

# INFLUENCE OF FRENCH DAIRY FEEDING SYSTEMS ON COW MILK FATTY ACID COMPOSITION

## AIM OF THE STUDY

Assess the impact of diet composition on the fatty (FA) acid composition of dairy cow milk in some French feeding systems

## MATERIALS AND METHOD

17 farms located in lowlands (dominance of grass and/or maize silage) and montains

5 samples over a year (May, July, September, January and February)

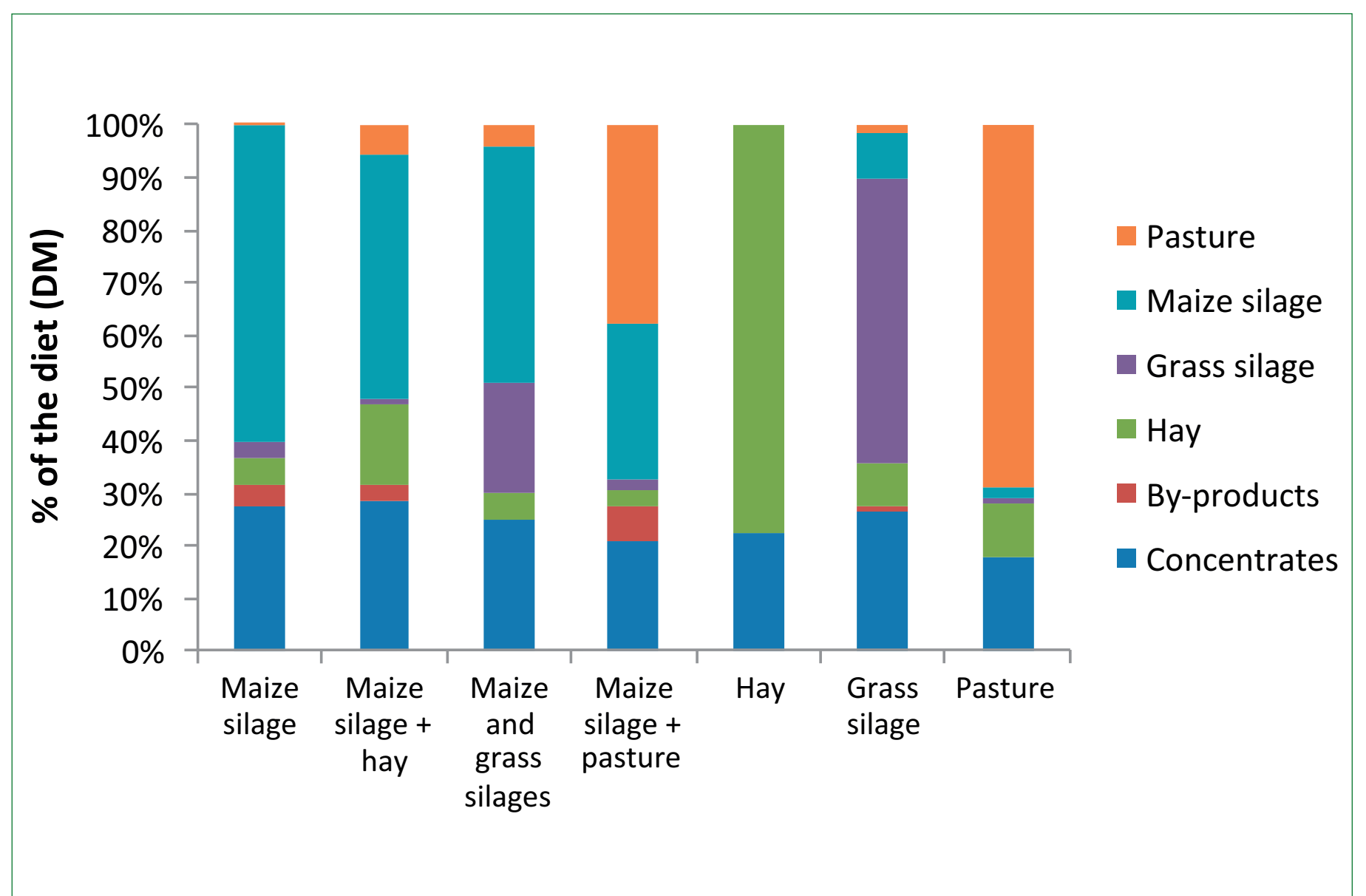
Gas-chromatography analysis to determine 58 fatty acids

Principal component analysis to identify different diets and variance analysis to characterize the fatty acid compositions

## RESULTS

7 different diets identified.

- Milk produced from grass-based diets, and especially from pasture-based diets (P-Diet), contains more health-promoting FA than milk from maize silage-based diets (MS-Diet).
- Hay-based diets produce milk with a high percentage of SFA but a low omega-6/omega-3 ration.



- Variations in fatty acids composition over a year is due to the succession of diets during spring, summer, autumn and winter in different regions.

	MS-Diet	MSH-Diet	MSGs-Diet	MSP-Diet	H-Diet	GS-Diet	P-Diet
SFA (% of total FA)	72,3	69,7	69,1	67,3	71,6	70,8	64,2
MUFA (% of total FA)	23,9	26,5	26,7	28,4	24,0	25,1	29,9
PUFA (% of total FA)	3,0	3,0	3,3	3,4	3,3	3,1	4,6
Omega6/Omega3	7,6	6,7	4,1	4,3	2,4	3,4	2,1

## CONCLUSION

This study shows a large diversity of milk fatty acid composition in France. It also underlines fast, efficient and reversible diet solutions to improve milk regarding health-promoting fatty acids.

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