Alfalfa to get back into planetary boundaries

2025 world alfalfa congress
FRANCE REIMS-CHÂLONS

Animal feed, still a market for alfalfa tomorrow. And beyond ?

Tabel C. & Brun M.

Plenary session 1

FROM 03 › TO 06 nov. 2025

Alfalfa to get back into planetary boundaries

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Assessing the economic value of alfalfa's agronomic services in crop rotations: a methodological proposal

Clara Poëntis, Honoré Labanca, Thomas Herbin, Olivier Josselin, Didier Coulmier

LA COOPÉRATION AGRICOLE
LUZERNE DE FRANCE

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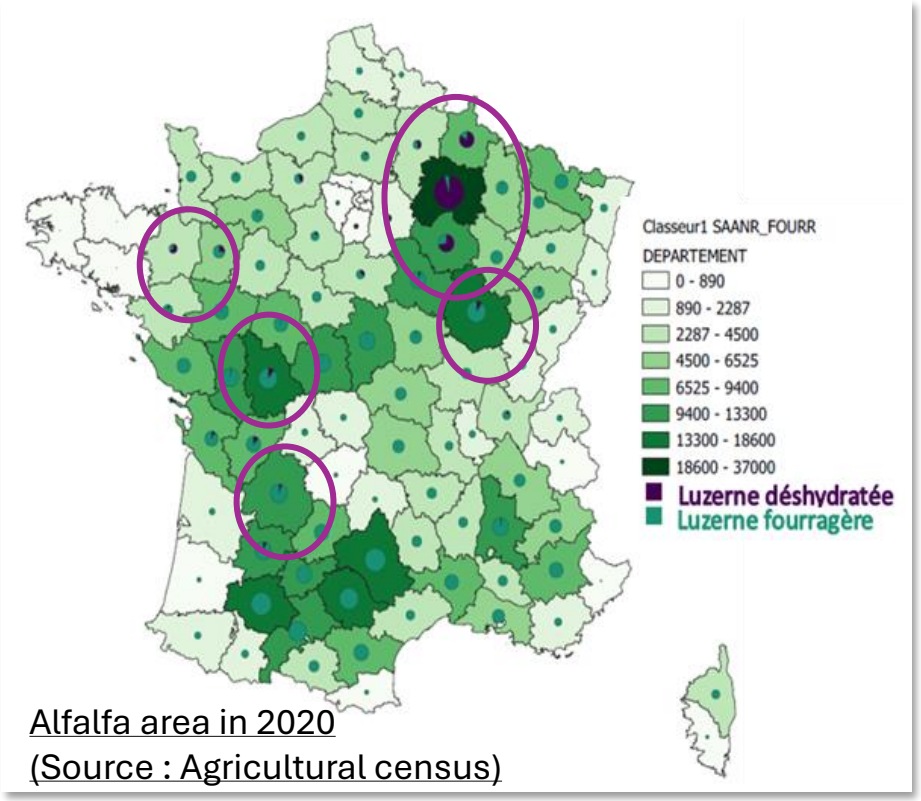
AS ENTREPRISES
Accompagnement et Stratégie

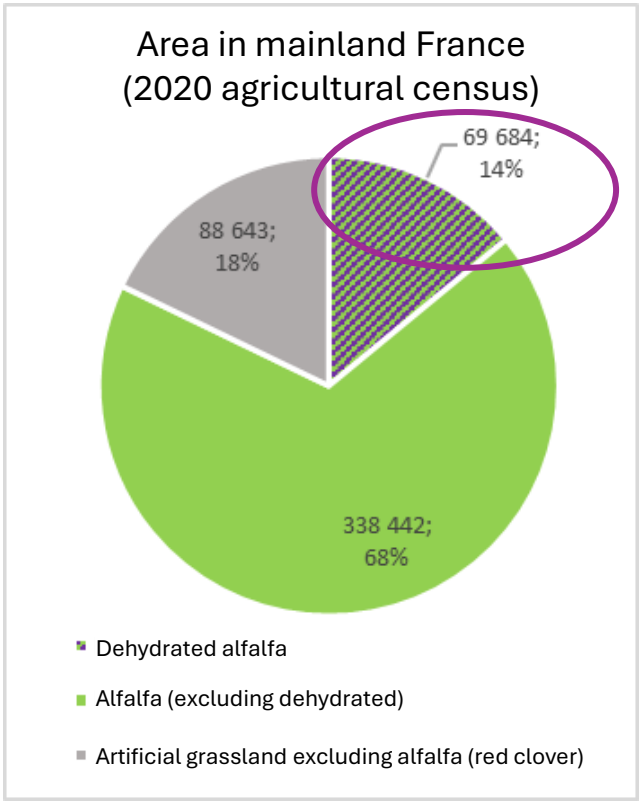
Désialis

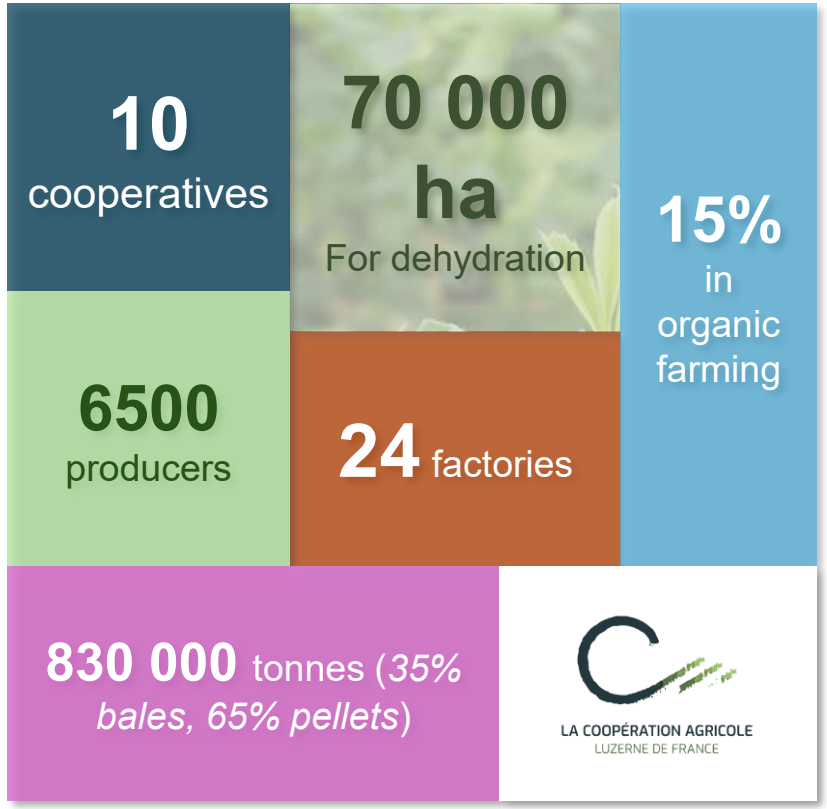
FROM 03 TO 06 nov. 2025

A culture present in different operating systems



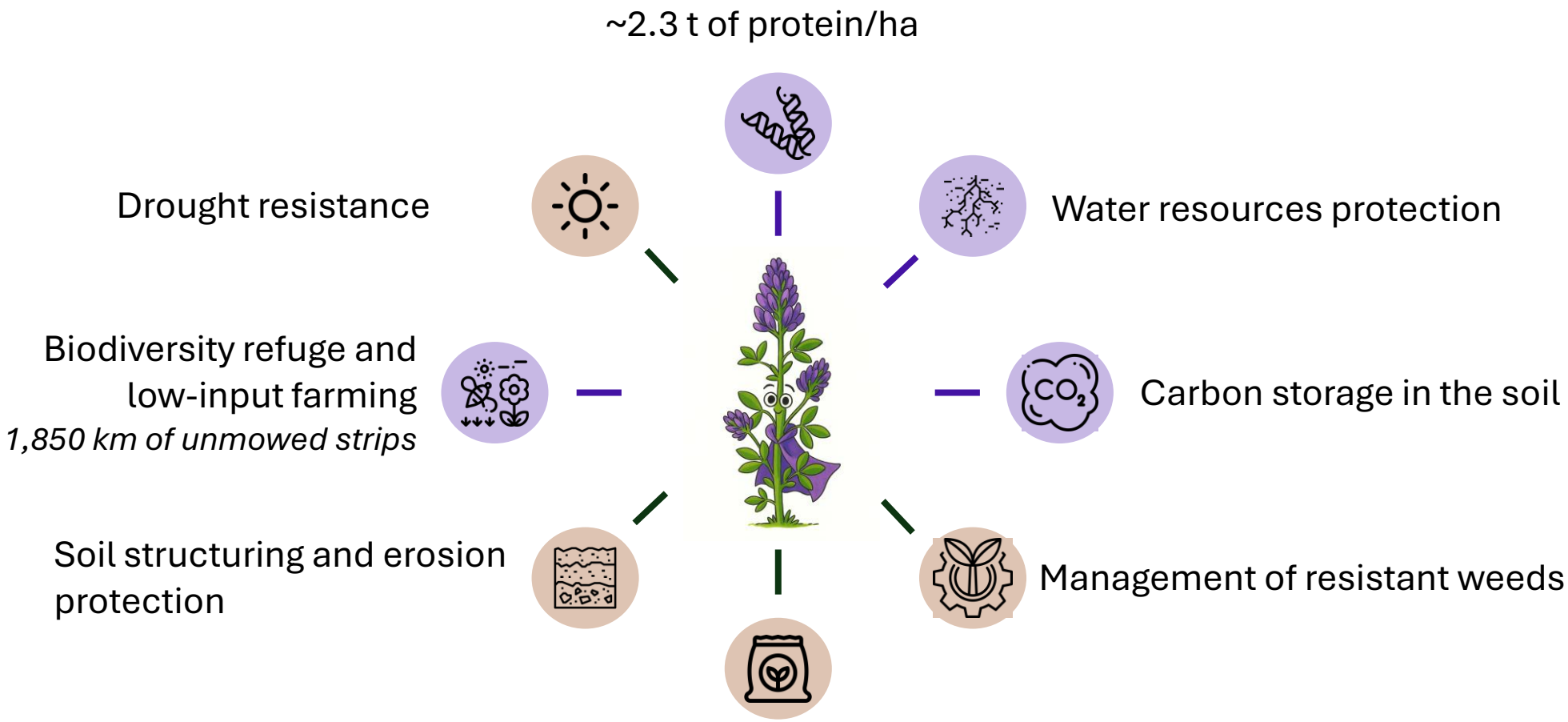
Alfalfa area in 2020
(Source : Agricultural census)





Why is a forage legume found in cereal farming systems?

A fodder legume with many advantages



Alfalfa, a competitive crop in crop rotation

YEAR	WHEAT	RAPESEED	S. BEET	ALFALFA
2021	540	14	411	248
2022	766	996	507	319
2023	-206	-583	895	466

Table – Average net margin per crop (in €/ha)
AS Entreprise data

Does the presence of alfalfa have economic impacts at the rotation level?

Multi-year monitoring based on technical and economic data

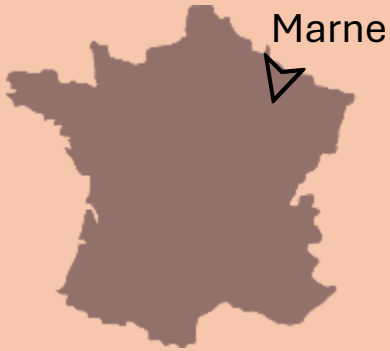
Study period: **2018-2023**

656 Farms

166 ha of average UAA

Without specialized crops >1%

LOCATION



- Crop rotation (as a percentage of UAA) and yields (in t/ha)

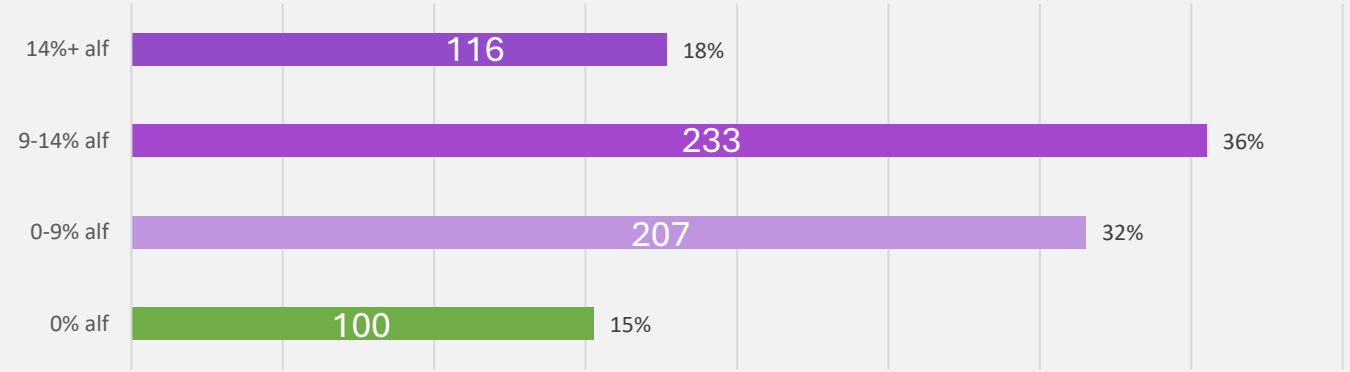
- Average operating costs (in €/ha)

- Debt ratio and annual payments (in €/ha of UAA)
- Operating income and net EBITDA before MSA (in €/ha of UAA)

Do the agronomic add-benefits of alfalfa translate into economic advantages at the farm level?

Method

Comparison of average values for groups of farms grouped according to the percentage of alfalfa in their crop rotation.



Economic data from two merged management centers

Figure - Representativeness of different groups

1. Economic results
2. Indebtedness
3. Yields/ Products
4. Expenses

Are the groups comparable to each other?

1 Similar crop rotations for each group

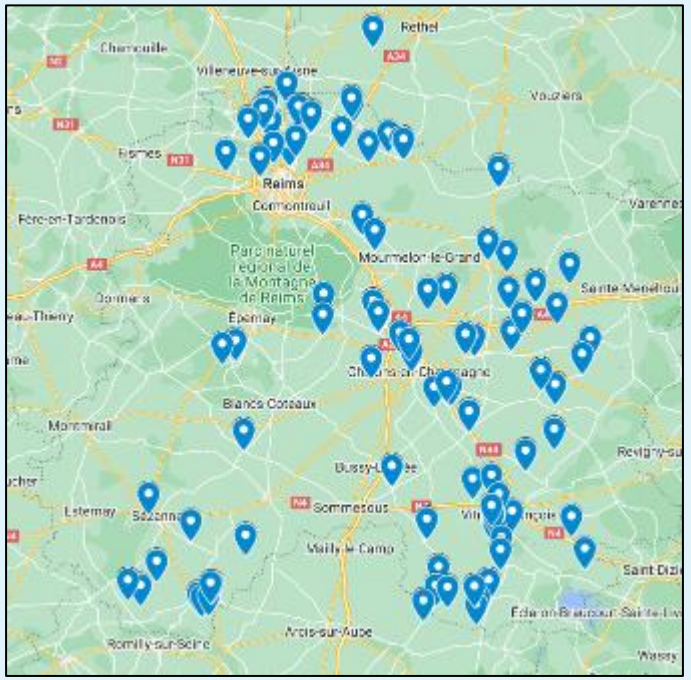
	0% ALF	0-9% ALF	9-14% ALF	+14% ALF
W. Barley	10,7	8,2	7,8	9,4
Wheat	33,6	31,5	30,4	29,3
S. Barley	17,4	16,6	15,2	12,9
TT cereals	61,6	56,3	53,4	51,5
Peas	5,3	3,7	3,9	3,9
Rapeseed	13,9	12,8	11,1	9,7
S. Beet	14,7	17,5	17,1	16,2
Alfalfa	0,0	6,4	11,3	17,2
Other	4,4	3,1	3,2	1,5

Table – Average crop rotation for each group (in %)

Straw cereals > beetroot > rapeseed > peas

No increase in beet acreage if alfalfa acreage decreases

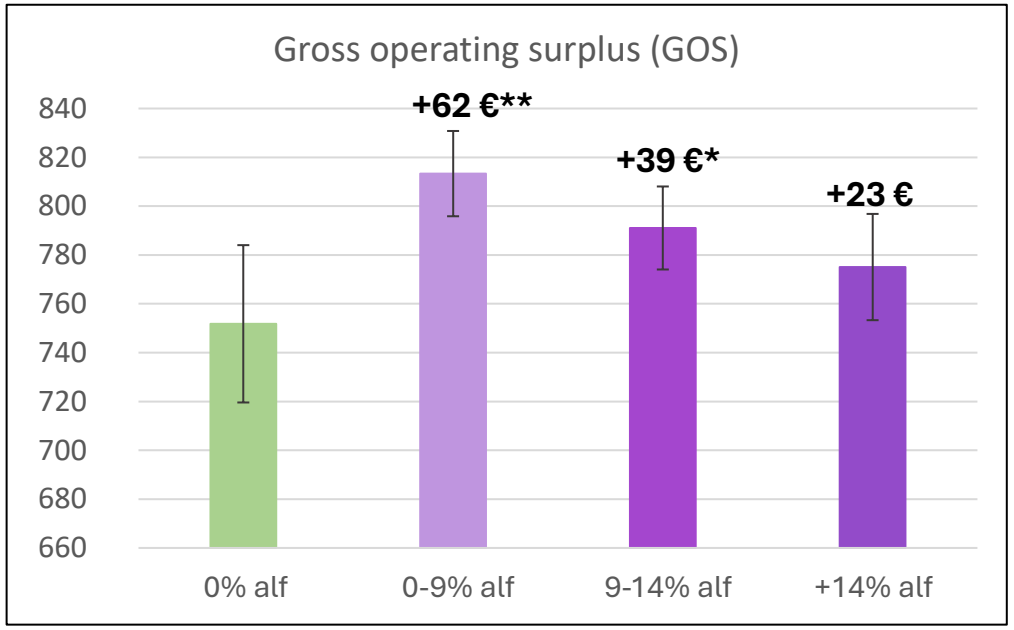
2 No predominant area

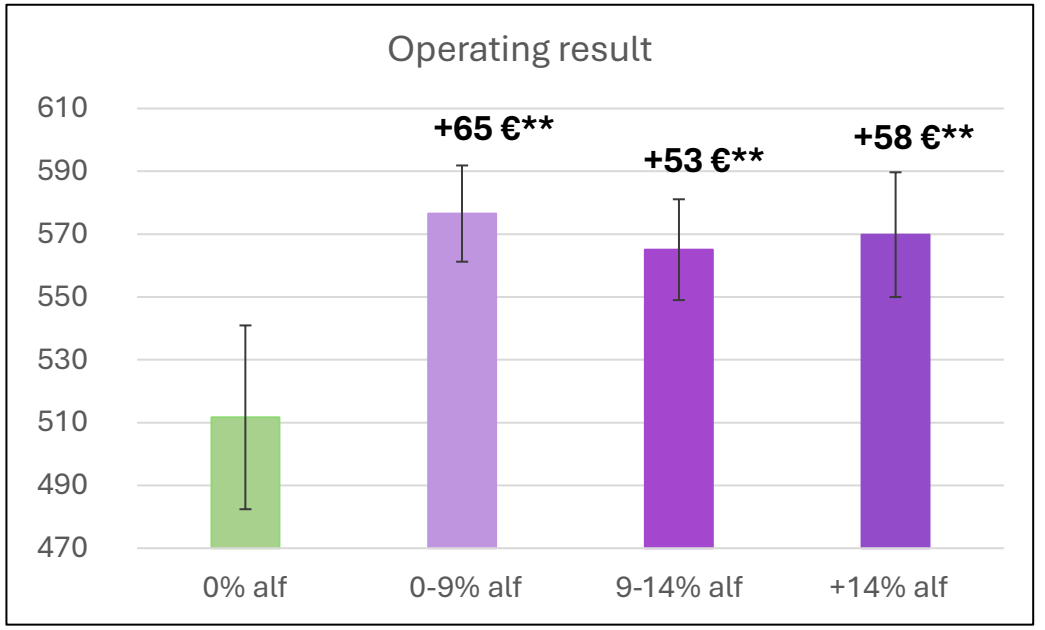


Map – Distribution of cultivation 0% alfalfa

1

Economic results maintained or even improved for alfalfa producers





Graphs – GOS and Operating Results in €/ha of UAA

2

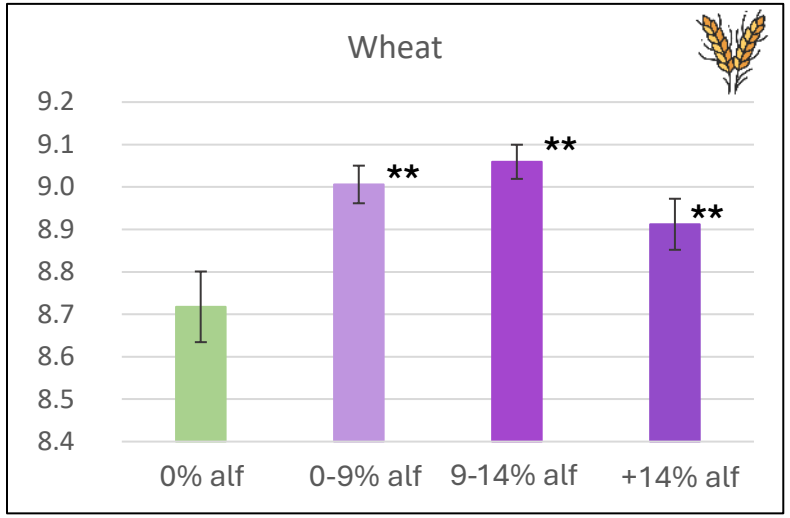
Farms with less debt

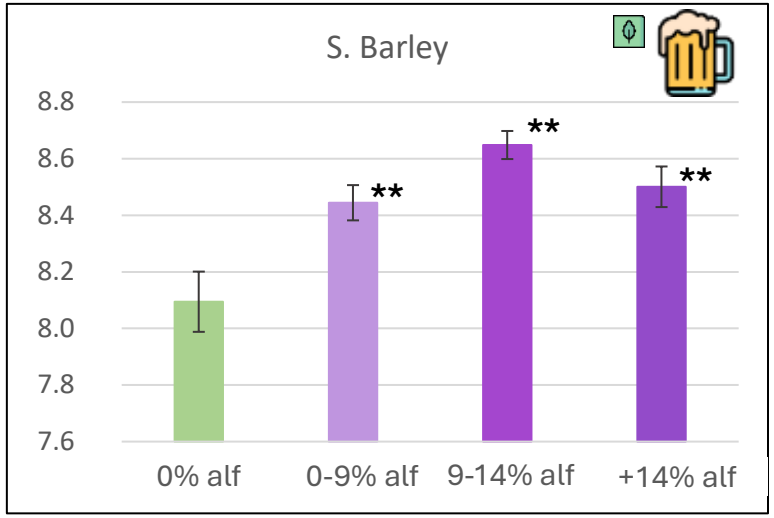
	0 % alf	0–9 % alf	9 – 14 % alf	14 % + alf
Debt ratio	0,45	0,39**	0,37**	0,36**
Annuity	229,7	224,6	212,8	208,1

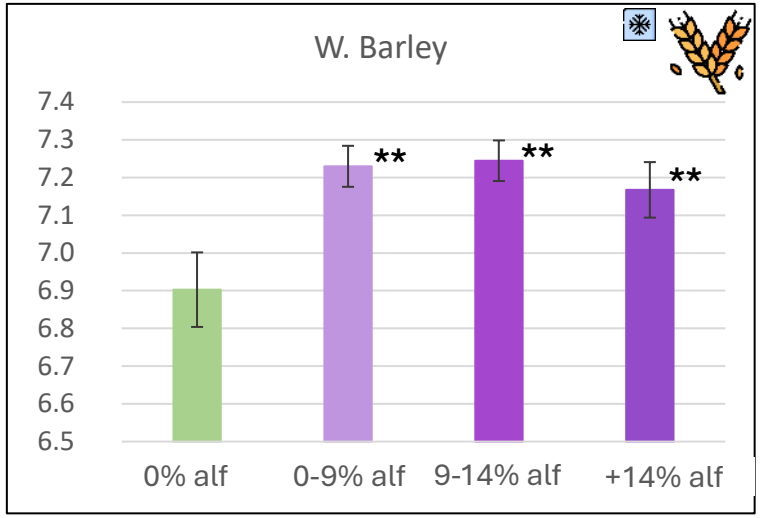
Table – Annual payment in €/ha of UAA and average debt ratio

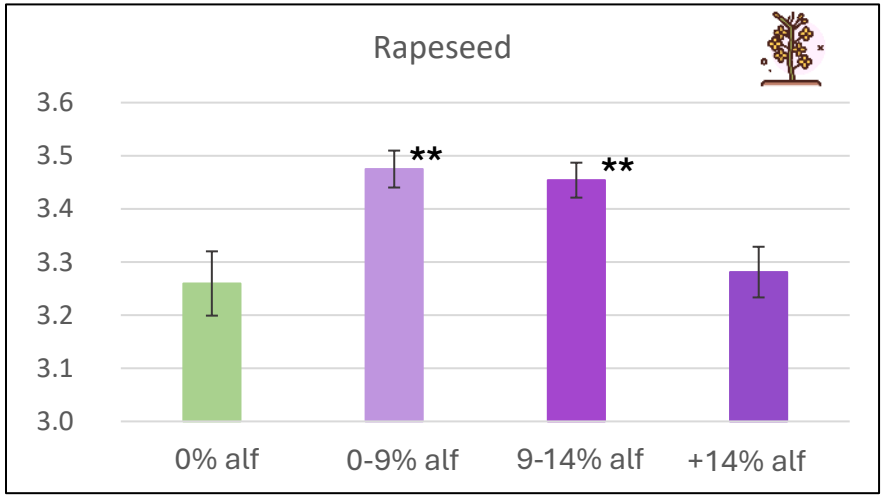
*(Comparison of averages between groups with alfalfa and groups without alfalfa: *if p-value < 0.05 and **if p-value < 0.01)*

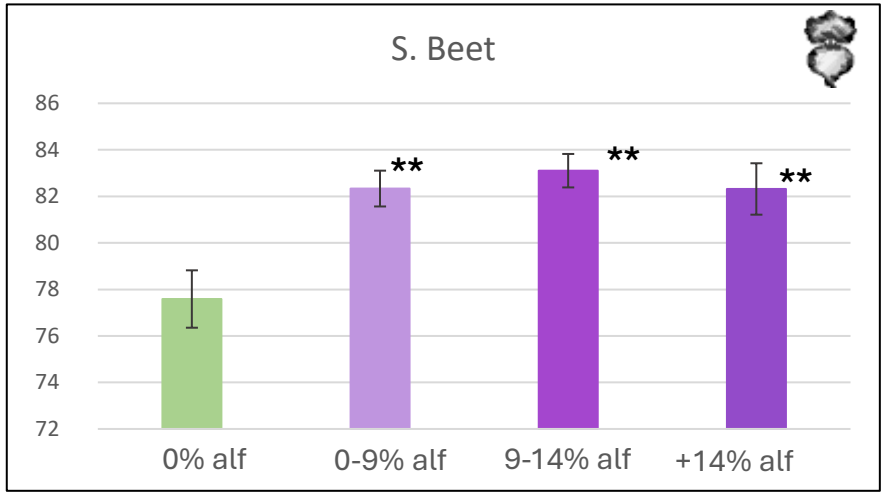
3 Farms growing alfalfa achieve higher yields.









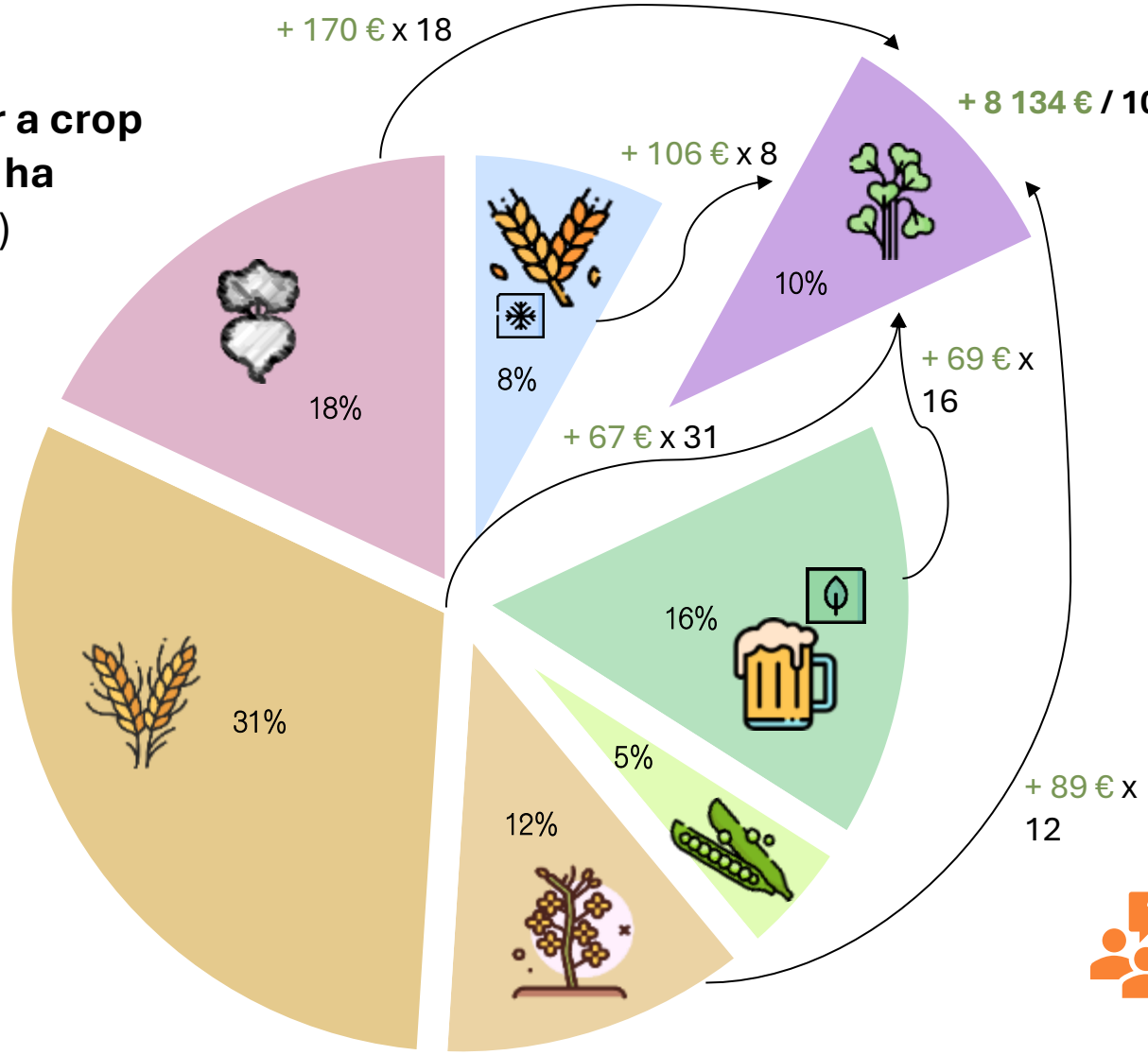


Graphs – Yield in tonnes per hectare of UAA

*(Comparison of averages between groups with alfalfa and groups without alfalfa: *if p-value < 0.05 and **if p-value < 0.01)*

3 A gain on all crops in the rotation

Calculation for a crop rotation of 100 ha
(10 ha of alfalfa)



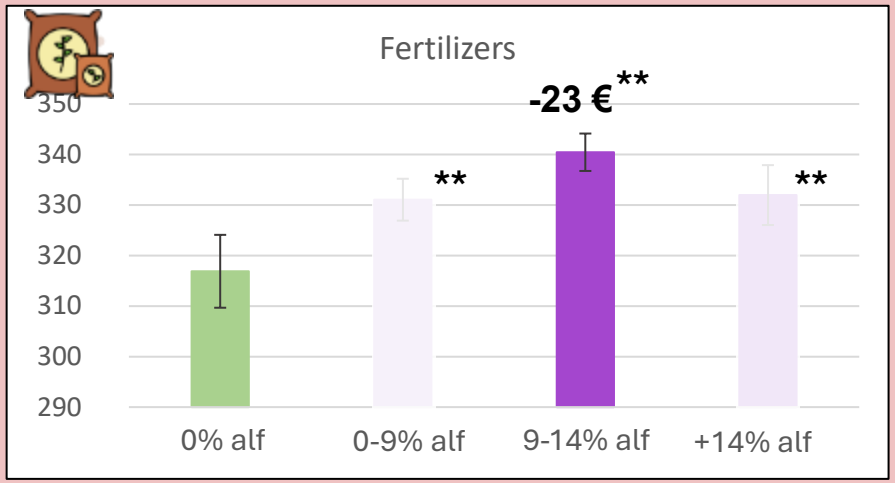
813 €/ha *(of alfalfa)*

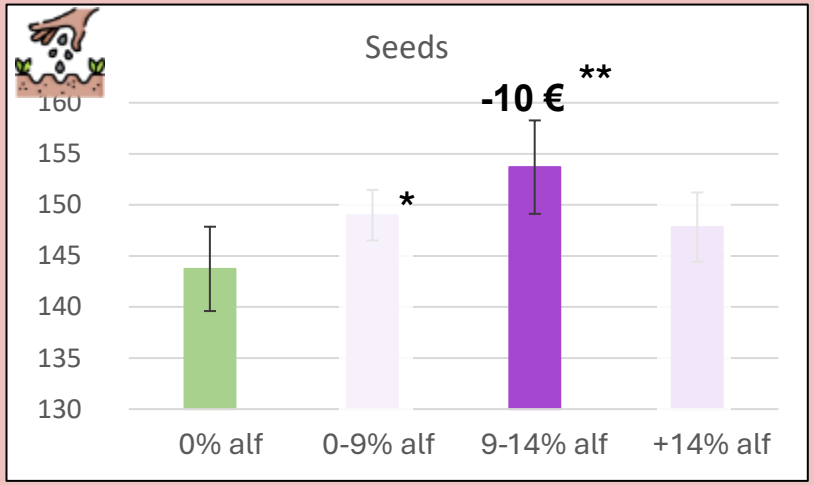
- Related to all crops in the rotation
- Observed from the very first hectares of alfalfa

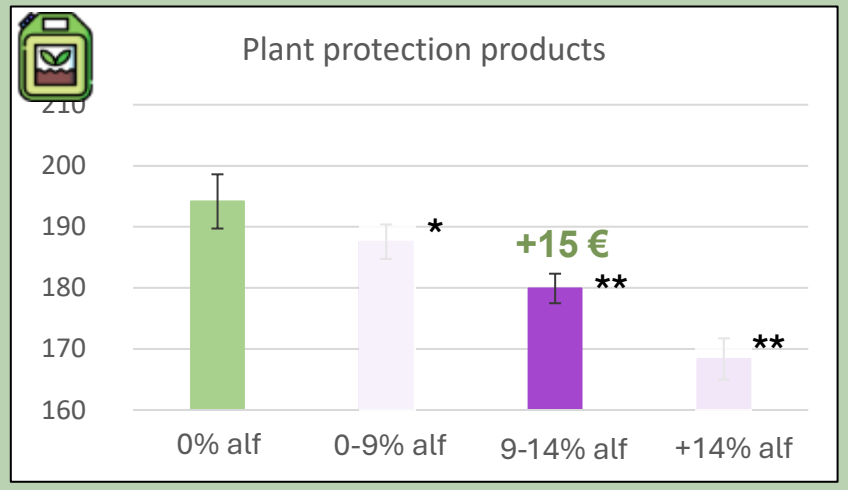
How are operating expenses changing?

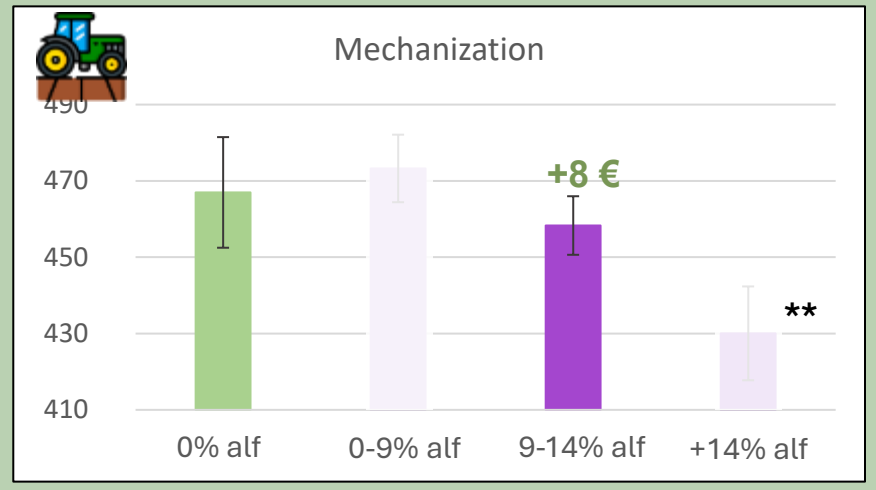
Changes in expenses to be considered

Graphs
Comparison of different expense items(in €/ha of UAA)







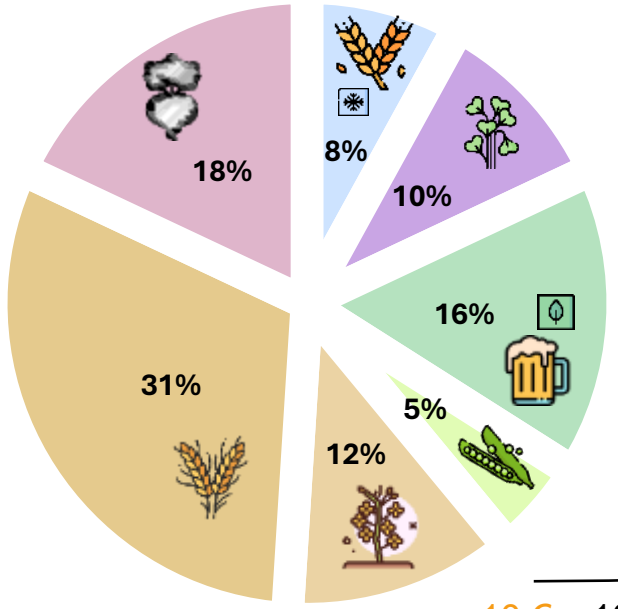


-10 €/ha *(of UAA)*

*(Comparison of averages between groups with alfalfa and groups without alfalfa: *if p-value < 0.05 and **if p-value < 0.01)*

An “extra” margin to add to alfalfa

Calculation for a crop rotation of 100 ha
(10 ha of alfalfa)



813 €/ha *(of alfalfa)*

-103 €/ha *(of alfalfa)*

-10 € x 100

-1 028 € / 10

“extra” margin

=

711 €/ha of alfalfa

Alfalfa: Agronomic Superpowers Finally Monetized!

1	Maintaining GOS and improving operating result	**813 €/ha** *(of alfalfa)*
2	Optimized mechanization costs = lower debt	**-103 €/ha** *(of alfalfa)*
3	Strong yield gains across <u>all</u> crops	"Extra" margin = **711 €/ha of alfalfa**
4	Insignificant variation in expenses	

"Alfalfa: a key driver of performance and resilience for farms in chalky champagne regions"