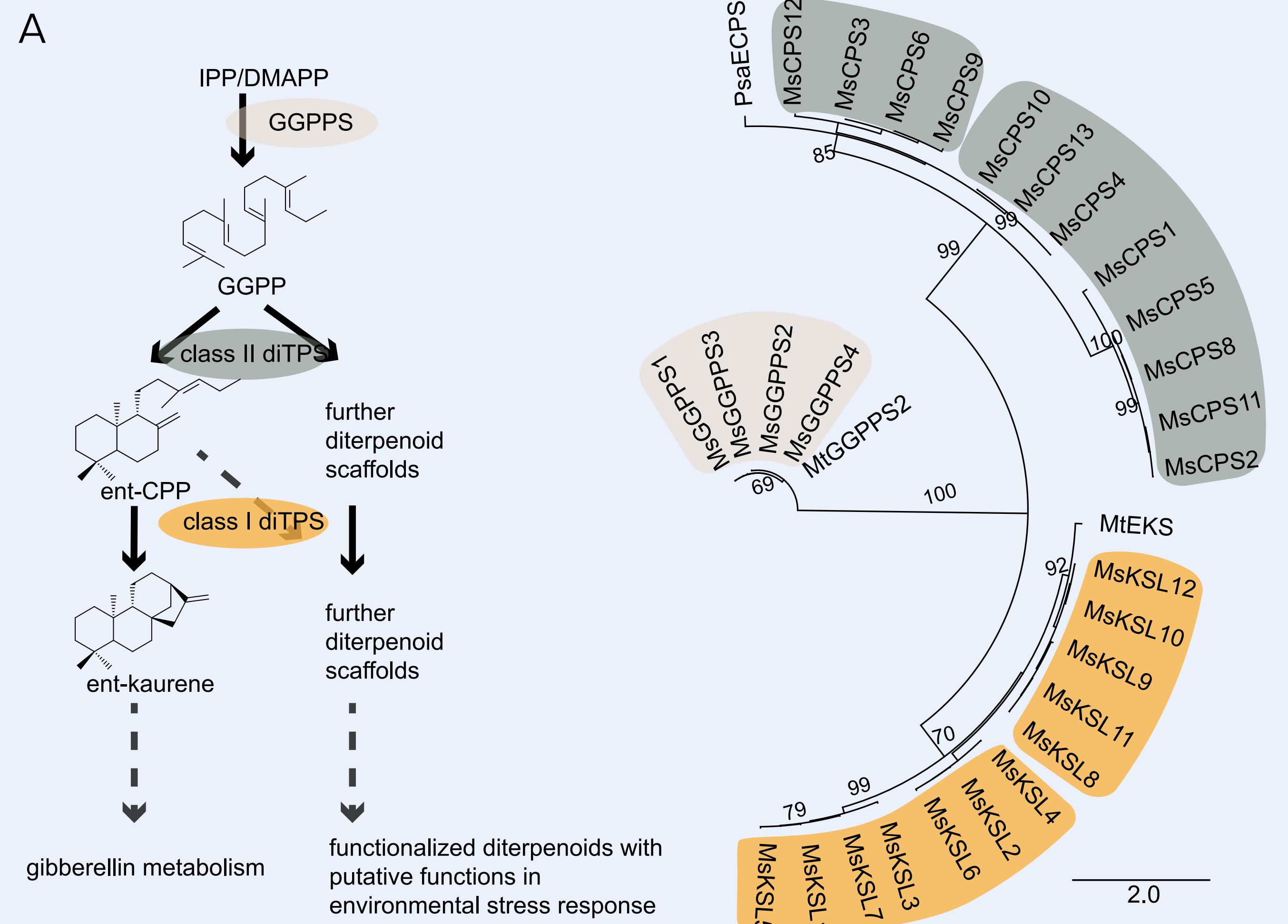
Soil salinity negatively affects crop productivity worldwide. *Medicago sativa* is a relatively salt-tolerant legume with high-quality protein for food & feed, but its cultivation is threatened by the fast pace of salinization.



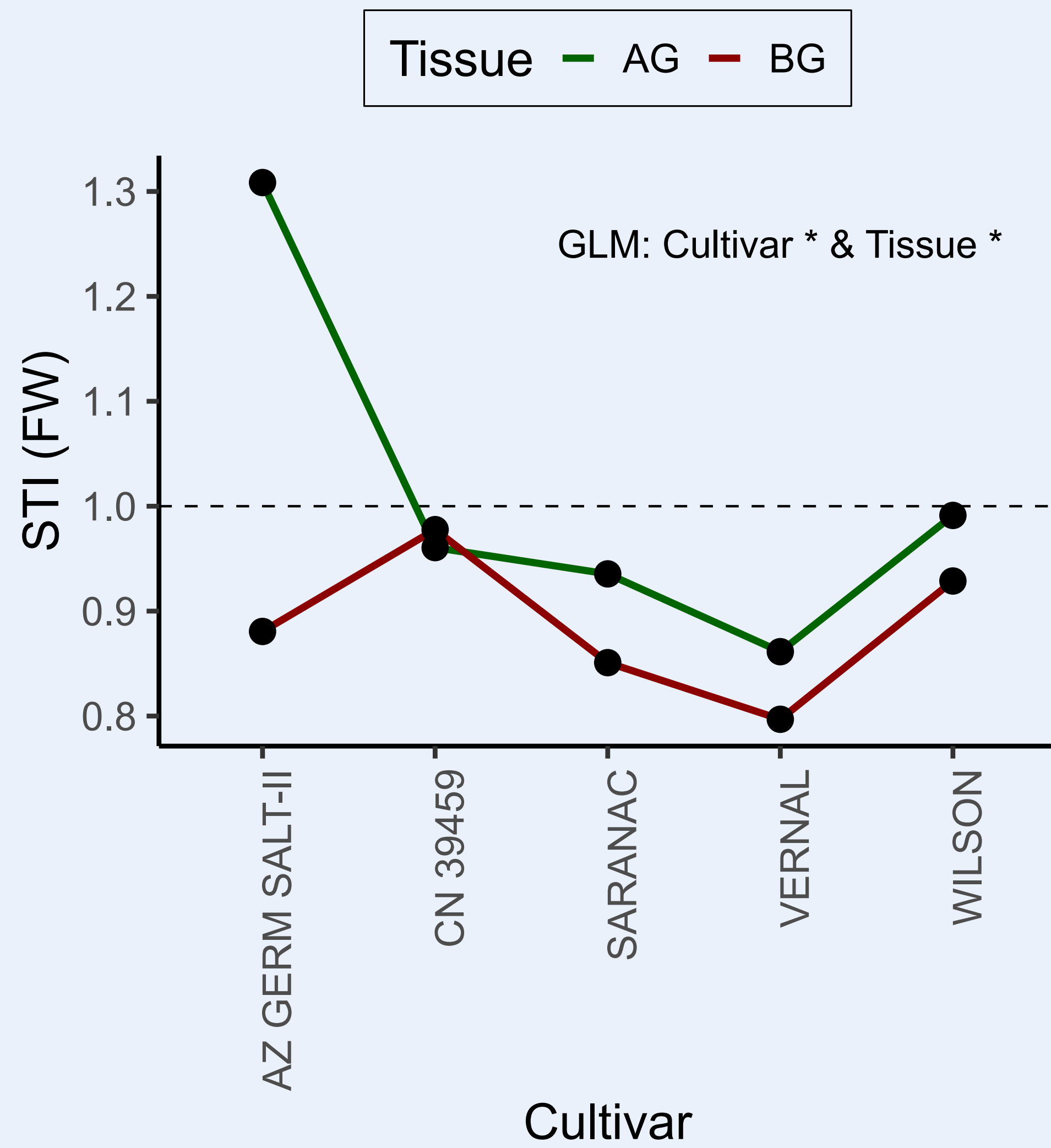
Global alfalfa production and salinization areas ($EC_e \geq 4$ dS m^{-1}) displayed per country (Liu et. al, 2024).

Aim

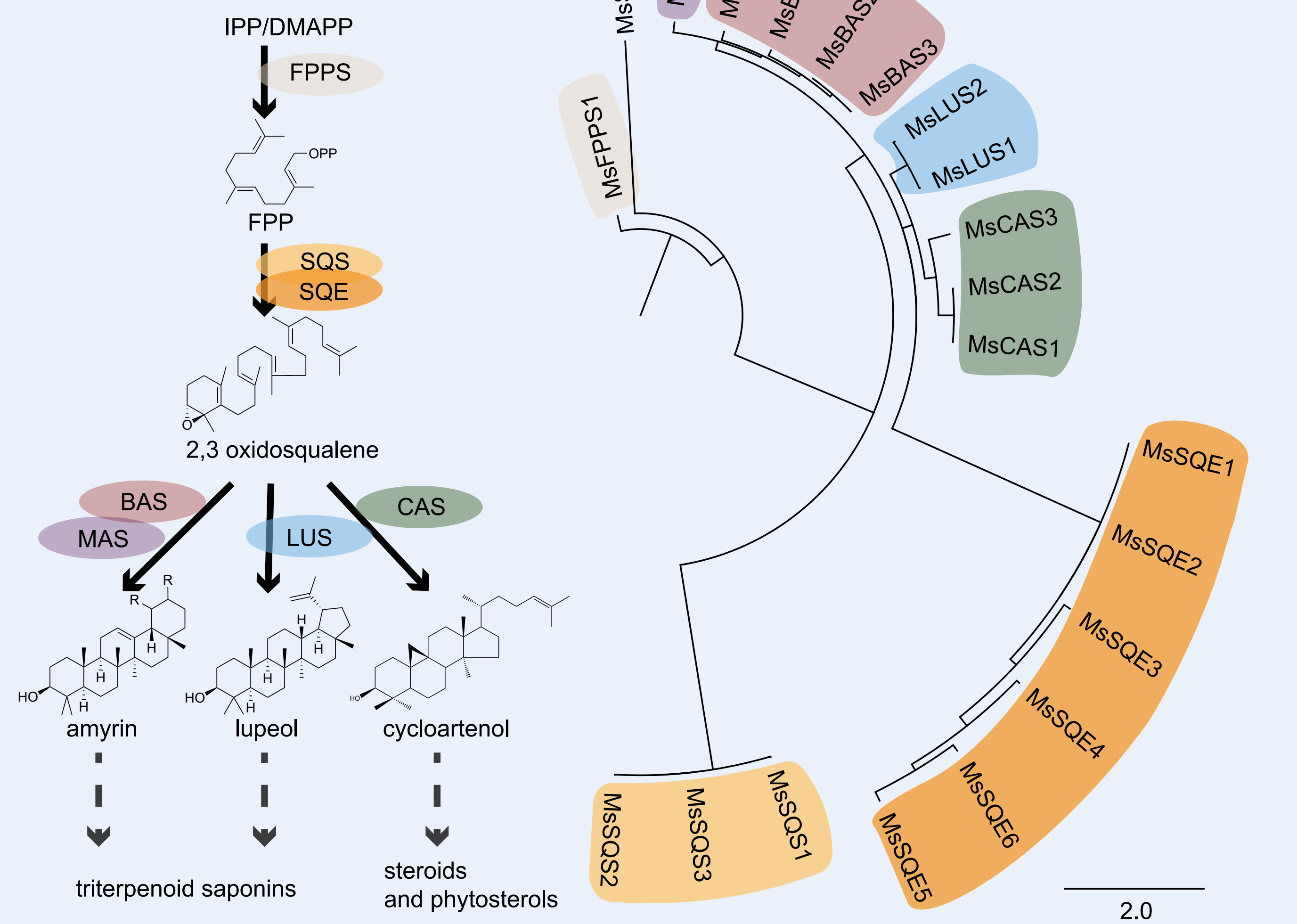
Our aim is the discovery and modification of terpenoid networks to generate more salt-tolerant *Medicago sativa* lines.



Salt-tolerance screening

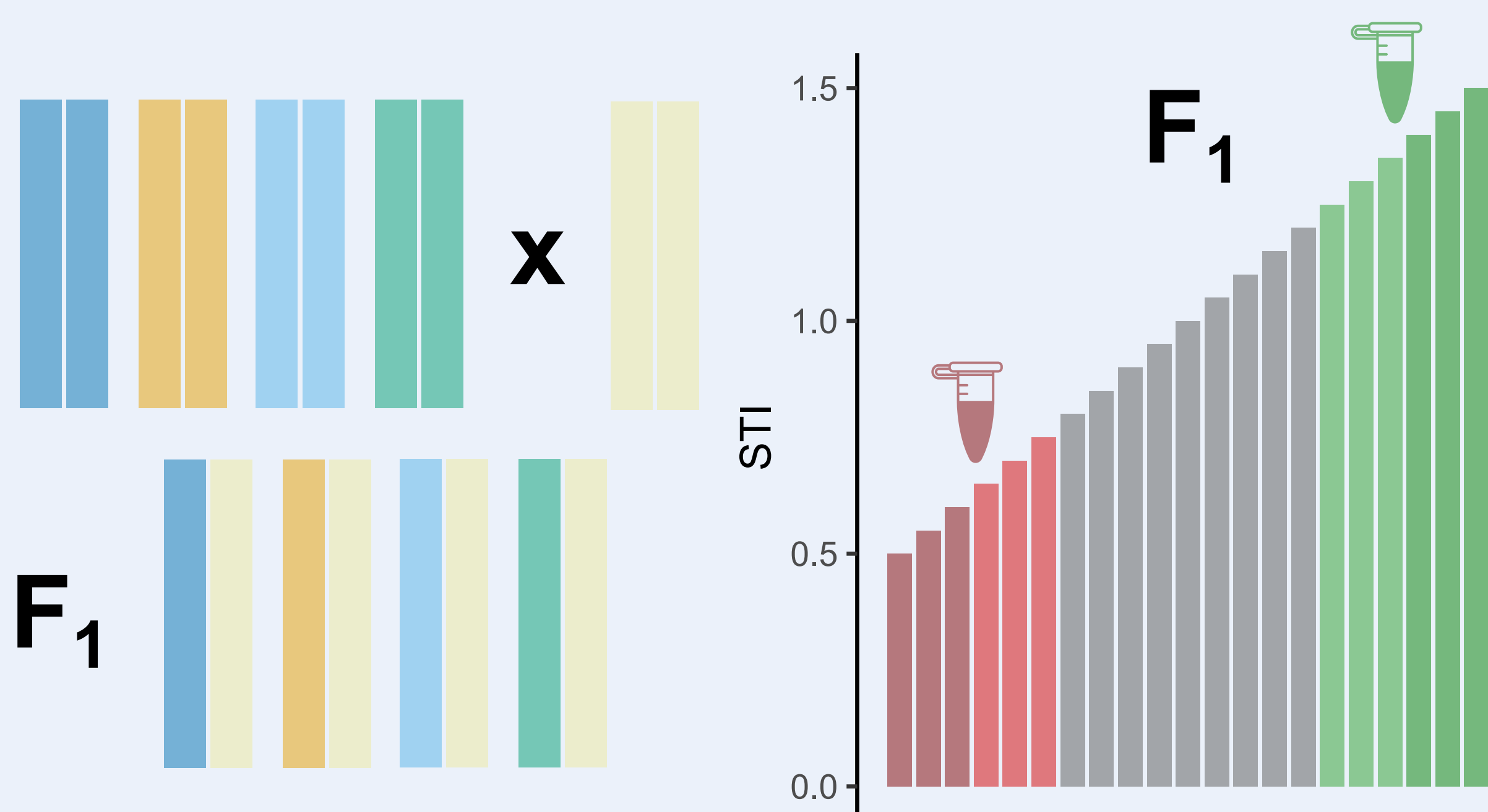


B

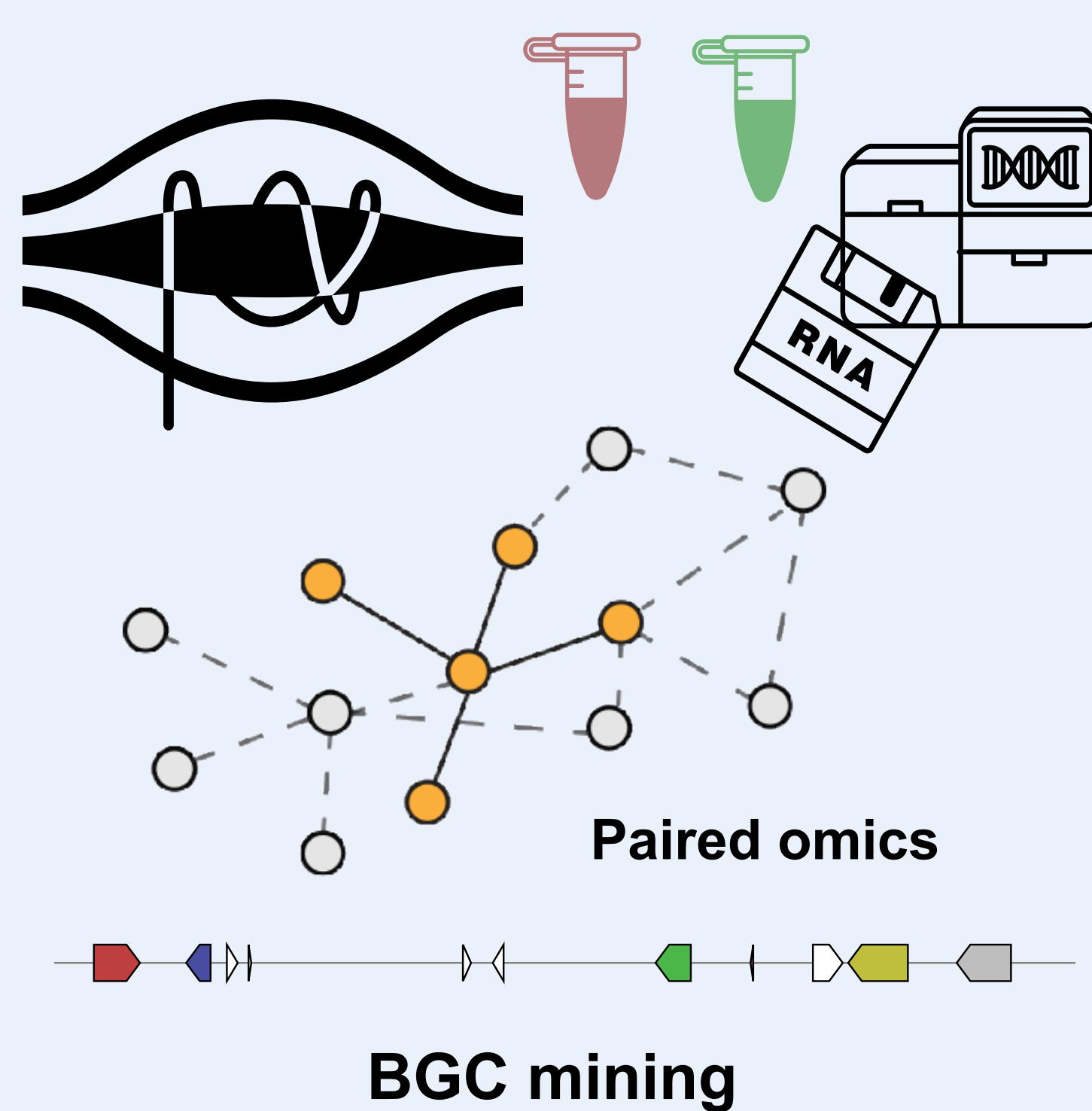


NAM-population

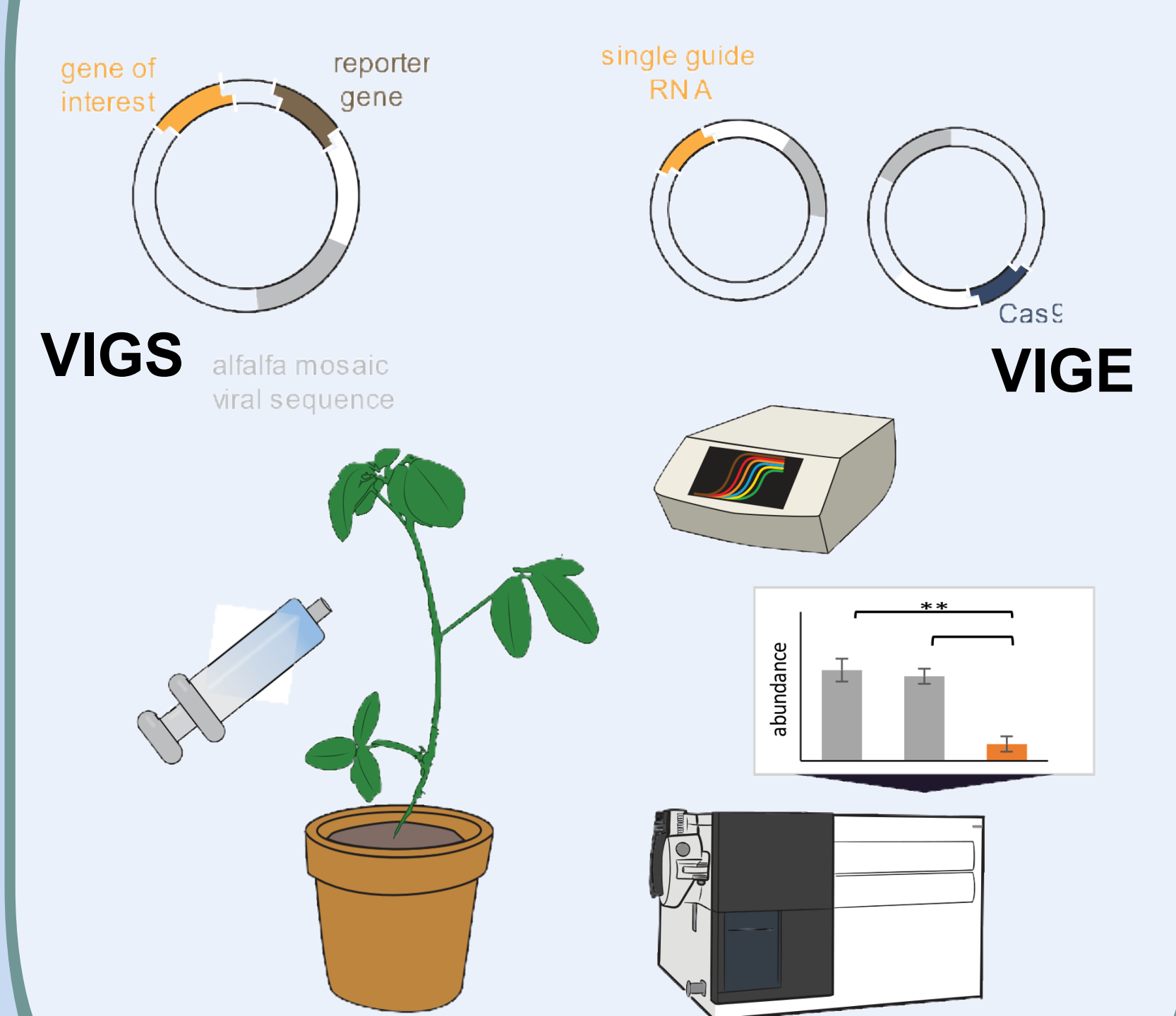
Phenotyping



Pathway discovery



Functional characterization



- References**
- Tiedge et al. 2022. Foxtail mosaic virus-induced gene silencing (VIGS) in switchgrass (*Panicum virgatum* L.). *Plant Methods*
 - Liu et al. 2024. Thriving in a salty future: morpho-anatomical, physiological and molecular adaptations to salt stress in alfalfa (*Medicago sativa* L.) and other crops. *Annals of Botany*