



## MILK PERFORMANCE OF TWO DAIRY COW GENOTYPES MANAGED AT TWO LEVELS OF SUPPLEMENTATION AT PASTURE

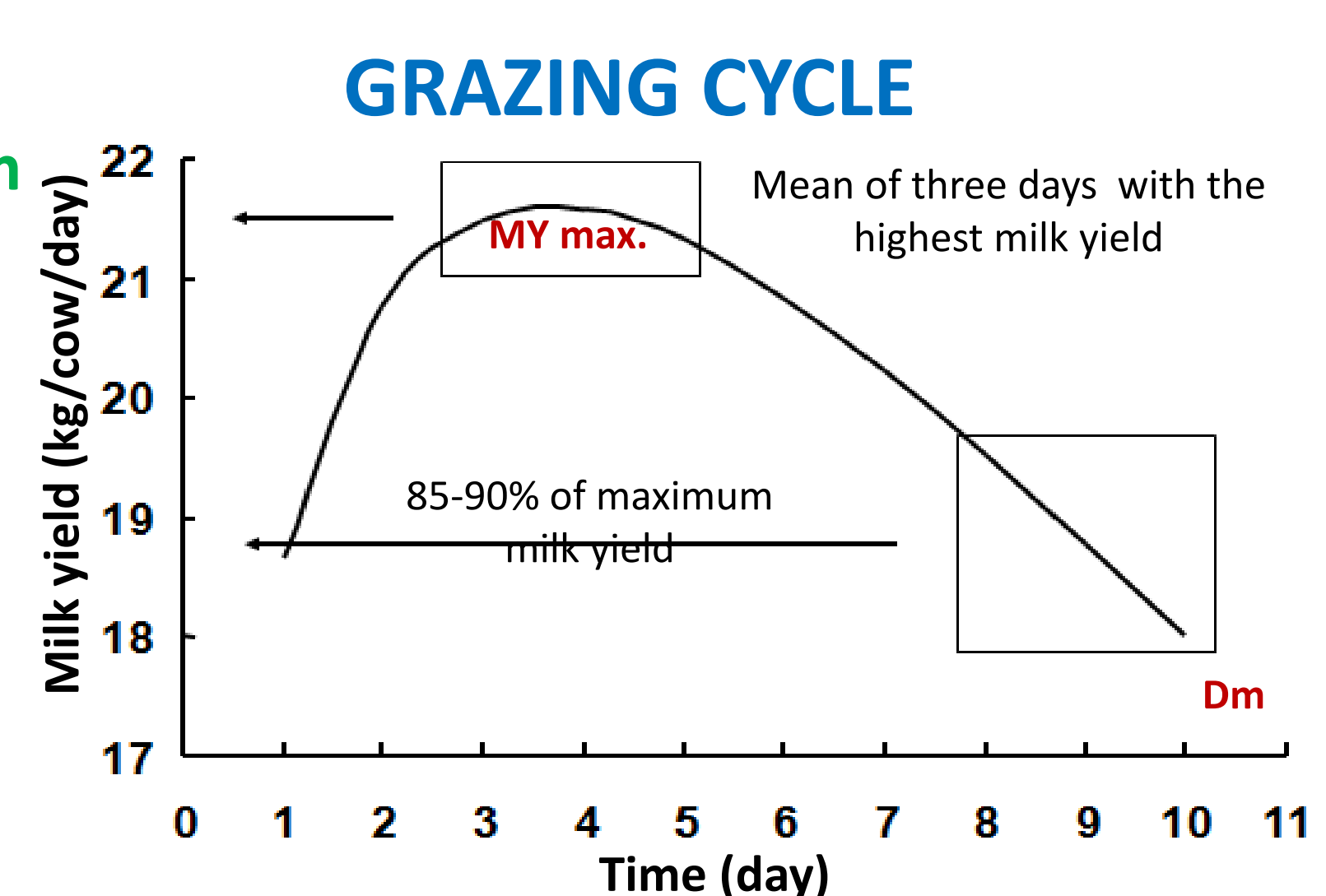
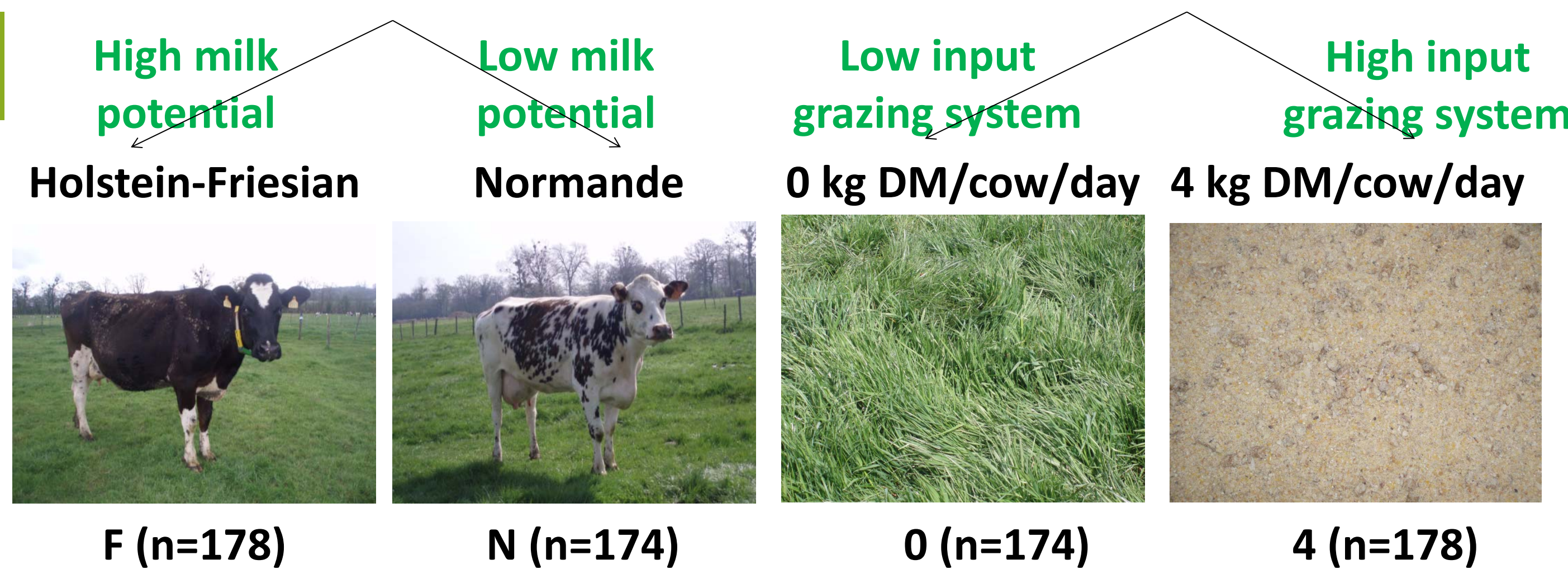
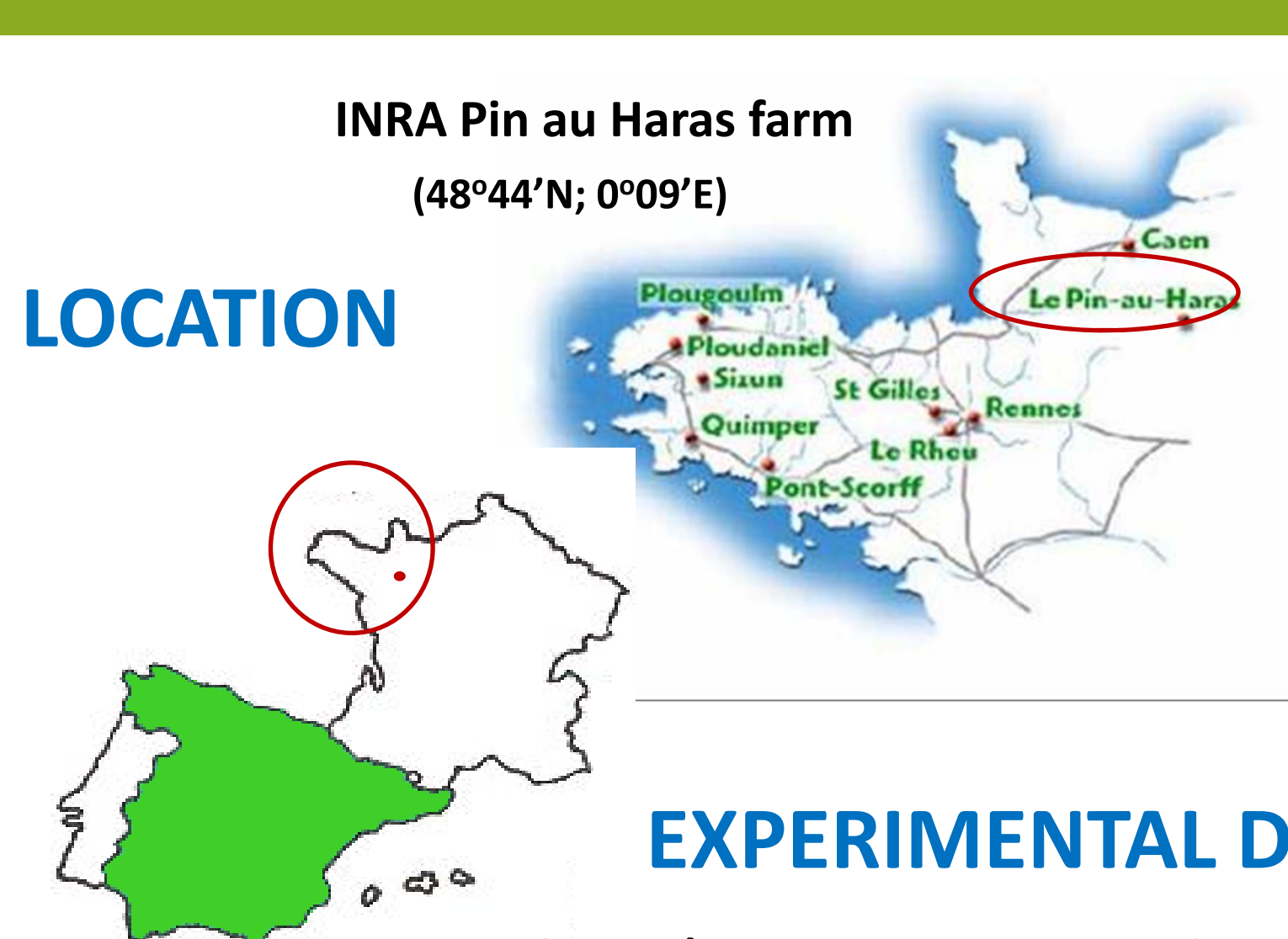
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**INTRODUCTION** A variant of the strip grazing system, called as **simplified rotational grazing system**, was applied at INRA "Pin au Haras" farm by using long residence time grazing paddocks. The **average residence time** in each grazing cycle is of **10 days** following a grass regrowth period of 20 days. A **maximum of milk yield (MY max.)** is reached at **4-day** followed by a **drop of milk (Dm)** at **10-day**.

**OBJECTIVE** To determine the **MY max.** and the **Dm in each grazing cycle**, during the whole grazing season of 5-years (2001-05) at "Pin au Haras" farm in Normandy (France) using **two dairy cow genotypes** and **two levels of supplementation (concentrate) at pasture**.

### MATERIAL AND METHODS



**EXPERIMENTAL DESIGN** A **randomized block design with a 2x2 factorial** arrangement of **four treatments (F0, F4, N0 and N4)**. Cows grazed on permanent or sown pastures of *Lolium perenne* L. either pure or associated with *Trifolium repens* L.

### RESULTS AND DISCUSSION

#### GRASS AND CONCENTRATE NUTRITIVE VALUE

Feeding strategies <sup>1</sup>	LOW INPUT GRAZING SYSTEM		HIGH INPUT GRAZING SYSTEM	
	Grass	Grass	Grass	Concentrate <sup>2</sup>
DM (g/kg fresh weight)	23.0 ± 7.30	22.8 ± 7.20	88.4 ± 0.50	
OM (g/kg DM)	891 ± 27.0	893 ± 24.7	950 ± 2.5	
CP (g/kg DM)	183 ± 33.3	183 ± 32.0	159 ± 7.4	
NDF (g/kg DM)	522 ± 727.2	524 ± 29.0	227 ± 8.5	
ADF (g/kg DM)	265 ± 22.8	267 ± 24.3	82 ± 9.3	
OMD (%)	73.2 ± 6.10	72.2 ± 6.70		
UFL (g/kg DM)	0.88 ± 0.07	0.87 ± 0.07	1.08 ± 0.01	
PDIE (g/kg DM)	94 ± 8.0	94 ± 8.0	134 ± 5.0	
PDIN (g/kg DM)	115 ± 21.0	115 ± 20.0	115 ± 6.0	

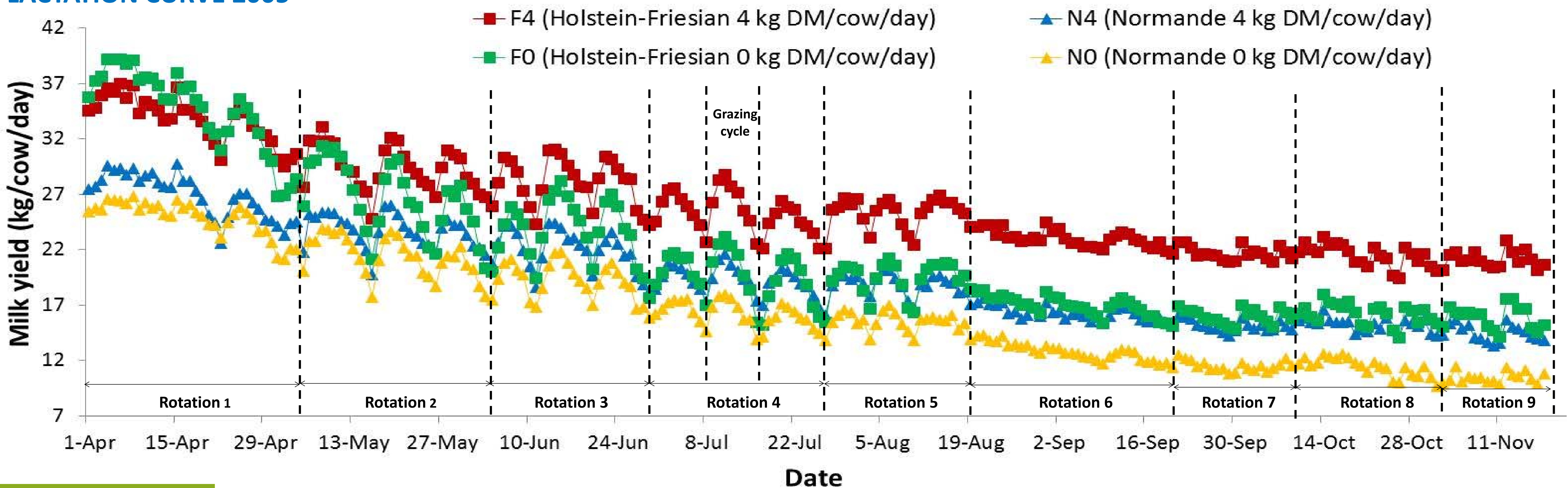
<sup>1</sup>DM= Dry Matter; OM= Organic Matter; CP= Crude Protein; NDF= Neutral Detergent Fibre; ADF= Acid Detergent Fibre; OMD= Organic Matter Digestibility; UFL= Energy Feed Unit equivalent to 1.700 kcal of net energy for lactation. PDIE and PDIN= Protein Digestible in the Intestine according to energy (E) or nitrogen (N) supply. <sup>2</sup>Concentrate composition (% DM)= wheat 20.8; maize 20.7; barley 20.8; beet pulp 21.4; protected soybean meal 12.0; molasses 0.9; soya bean oil 2.3; salt 1.1.

#### ANIMAL PERFORMANCE AND MILK RESPONSE

Feeding strategies <sup>1</sup>	LOW INPUT GRAZING SYSTEM	HIGH INPUT GRAZING SYSTEM	SEM <sup>2</sup>	Significance <sup>3</sup>		
	GRAZING SYSTEM	GRAZING SYSTEM		Feeding	Genotype	Interaction
Total MY (kg/cow/lactation)	6,238 <sup>a</sup>	7,567 <sup>b</sup>	735.8	***	***	NS
Holstein-Friesian	6,835 <sup>a</sup>	8,347 <sup>b</sup>				
Normande	5,641 <sup>a</sup>	6,786 <sup>b</sup>				
BW at the end of grazing (kg)	652 <sup>a</sup>	702 <sup>b</sup>	32.1	***	***	NS
Holstein-Friesian	640 <sup>a</sup>	678 <sup>b</sup>				
Normande	663 <sup>a</sup>	726 <sup>b</sup>				
BCS at the end of grazing	2.15 <sup>a</sup>	2.85 <sup>b</sup>	0.41	***	***	NS
Holstein-Friesian	1.85 <sup>a</sup>	2.50 <sup>b</sup>				
Normande	2.45 <sup>a</sup>	3.20 <sup>b</sup>				
MY max. (kg) at 4-day	21.2 <sup>a</sup>	24.9 <sup>b</sup>	0.33	***	***	NS
Holstein-Friesian	22.8 <sup>a</sup>	27.3 <sup>b</sup>				
Normande	19.5 <sup>a</sup>	22.6 <sup>b</sup>				
Dm (kg) at 10-day	-6.1 <sup>a</sup>	-5.3 <sup>b</sup>	0.13	***	***	NS
Holstein-Friesian	-6.9 <sup>a</sup>	-6.0 <sup>b</sup>				
Normande	-5.3 <sup>a</sup>	-4.6 <sup>b</sup>				

<sup>1</sup>MY= Milk Yield; BW= Body Weight; BCS= Body Condition Score. <sup>2</sup>SEM= Standard Error of the Mean. <sup>3</sup>Means within a row with different superscripts differ significantly (P<0.05). NS= Not significant; \*\*\*, P<0.001; \*\*, P<0.01; \*, P<0.05.

#### LACTATION CURVE 2005



**CONCLUSIONS** Animal performance and milk response was **highly affected by dairy cow genotype** and **level of supplementation (concentrate) at pasture**. **Good control of Dm in each grazing cycle** was **essential to keep milk reduction steady throughout lactation**.

**ACKNOWLEDGMENTS** This study was carried out during the INRA research project "Quelle vache laitière pour quel système?".