Alfalfa to get back into planetary boundaries

2025 world alfalfa congress
FRANCE REIMS-CHÂLONS

Genetics and breeding

Charlie Brummer

Young researcher session

FROM 03 › TO 06 nov. 2025

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Designing a lucerne ideotype for use as a living mulch for cash crop production and genetic analysis of key underlying traits

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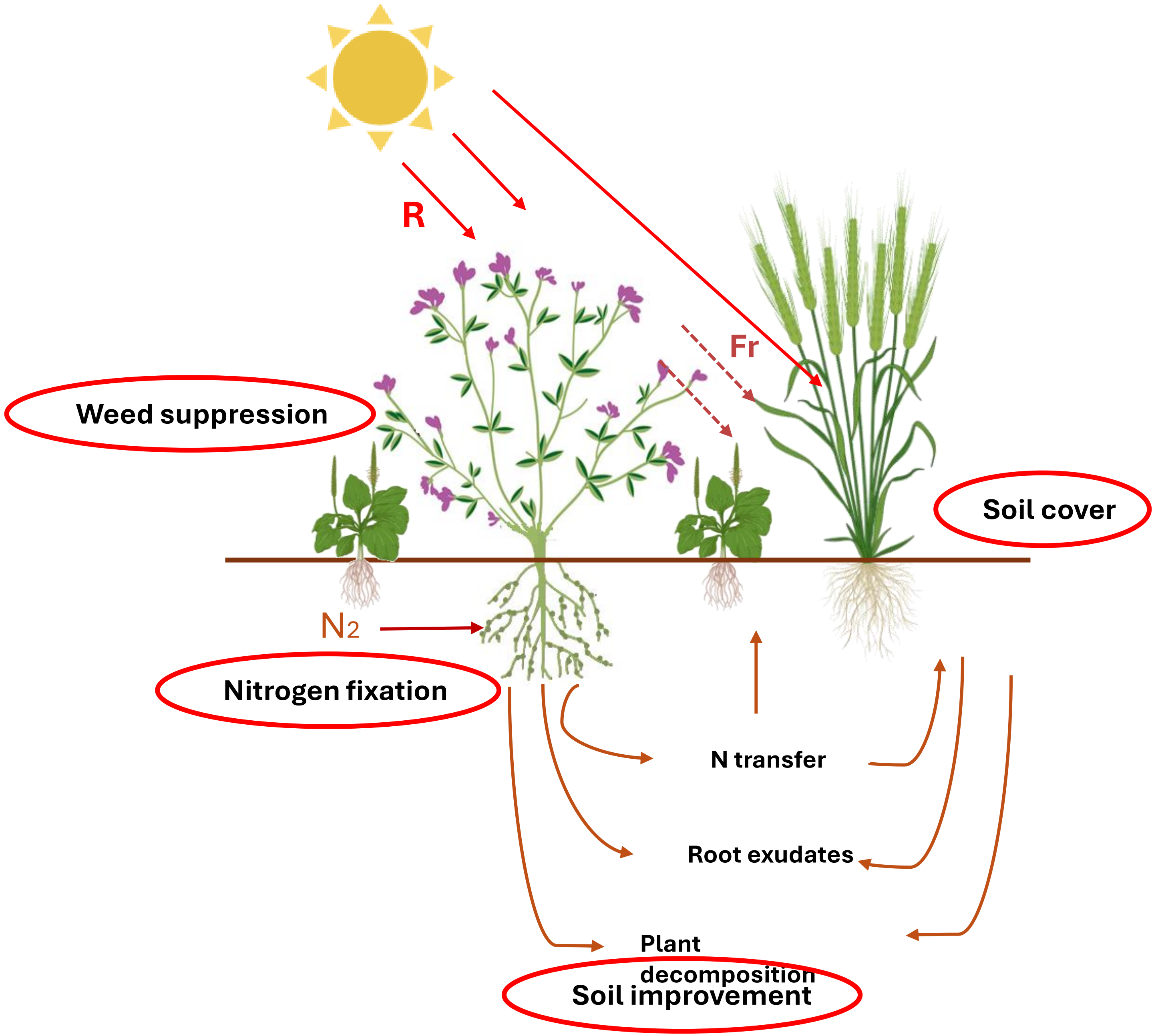
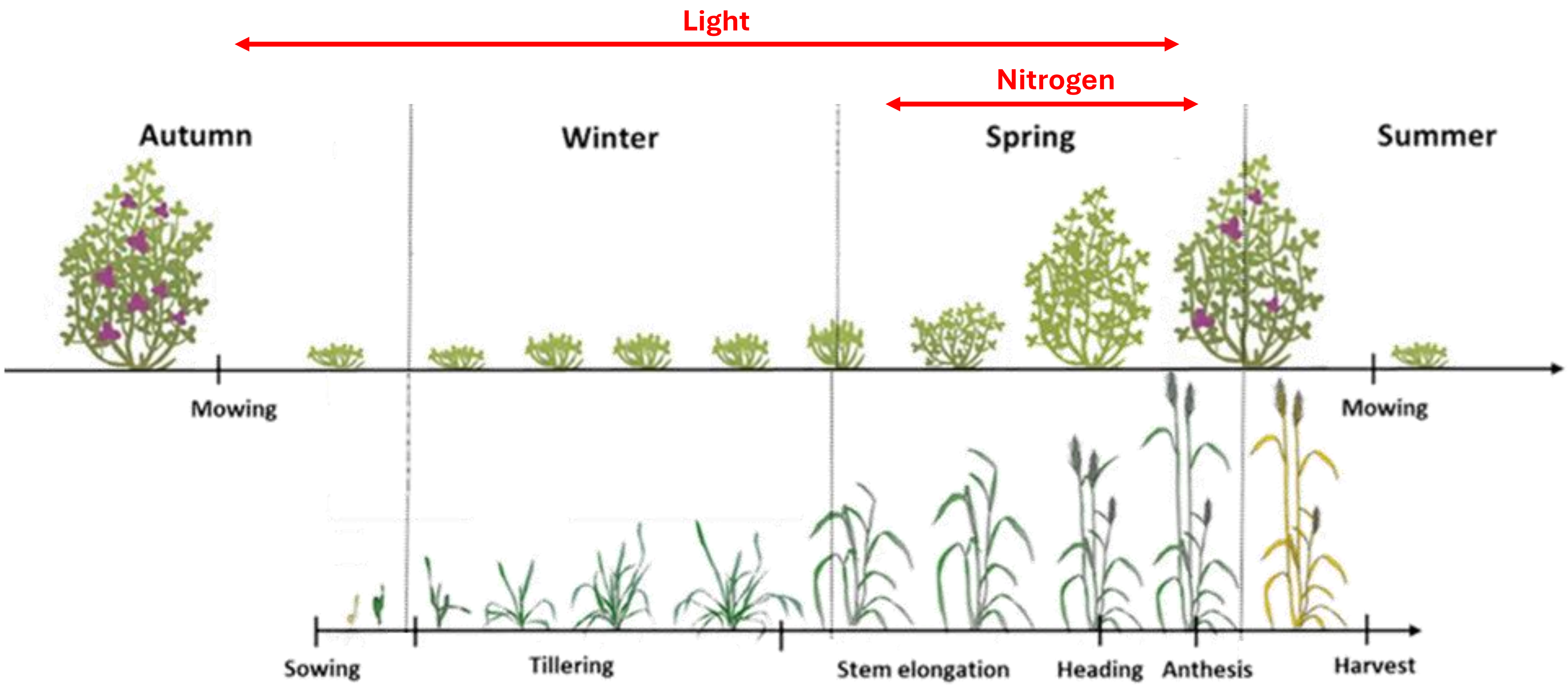
INRAE
MoBiDiv
Région Nouvelle-Aquitaine

FROM 03 › TO 06 nov. 2025

Ecosystem services of lucerne living mulch



Competition mechanisms and yield impact

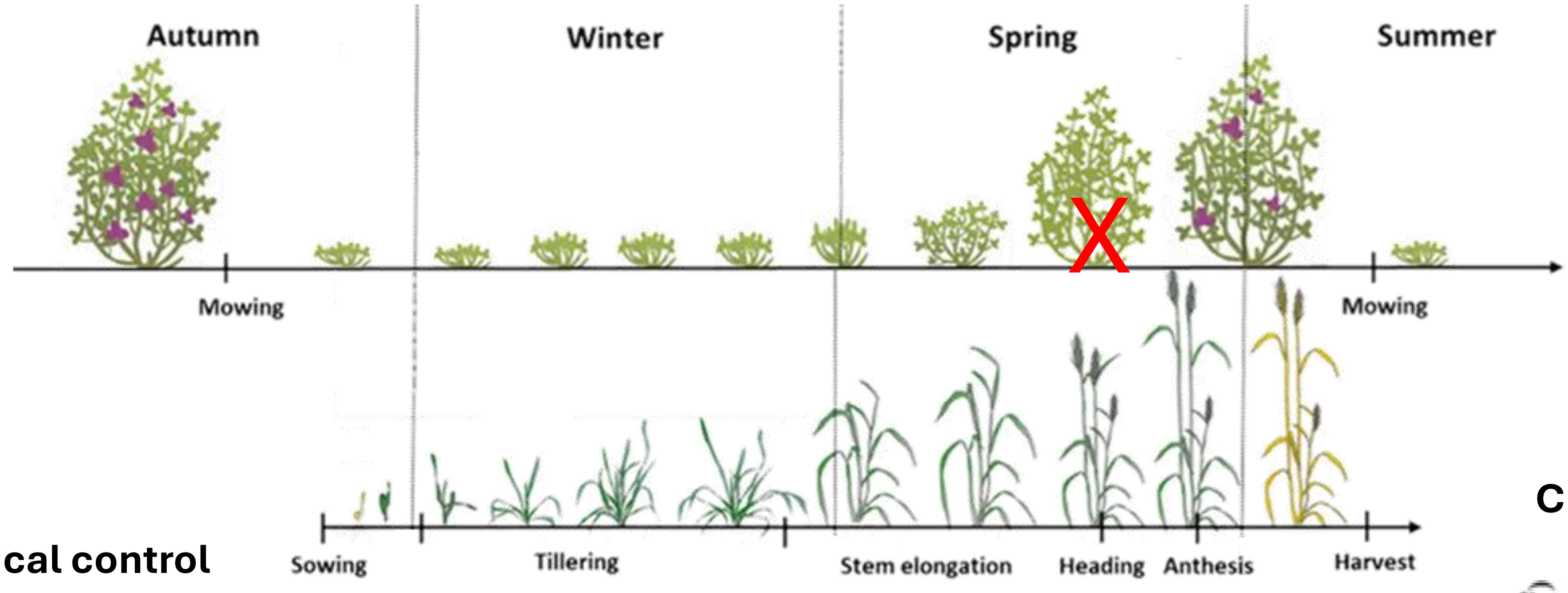


↓ Wheat tillering
↓ Biomass accumulation

↓ Grain filling

Yield losses up to 45–50 %

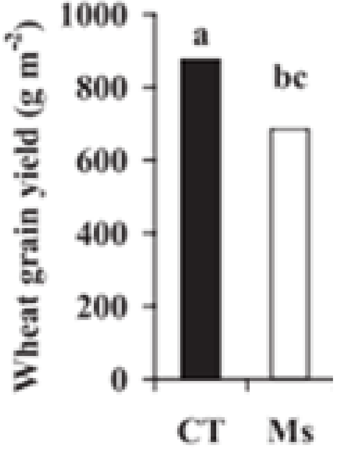
Solutions



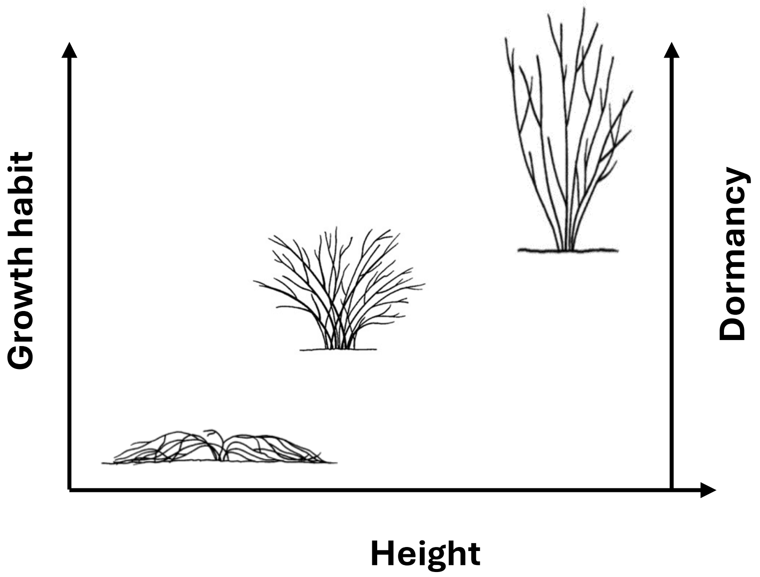
Mechanical control

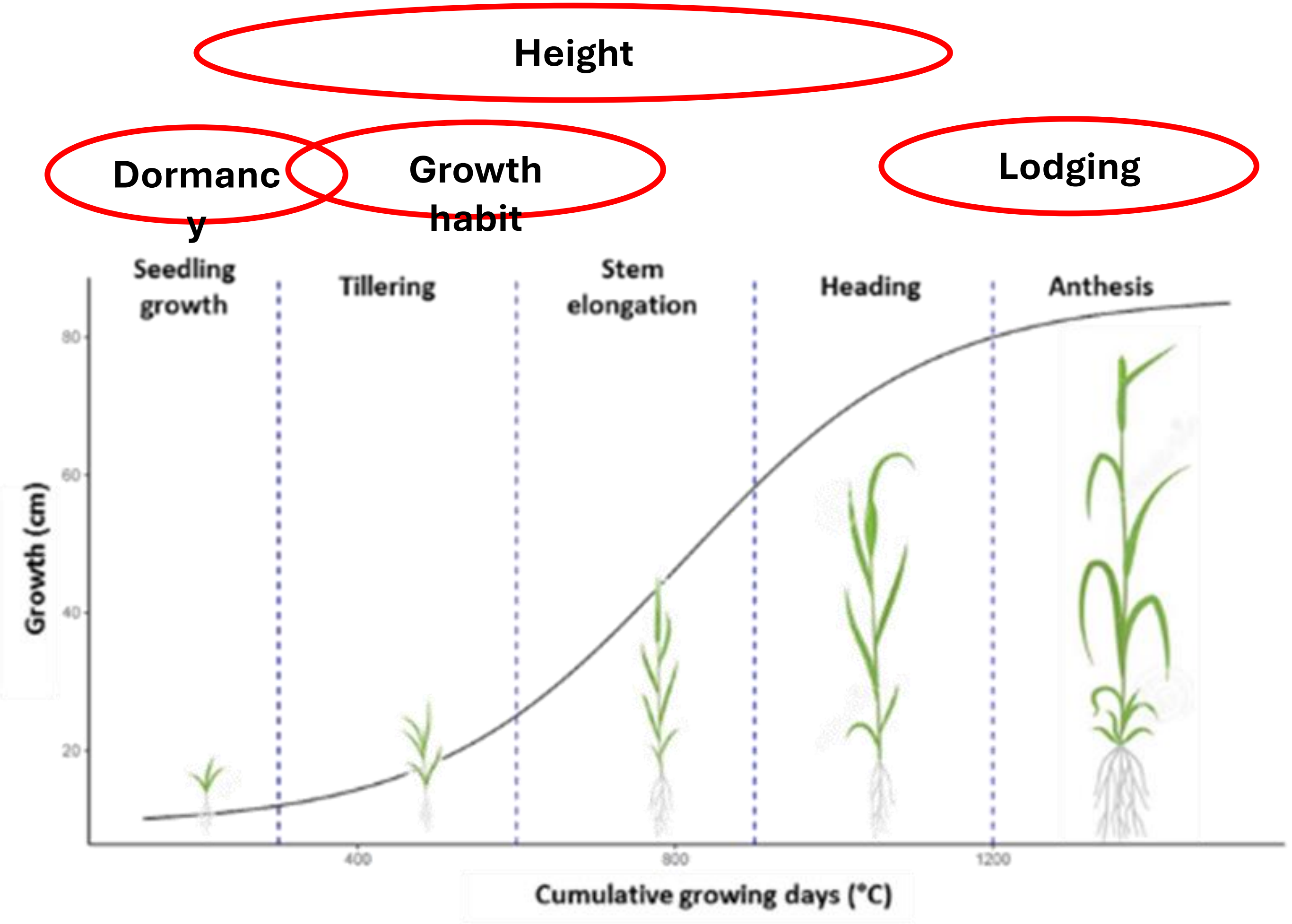
Breeding Lucerne adapted to this use

Chemical control

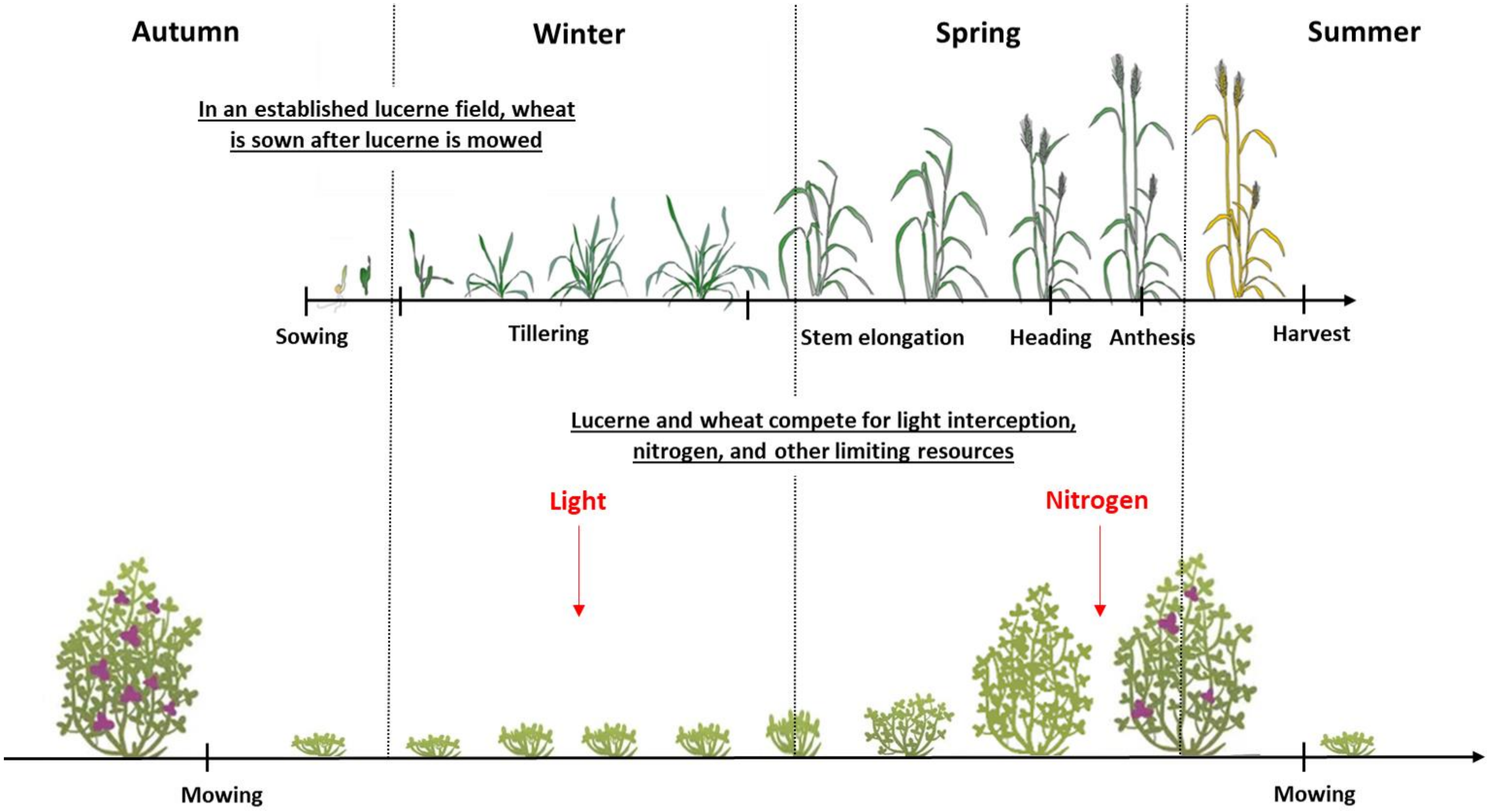


The **traits** controlling the balance between **services** and **competition** still poorly identified and quantified





Key traits for lucerne living mulch



Lucerne key traits

- Moderate dormancy
- Moderate height + Slow growth
- low lodging


Thank you for your attention