

# Grassland management in large dairy farms

C. Gaillard, S. Mugnier, A. Destrez, A. Gérard, S. Ingrand



**Session 31:** LFS innovations for local/rural development (Abstract 16753)

# CONTEXT

A general increase of dairy farms size

automation

labour

Dairy herds >70 cows, (*Béguin and Roussel, 2006*): + 20 % per year



Much more conserved fodders in diets, especially maize silage

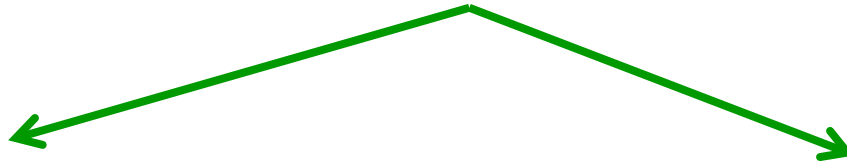
Less grass in diets



# CONTEXT

But some farmers

↪ have to maintain a grass- based system  
because of specific situations



Specification's PDO



Limiting soil and climate  
conditions

↪ or choose to maintain a grass- based system  
in order to keep a food self-sufficiency

# Question



How to keep a grass-based dairy system in large dairy herds ?

## Hypothesis

Specific practices are needed for grassland management in large grass-based dairy farms

# Method: sample

Case of PDO's COMTE cheese

In « Franche Comté » area



# Method: sample

## ➤ Some requirements to produce milk for « Comté » process

- Montbeliarde breed



- Main part of grass in cow feeding

- Grass = more than 50 % of daily cow feeding during grazing season
- Fermented forages forbidden



- Limitation of concentrates in diet (less than 1800 kg per cow per year)



# Method: data collection

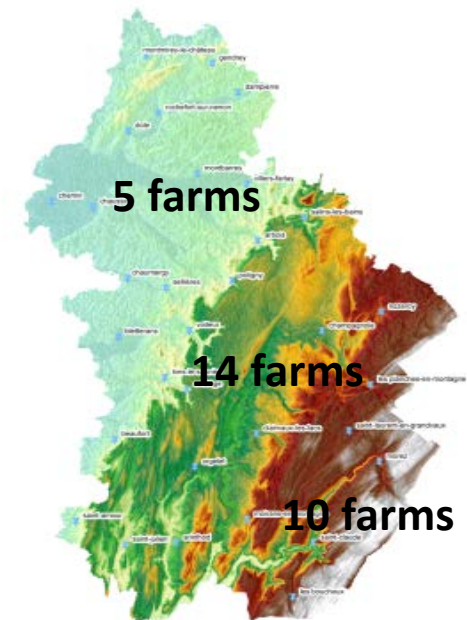
## ➤ Continuous surveys in large dairy farms

### ➔ Main points

- Trajectories of farms
- Land use
- Characteristics of farms area
- Paddock management (grazing, hay)
- Forage and grazing schedule for a whole year

➔ **29 farms**

 Low-land  
 Middle land  
 Up-land



# Method: data analysis

- **Pasture management**

Reconstitution of forage supply process and cow feeding over the grazing season

- Turnout to grass, grazing system
- Stocking rate
- Grazing management: adaptation of stocking pressure in summer and autumn
- Green grass feeding



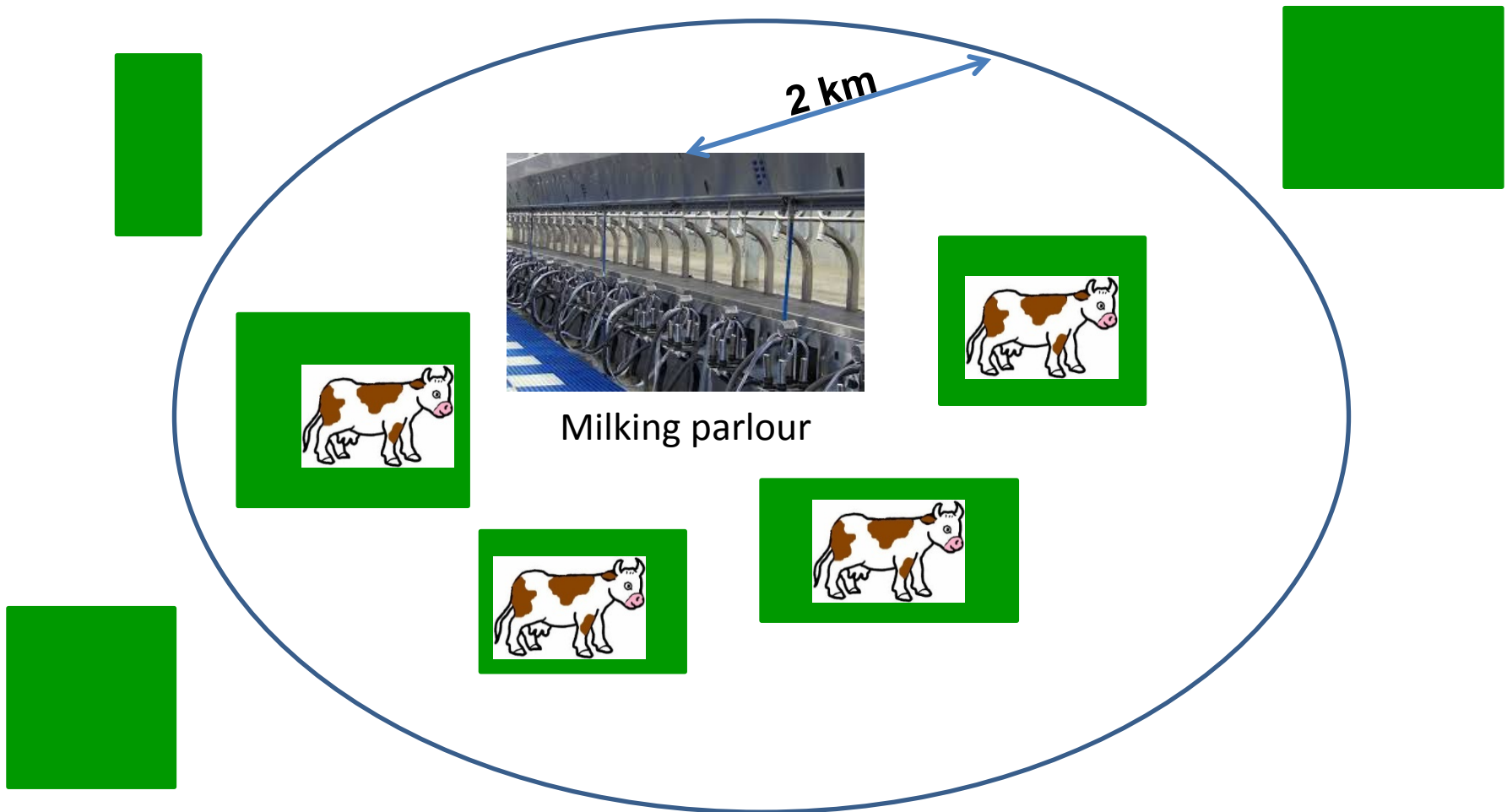
**Clustering**



# Method: data analysis

- **Farm area characterization**

Dairy cows do not graze beyond 2 km from milking parlour.



# Method: data analysis

- **Farm area characterization**

- Available area per cow located less than 2 km from milking parlour
- Accessibility to grazed paddocks less than 2 km
- Agronomic value based on type of soil and pasture yield



**Clustering**

# Results

## ➤ Farms characteristics (n = 29)

	ha	workers	MFA/UAA (%)	Milk (x 1000 l)	cows
Min - Max	100 - 340	2 - 5	60 - 100	310 – 800	69 - 122
Average	220	3	90	530	80

UAA= Utilized Agricultural Area

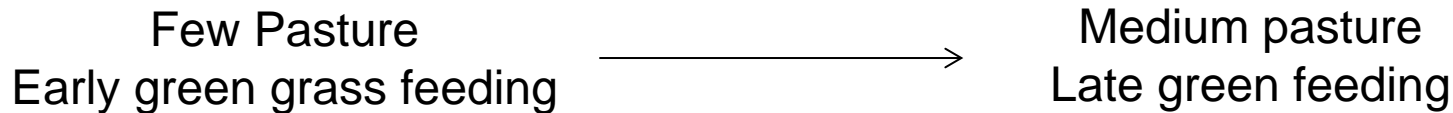
MFA= Main Forage Area

# Results

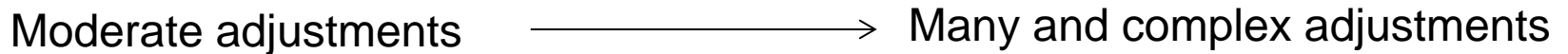
## ➤ Characterization of the grassland management

### Two factors

#### Factor 1: use of pasture and other grassland resources



#### Factor 2: number of adjustments in grassland management



# Results

## Three groups of farms

**G1**  
**Simple**  
**Management**

**G2**  
**Intermediate**  
**management**

**G3**  
**Complex**  
**management**

**Use of pasture and  
other grassland  
resources**

Major grazing in spring  
Early complement  
with green grass  
feeding

Grazing in  
spring and  
beginning  
summer  
Late green  
feeding

Grazing on the  
whole season  
No green feeding

**Adjustments of  
grassland management**

Few

Moderate

Many

**-adding paddocks**

0

=

++

**-animal destocking**

-

+

=

# Results

## ➤ Characteristics of farm area

Group of farms	G1	G2	G3	G4
Available area for dairy cow	+	+	-	-
Land subdivision	+	-	+	-
Pasture herbage potential	+	+	+	=
<b>Farm area</b> (gradient of quality)	<b>Very Favourable</b>	<b>Favourable</b>	<b>Moderate</b>	<b>Unfavourable</b>
Number of farms	7	8	7	7

# Results/discussion

## ➤ Grassland managements X farm area

Number of farms		Strategies of grassland management		
		Simple	Intermediate	Complex
Farm area	Very favourable	2	0	5
	Favourable	2	6	0
	Moderate	2	2	3
	Unfavourable	5	1	1

Pearson's chi-square test exact :  $P < 0,01$



**Significant links between some grazing strategies and farm area**

# Results/discussion

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# Conclusion

Large dairy systems in PDO can be based on grass feeding.  
Two conditions to maintain grazing:

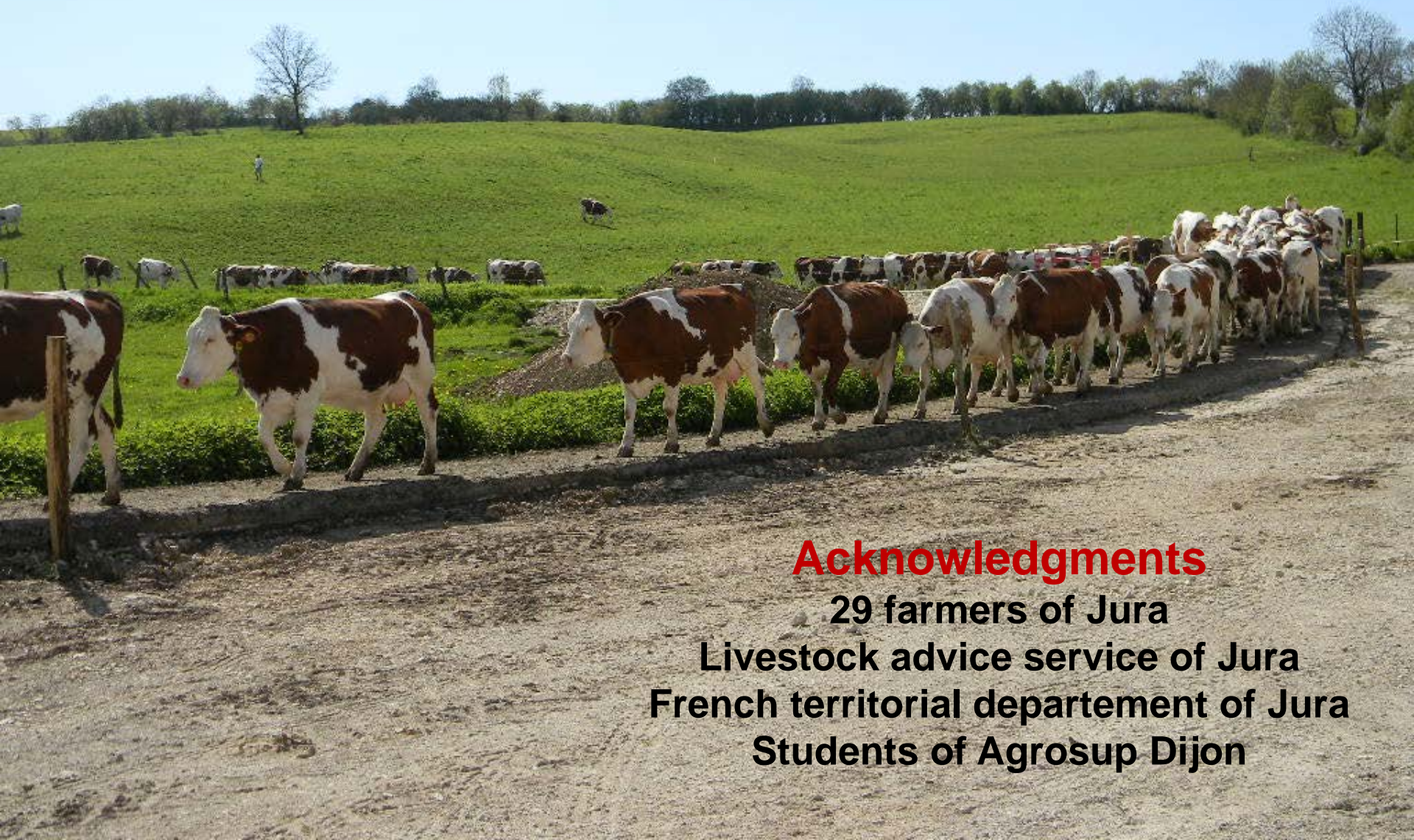


- technical know-how for farmers to maximize the use of grass
- adapted farm area: enough area and not too scattered parcels

It depends on farm trajectories and farmer motivations.



# Thank you for your attention



## **Acknowledgments**

**29 farmers of Jura**

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