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Technical and economic analysis of using wrapped grass for young bulls finishing

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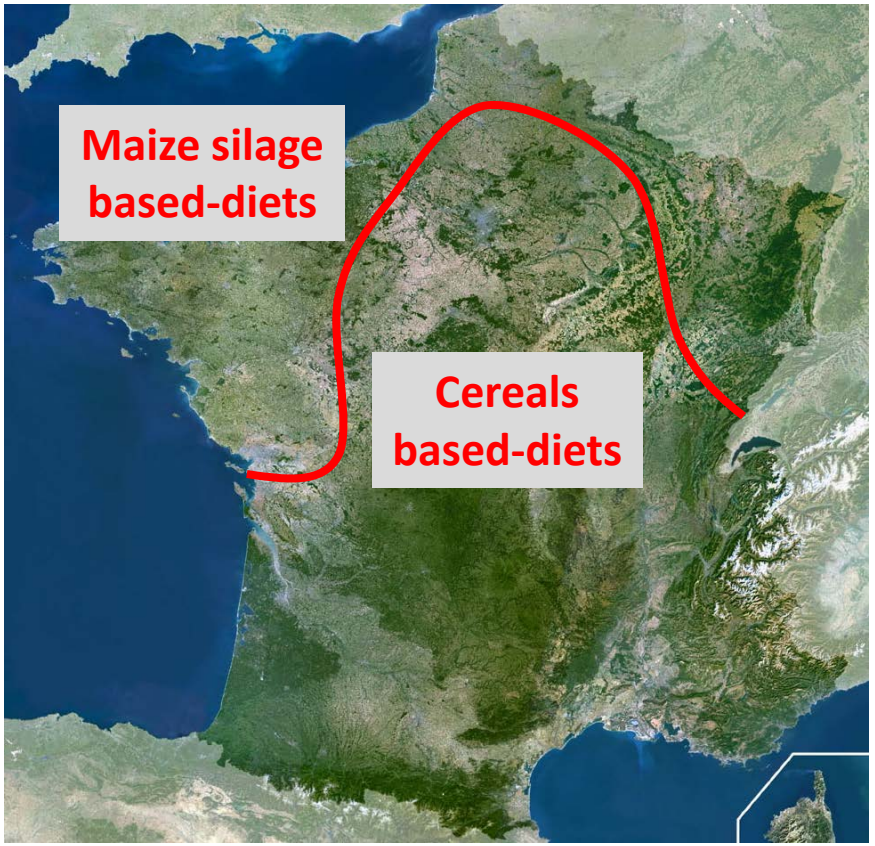
INTRODUCTION

- **France: 21 000 farms with YB fattening activity**
- **YB in free-stall housing**
- **Pb of profitability high costs of feeds:**

Oil-cakes ***Maize***

Wheat/barley



<u>Is wrapped grass efficient:</u>

→ To maintain high average daily gain?

→ To reduce fattening costs?

MATERIALS AND METHODS

Synthesis of published trials

A) 18 grass-based diets compared to control diet <u>within-trial</u>

6 experimental farms
ARVALIS, CA's, INRA, IDELE

Cereals-based (n=8)

Maize silage-based (n=10)

B) Data collected:

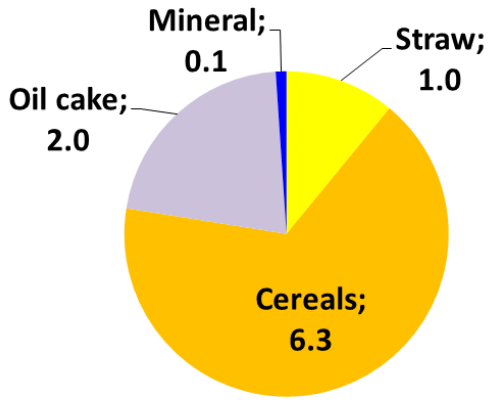
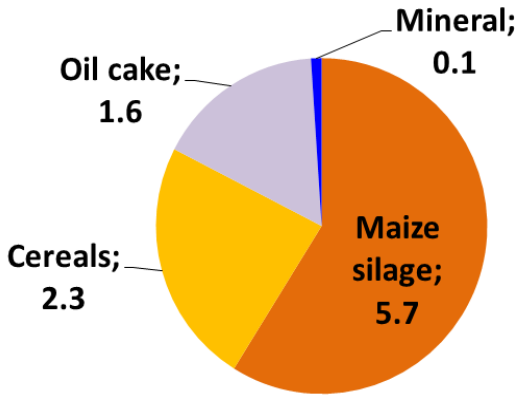
- **ADG – carcass weigh**
- **Forage and concentrate total intake**

Across 2010-2016:

- **Feed cost study**
- **Farm income impact (Simulbox®)**

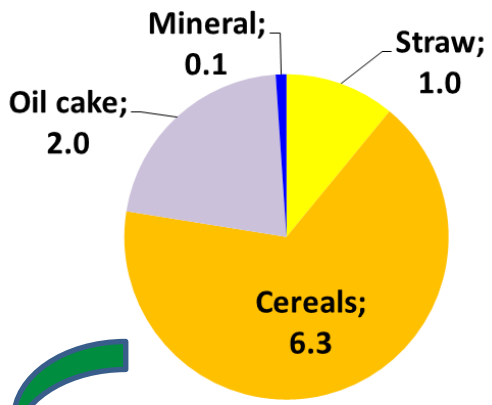
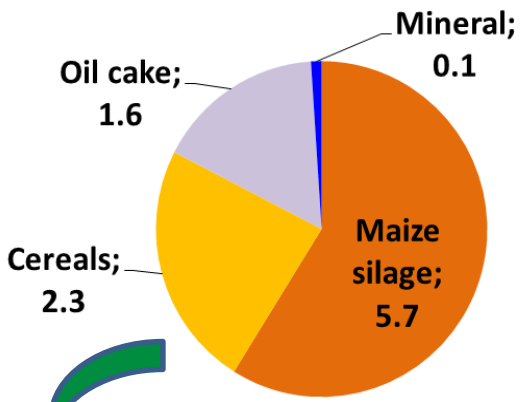
MATERIALS AND METHODS

Average daily diets composition (kg of DM per day per YB)

	Cereal based diets N=8	Maize silage based diets N=10
Control diets		

MATERIALS AND METHODS

Average daily diets composition (kg of DM per day per YB)

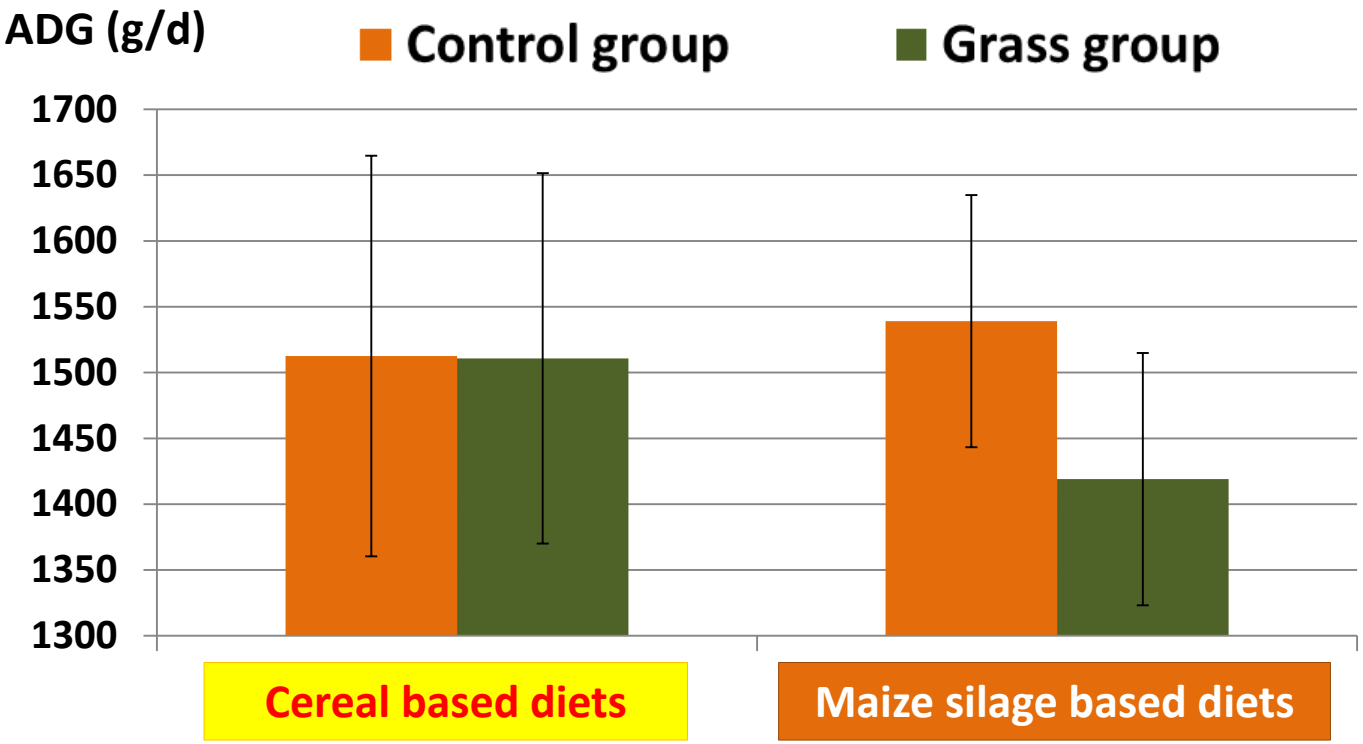
	Cereal based diets	Maize silage based diets
Control diets		
Grass diets	➢ Replacing ad libitum straw by wrapped grass (~ 3.3 kgDM/d)	➢ Adding fixed quantity of wrapped grass (~ 3.5 kgDM/d)

Grass quality: 0.71 UFV (ME: 9.6 MJ/kgDM)**; 13% of CP**

RESULTS

Growing performances

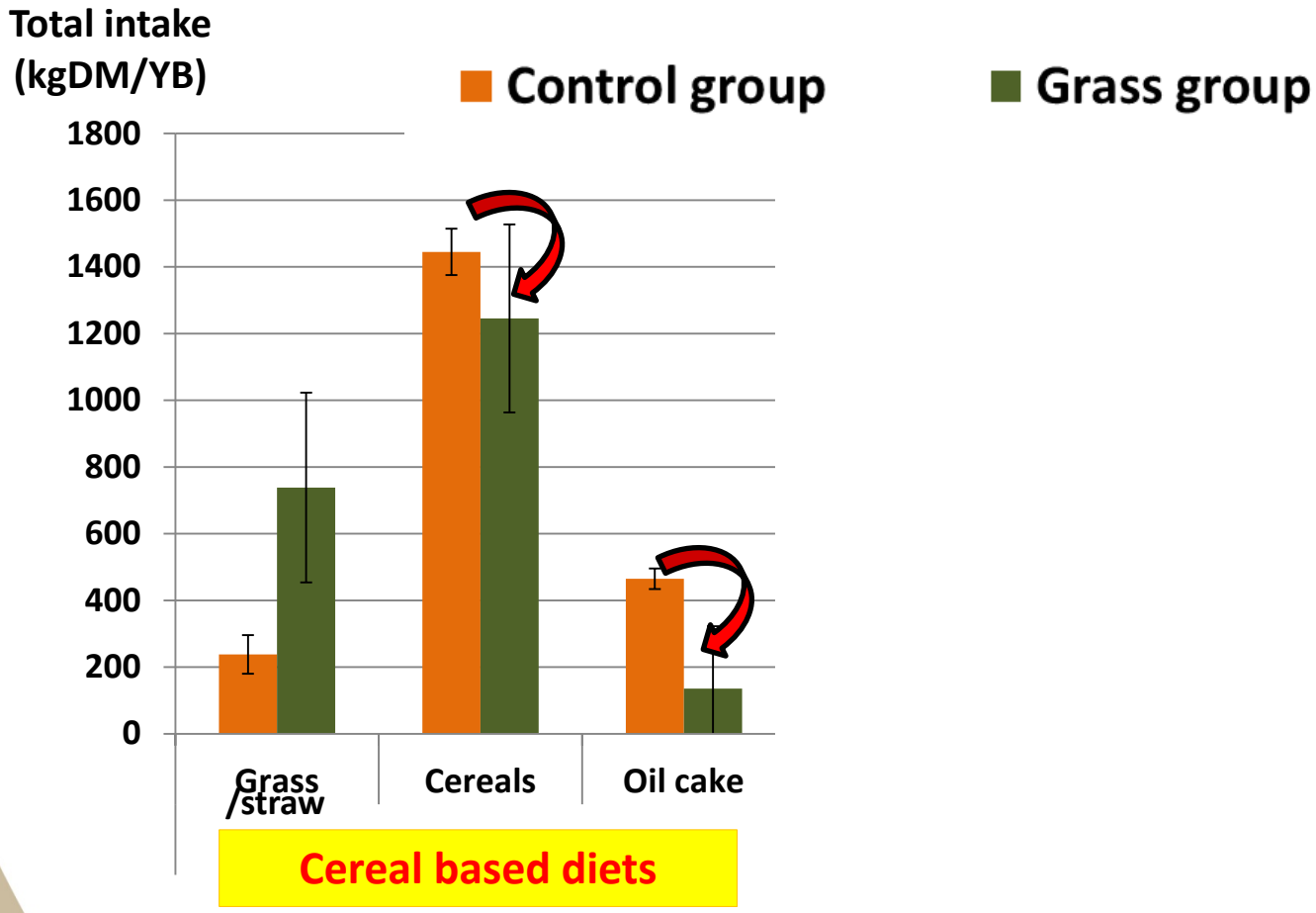
Carcass weight: 427 kg (+/- 10 kg)



➢ **+17 days of fattening duration with grass in maize silage diets**

RESULTS

Total intake per YB carcass produced (427kg)



RESULTS

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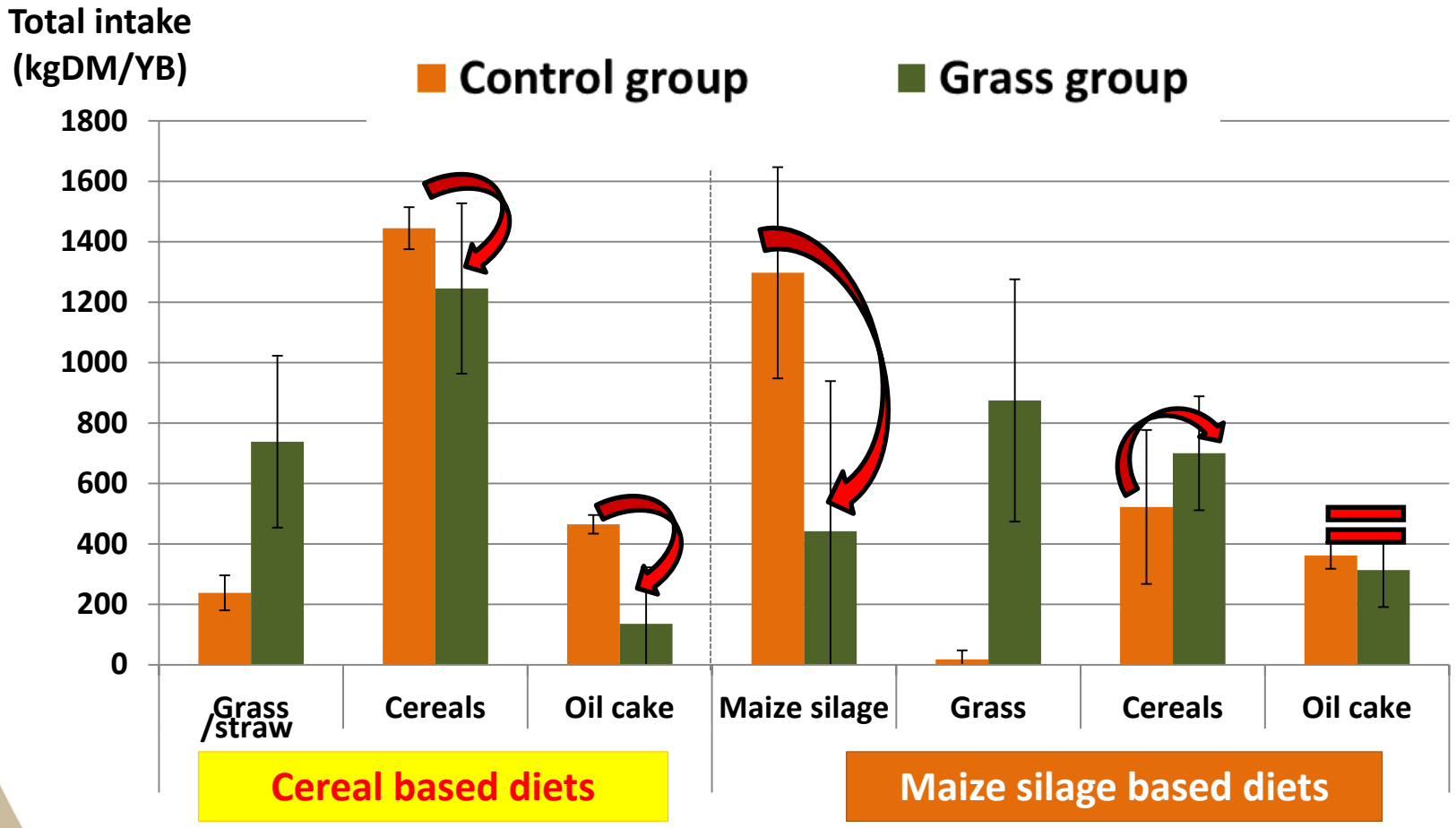
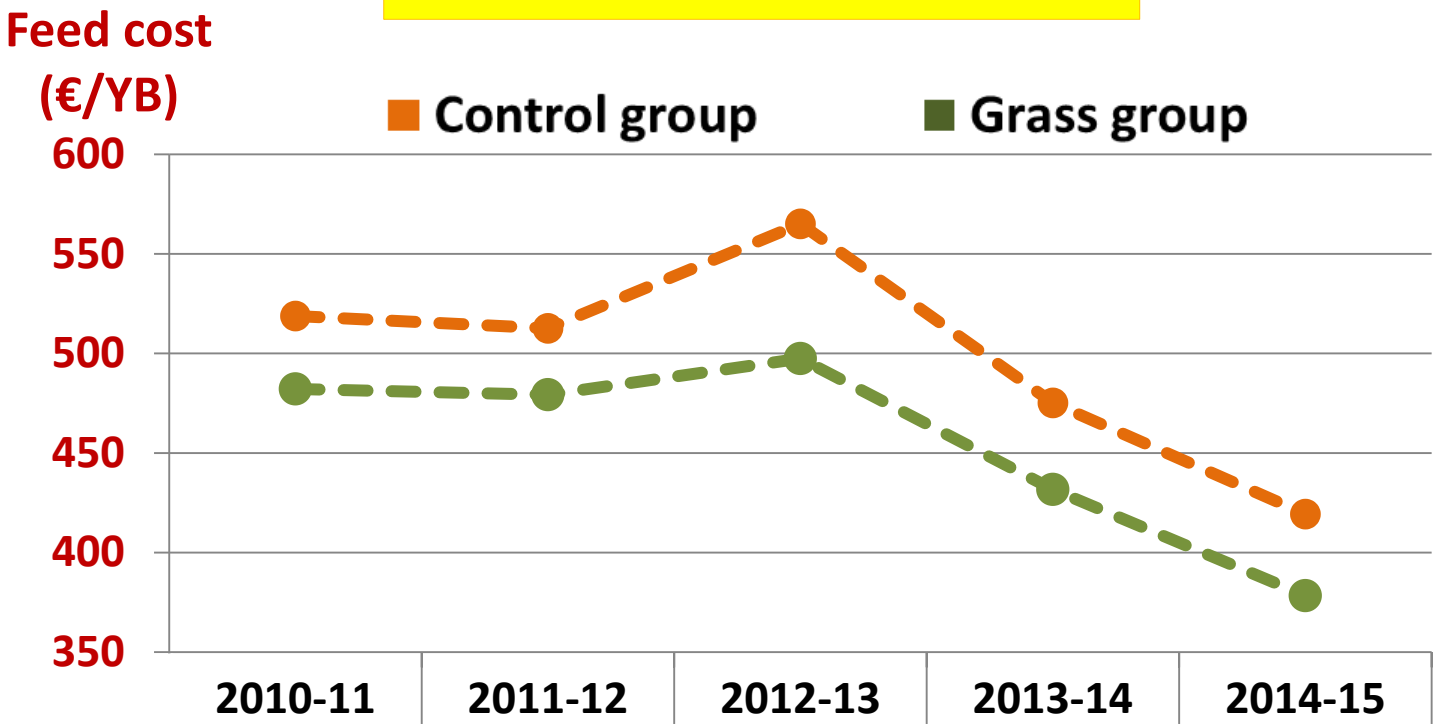


➢ **No reduction of concentrates intake per YB produced with grass in maize silage diets**

RESULTS

Feed cost per YB carcass produced

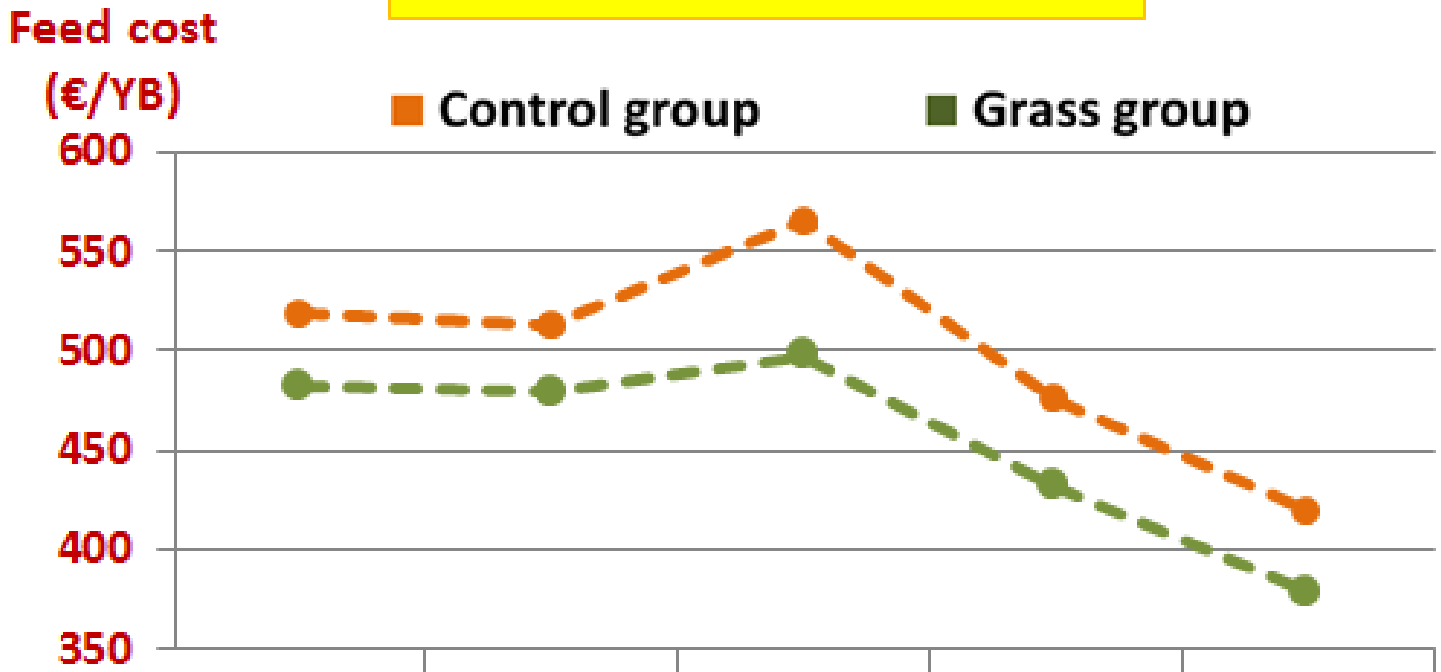
Cereal based diets



RESULTS

Feed cost per YB carcass produced

Cereal based diets



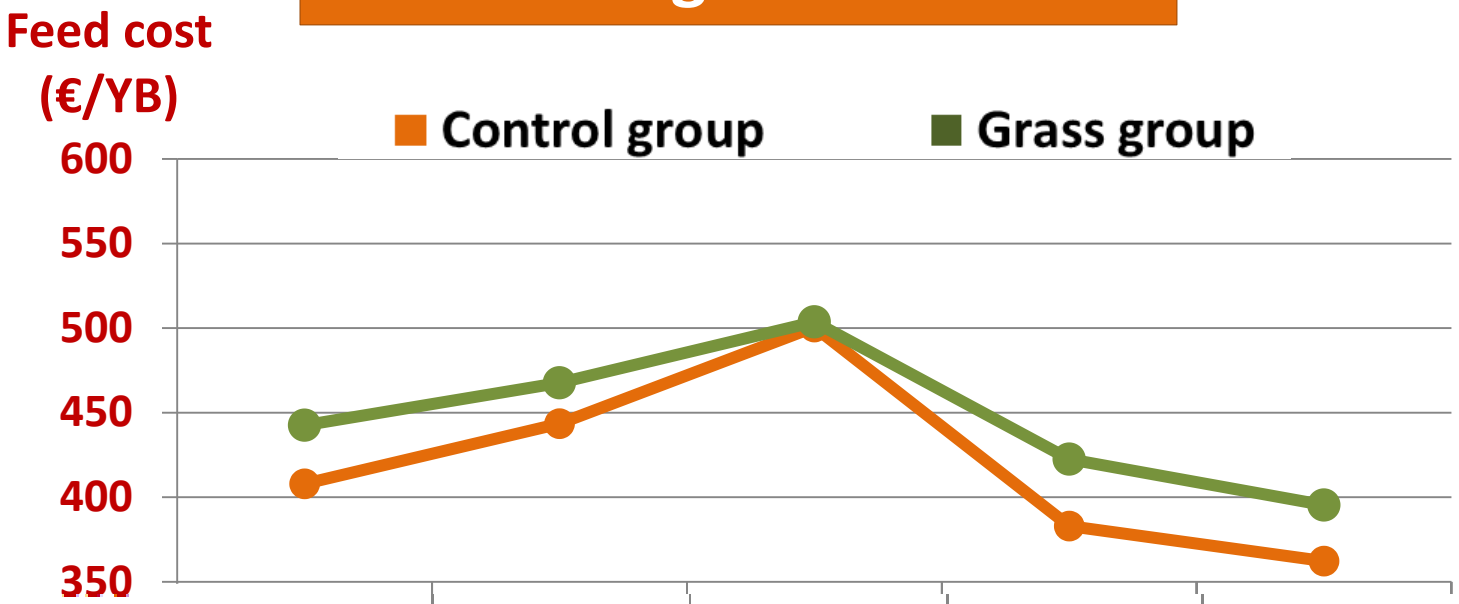
Year >>	2010-11	2011-12	2012-13	2013-14	2014-15	
Oil cake >>	244 €	256 €	323 €	282 €	278 €	€/t
Wheat >>	224 €	211 €	229 €	185 €	156 €	€/t
Wrapped grass >>	143 €	161 €	138 €	143 €	128 €	€/t DM

➢ Cereals+grass: on average - 7% of feed cost

RESULTS

Feed cost per YB carcass produced

Maize silage based diets



Year >>	2010-11	2011-12	2012-13	2013-14	2014-15	
Oil cake >>	244 €	256 €	323 €	282 €	278 €	€/t
Wheat >>	224 €	211 €	229 €	185 €	156 €	€/t
Maize silage >>	121 €	147 €	159 €	101 €	95 €	€/t DM
Wrapped grass >>	143 €	161 €	138 €	143 €	128 €	€/t DM

➢ Maize silage+grass: on average + 6% of feed cost

RESULTS

Farm scale simulation

Cereal based diets

Farm model	Center of France Crops + breeding & fattening farm Total cultivated: 175 ha 28 YB/year	
Fattening Diets	Straw + wheat + oil cake	3.3 kgDM grass + concentrate
Main Forage Area	67 ha	+ 3 ha
Farm EBITDA	72 950 €	+ 2.0 % *(+1.2 to +3.0)*
Income/ labor unit	17 100 €	+ 4.2 % *(+2.0 to +5.7)*

RESULTS

Farm scale simulation

Cereal based diets | **Maize silage based diets**

Farm model	Center of France Crops + breeding & fattening farm Total cultivated: 175 ha 28 YB/year		North-west of France Breeding and fattening farm Total cultivated: 85 ha 32 YB/year	
Fattening Diets	Straw + wheat + oil cake	3.3 kgDM grass + concentrate	Maize silage + concentrate	3.3 kgDM grass + maize silage + concentrate
Main Forage Area	67 ha	+ 3 ha	74 ha	+ 1 ha (+ 2 ha grass - 1 ha maize)
Farm EBITDA	72 950 €	+ 2.0 % *(+1.2 to +3.0)*	34 700 €	- 1.5 % *(-1.3 to -1.8)*
Income/ labor unit	17 100 €	+ 4.2 % *(+2.0 to +21.4)*	17 800 €	- 2.4 % *(-1.8 to -3.0)*

CONCLUSION

Introducing grass in YB fattening diets:

- ~ 3.2 kgDM per day per YB
- Maintain ADG over 1400g/d and 1500g/d with good quality grass (beginning of heading)

- Save 200 kg of wheat and 300 kg of rapeseed oil-cake in cereal diets
- Save 800 kgDM of maize silage in maize-based diets

- Stabilize farm income across years
- Reduce environmental impact
- Goes in the way of social expectations

Thank you for your attention

Many thanks to all who contributed to this synthesis with their work on the experimental farms