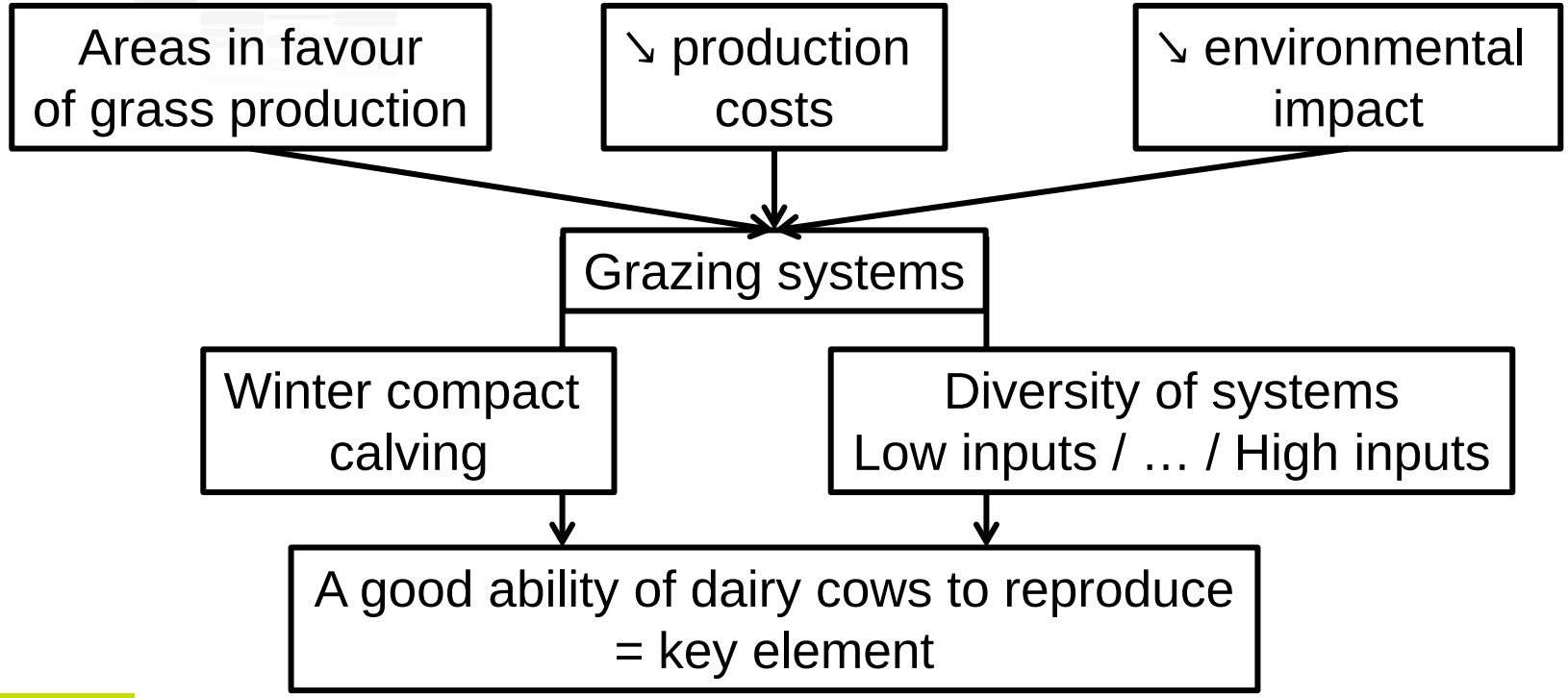
Cows limiting their milk yield and body condition loss during feed restriction have better reproductive performances

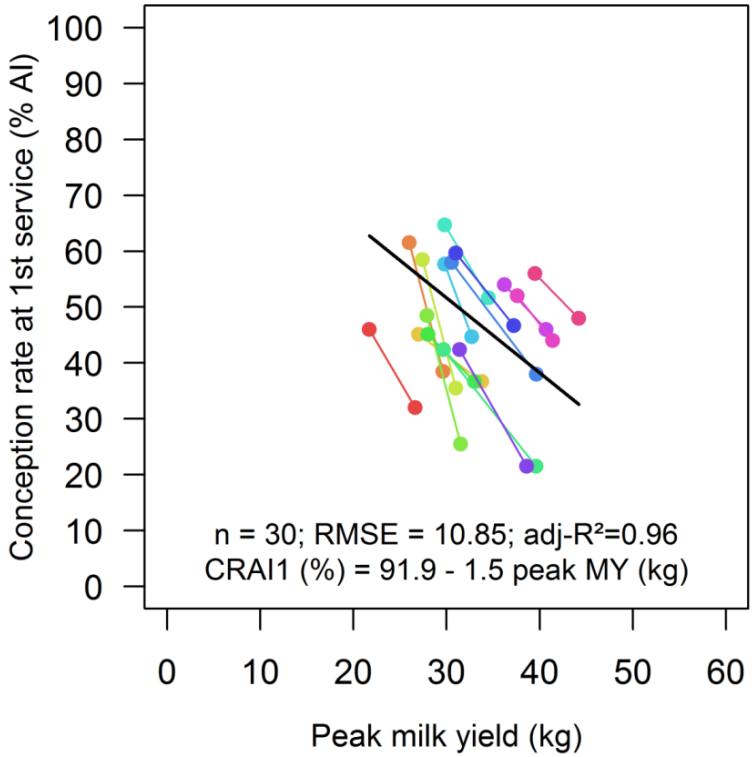
Bedere, N.[1], Delaby, L.[1], Leurent-Colette, S.[2], Disenhaus, C.[1]

[1]INRA – AGROCAMPUS OUEST UMR 1348 PEGASE, Saint-Gilles, France
[2]INRA UE 326 Domaine Expérimental du Pin-au-Haras, Exmes, France

Robustness of dairy cows is a key of the success of farming systems



Milk production and reproduction…
concomitance and competition !



+10kg of milk at peak =
-15 points of CR at 1st service !

Strong unfavourable genetic correlation between production and reproduction traits

Strong genetic selection on milk yield led to reproduction decline.

Meta-analysis
5 studies = 15 different treatments
(N. Bedere, unpublished data)

What reproductive performances for dairy and dual-purpose breeds in contrasting grazing based feeding systems ?

Hypotheses:

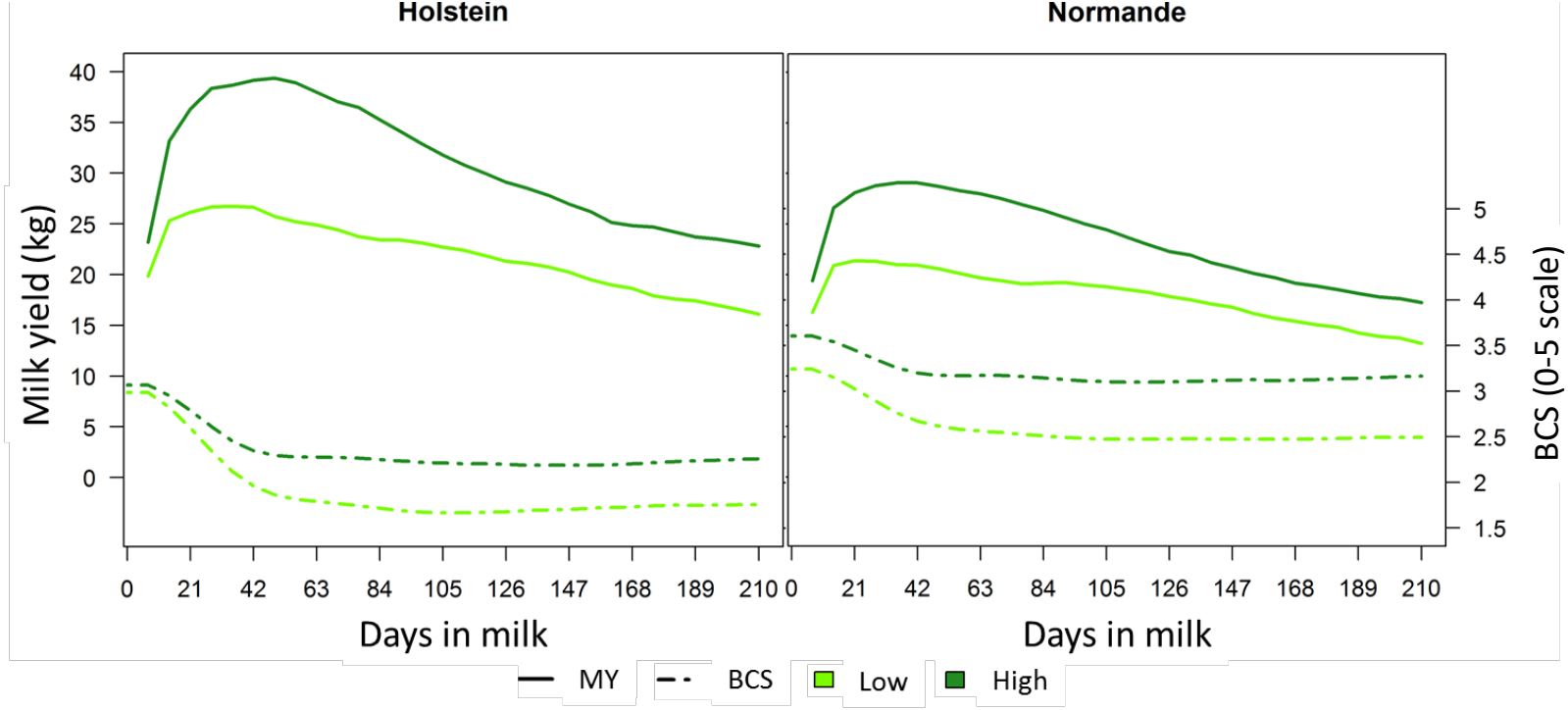
1. Some steps of the reproductive process are impacted by the breed
2. Through their impact on milk yield and body reserves management, feeding systems can affect dairy cows' reproduction

Experimental design: « The cow for the system » 500 lactations 2006-2014

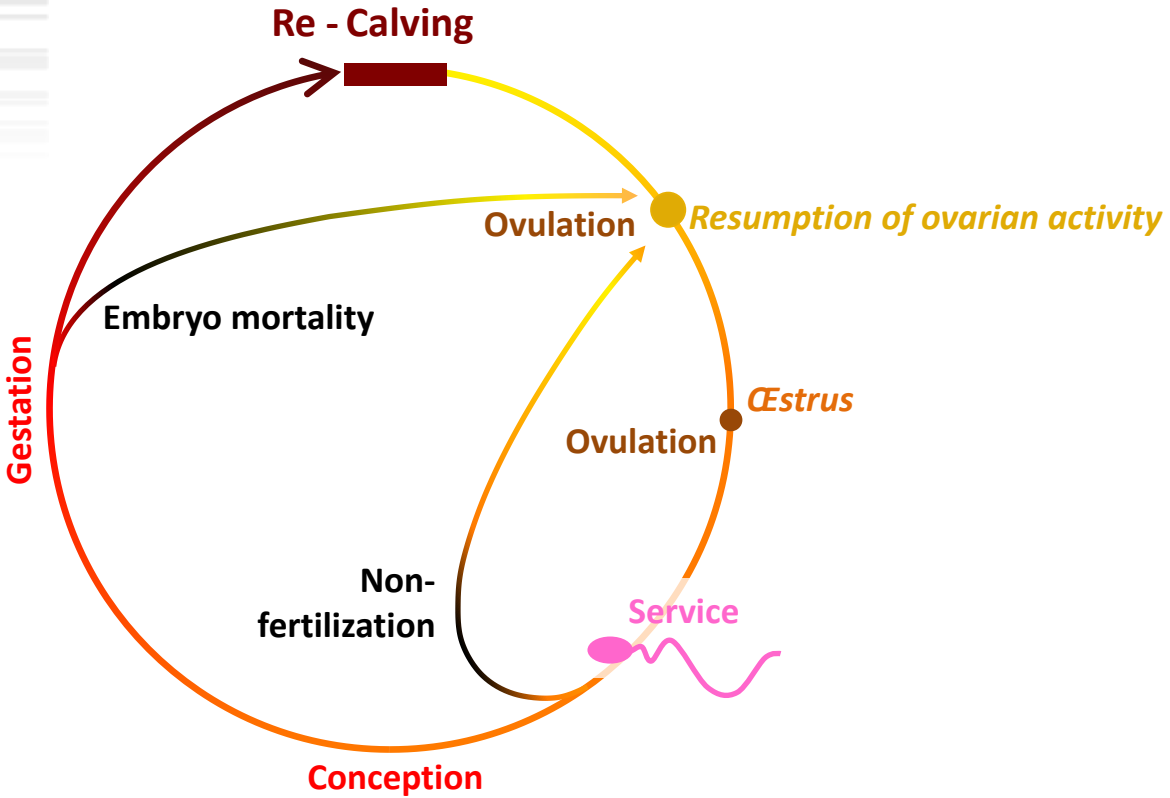
	Calving season			Breeding season		
	Jan.	Feb.	Mar.	Apr.	May	Jun.
HIGH	55 MS : 15 Alfalfa : 30 C			Grazing + 4kg C		
LOW	50 GS : 50 Haylage			Grazing only		

Milk yield 1/d + BCS 1/month
Progesterone 3/wk. + Oestrus 5/d + Ultrasonography x2

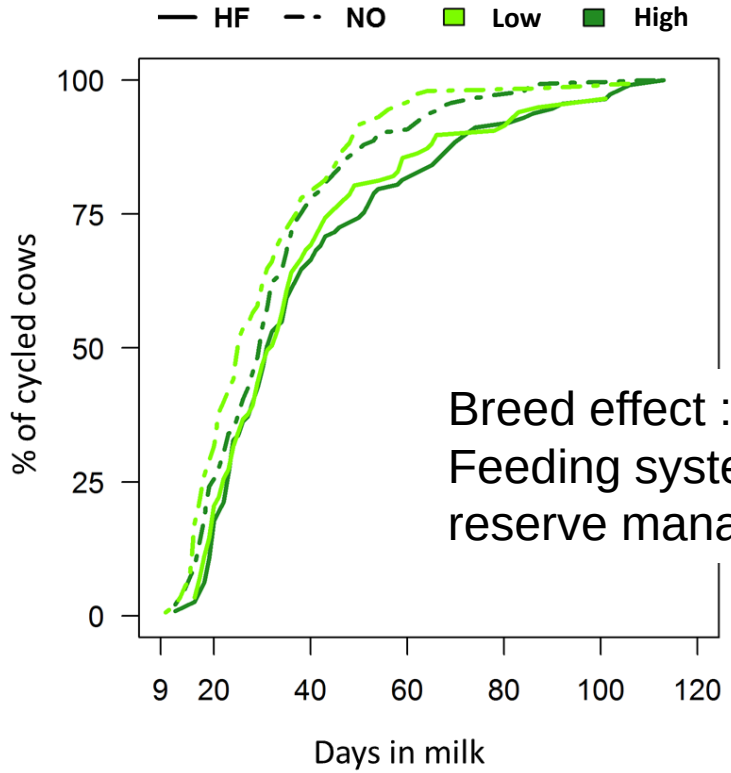
Cows in the High feeding system produce more milk… and lose less body condition.



Reproduction of dairy cows: a succession of steps

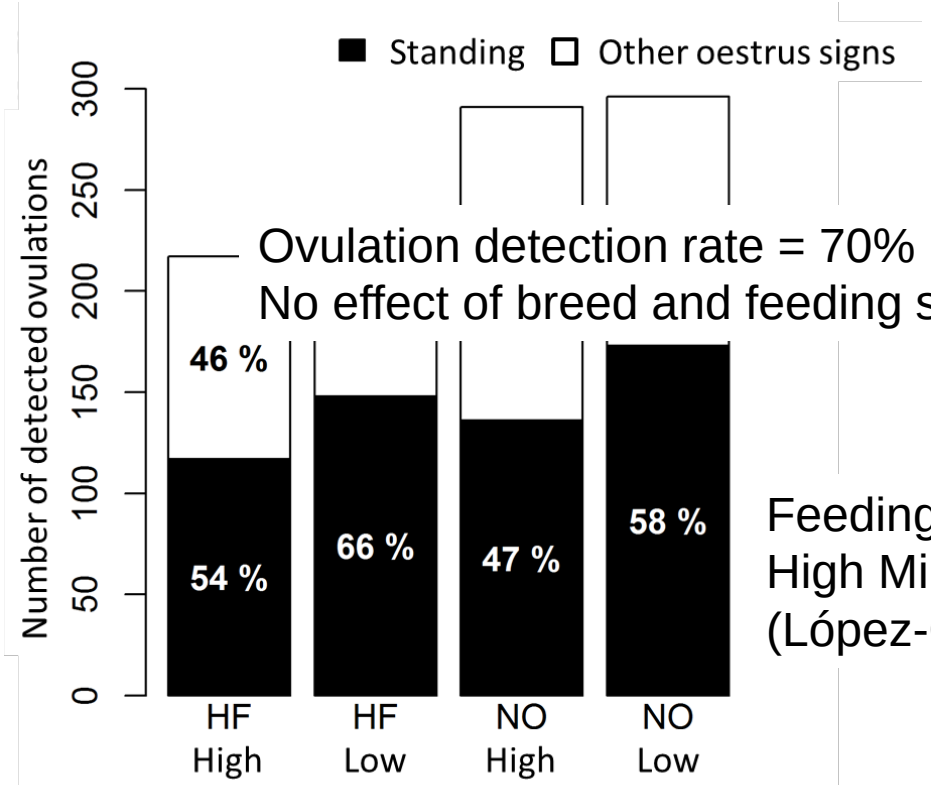


Cyclicity is mainly impacted by genetic characteristics



Breed effect : similar to Disenhaus *et al.* (2009)
Feeding system (no)effect : importance of body reserve management (Friggens *et al.*, 2010)

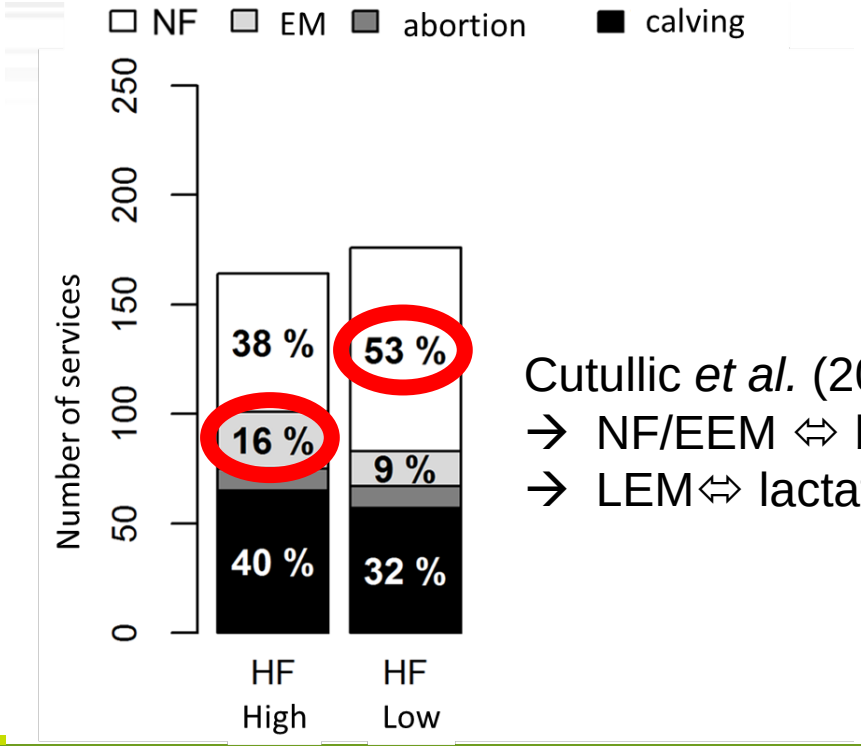
Both breed and feeding system affect oestrus expression



Ovulation detection rate = 70%
No effect of breed and feeding system

Feeding system:
High Milk Yield = ↘ oestrus intensity
(López-Gatius *et al.*, 2005)

Holstein cows suffer different fertility problems regarding to the feeding system

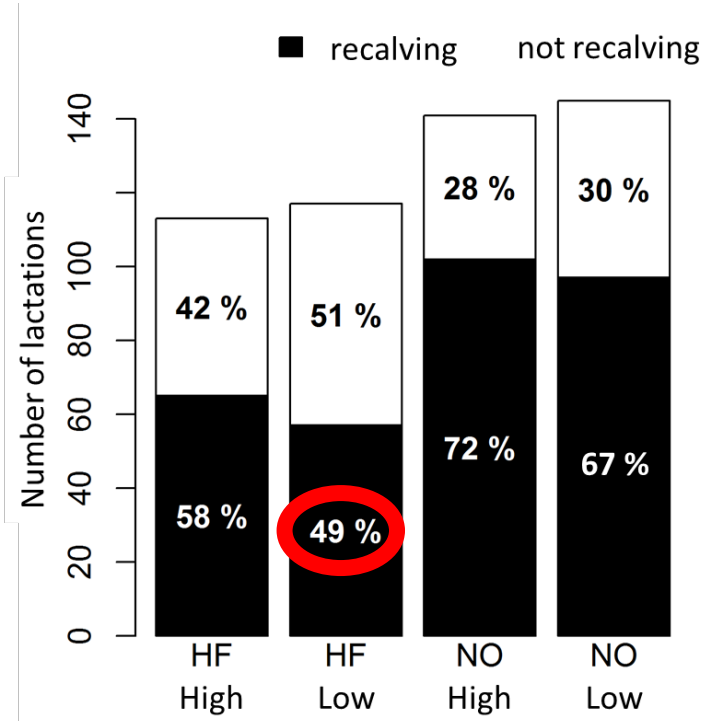


Cutullic *et al.* (2012)

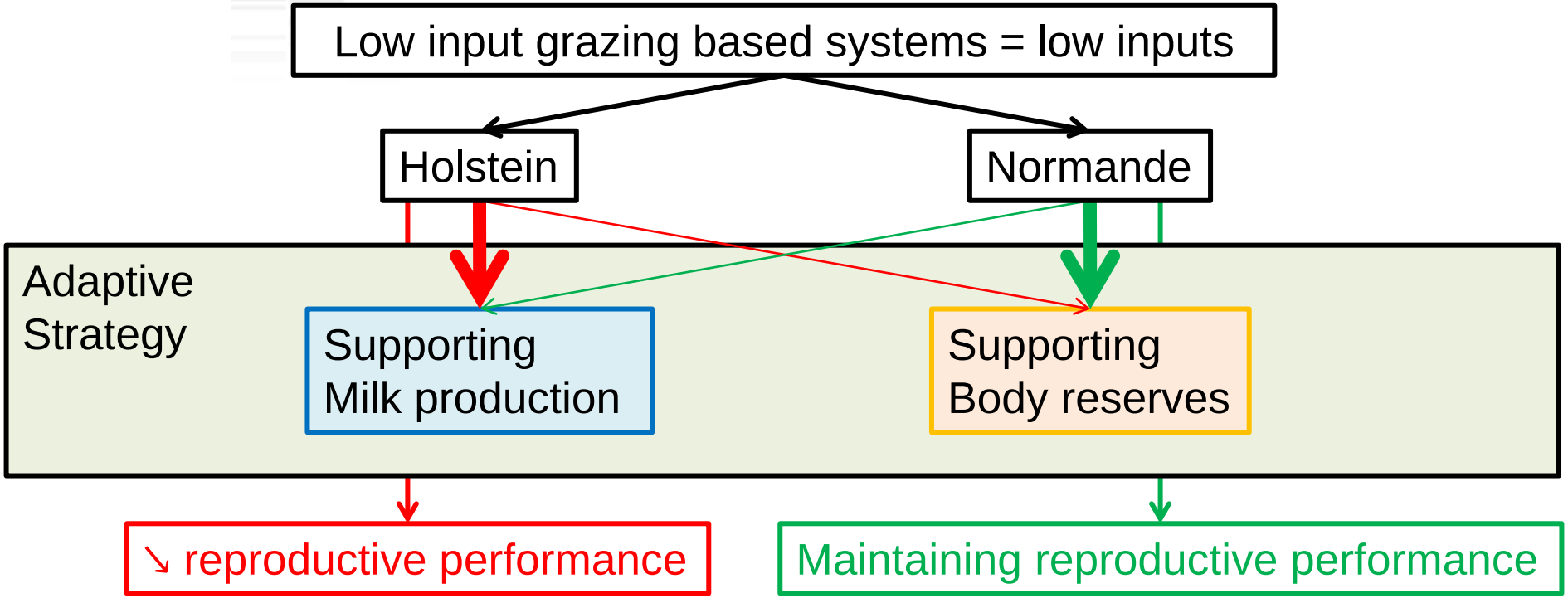
→ NF/EEM ⇔ body condition management

→ LEM⇔ lactation persistency

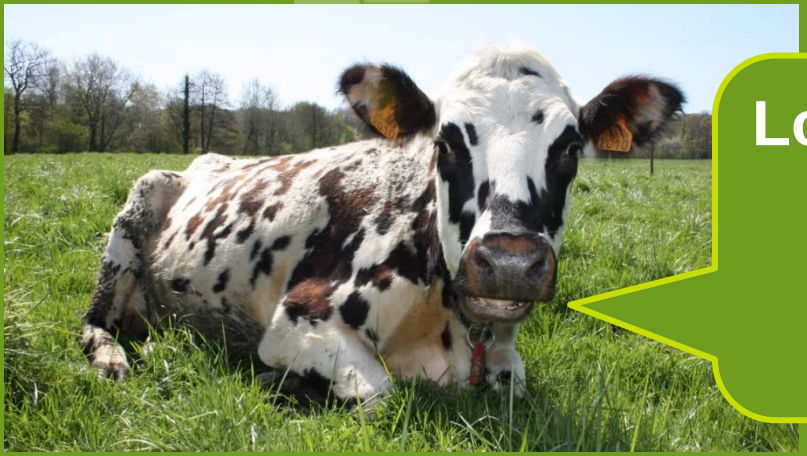
This results in higher recalving rate for Normande cows and a tendency in the High feeding system



Contrasted adaptive strategies according to the flexibility of milk production and body reserves



Thank you for listening !



Looking for more information?
Poster n°2250 (45.29)
nicolas.bedere@inra.fr
until November 2016…

…and after ?
n.bedere@gmail.com

INRA SCIENCE & IMPACT
AGRO CAMPUS OUEST