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Rotational grazing for organic pregnant sows : a mechanism to reduce feed consumption ?

A. Roinsard¹, F. Maupertuis², C. Gain¹, P. Pierre³

¹ITAB, 9, rue André Brouard, 49105 Angers, France,

²Chambre d'agriculture Pays de la loire, La Géraudière, 44939 NANTES CEDEX 9, France

³IDELE, 9, rue André Brouard, 49105 Angers, France; antoine.roinsard@itab.asso.fr



Introduction

- Growing of organic pig production in Europe (Agence bio, 2019)
- In France, 50 % of organic sows are raised in free range systems (Roinsard & Bertin, 2018)
- 80 % of cost = feed ;

1

EU regulation towards
100% organic feeds for
organic animal
production

2

A lack of protein feeds
in organic production

3

Make a better use of
organic protein feeds
(CASDAR SECALIBIO)

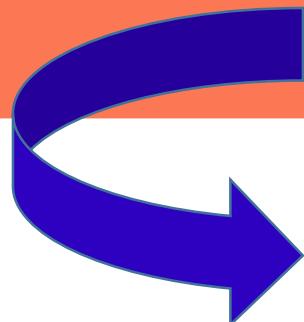
Why can grazing help to this challenge ?

Could pregnant sows graze pasture rich in legumes in order to reduce protein in supplied feed ?

Grassland rich in legumes (clover)

Rotating pasture with paddocks

Less protein in supplied feed



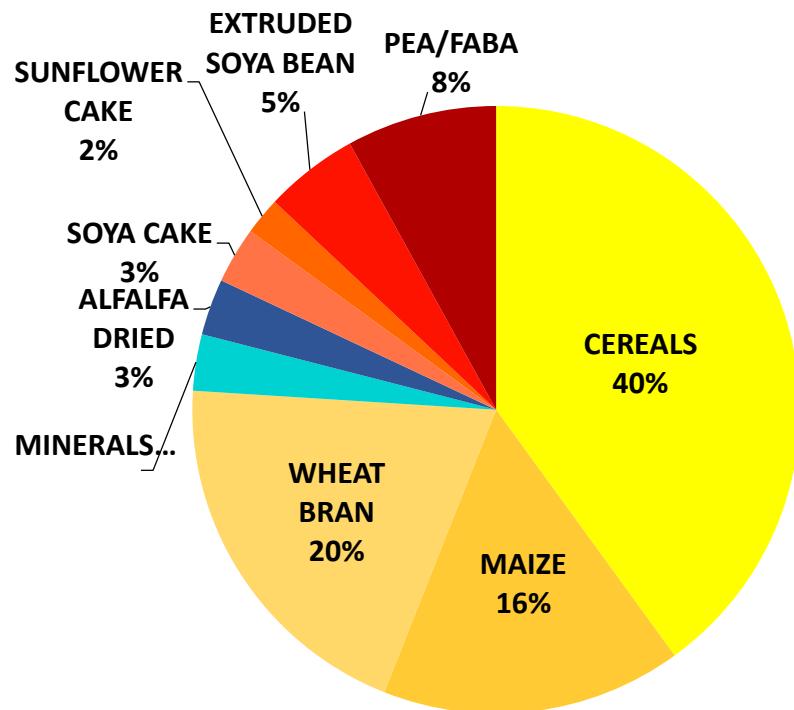
Evaluation in an experimental farm of an innovative farmer practice

Experimental design (organic free range pregnant sows). 2016/2017

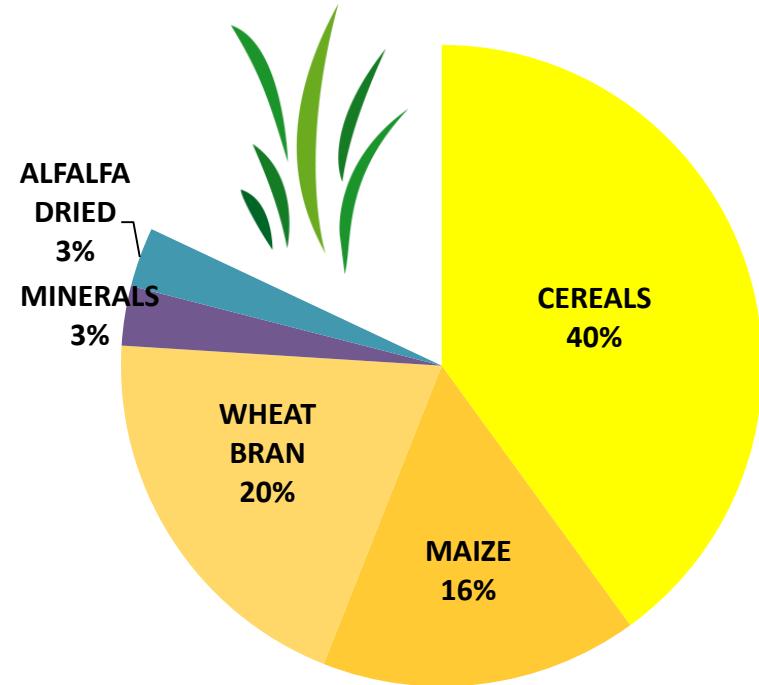
TOPIC	CONTROL SOWS (continue grazing)	PASTURING SOWS (rotational grazing)	INDICATOR
Zootecnic performances 	n=52 (5 groups)	n=22 (2 groups)	Weight gain Dorsal fat gain
Grassland intake 	-	n=14	Kg DM / sow
Selectivity of sows 	-	n=14	% grassland species
Contribution of nutritional needs 	n=52	n=14	% LYS an EM cover by pasturing
Economical impact 	Global for one year		Feed cost

Experimental design : feed management

**CONTROL : 100% of classical feed
(match with pregnant sows needs)**



**PASTURE : 80% of experimental feed
(1 month after insemination)**



Experimental design : feed management

	CONTROL	PASTURE
CP (%)	13,6%	10,2%
LYS (%)	0,64	0,38
CB (%)	6,4	6,0
Net energy (MJ / kg)	9,3	9,1

Experimental design : grassland intake

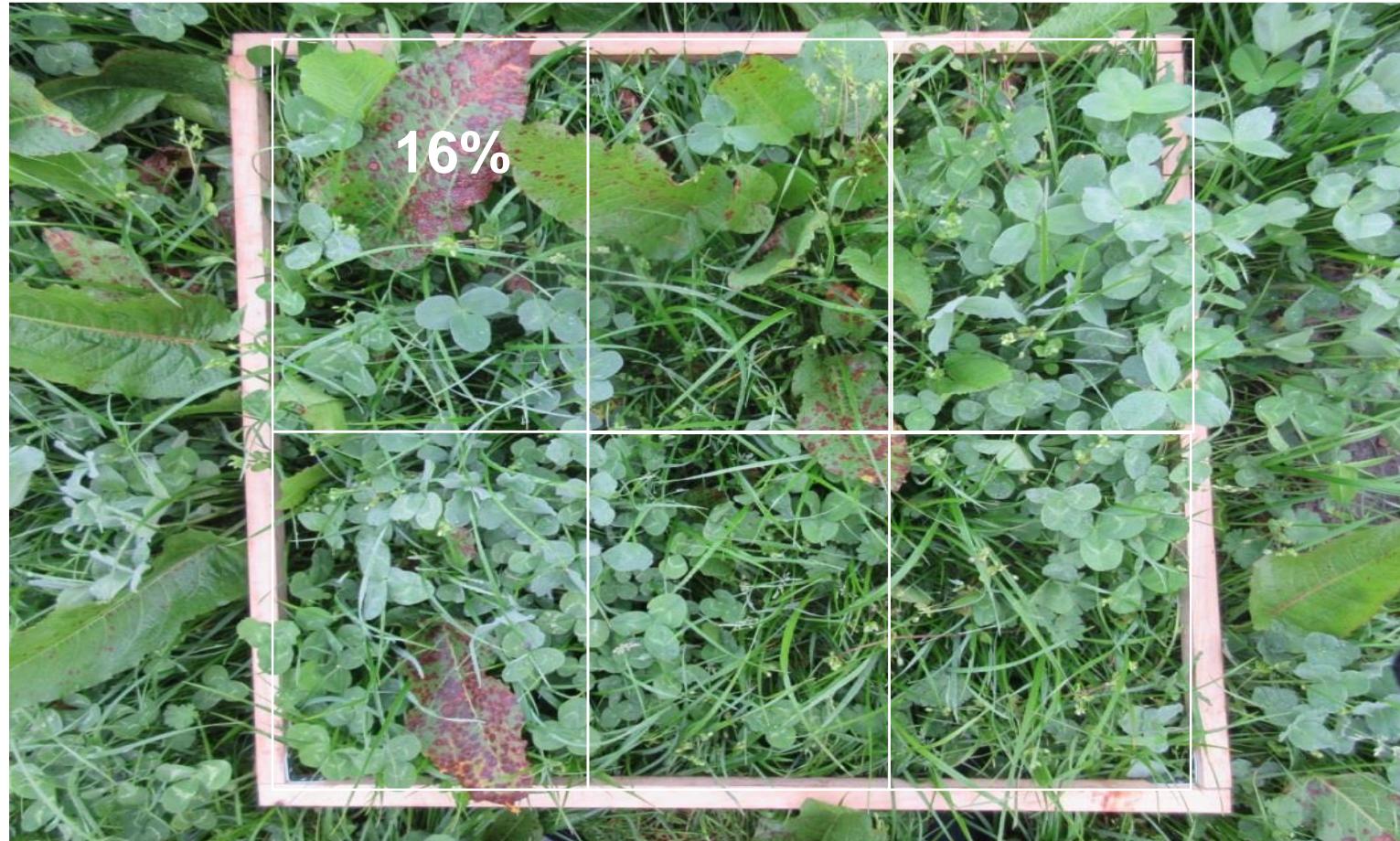
Grassland intake =

biomass before grazing – biomass after grazing

Number of sows in the paddocks



Experimental design : sow selectivity



Experimental design : grassland management

Grassland 1

- Ray-grass Hybride 8 kg/ha
- White clover 3 kg/ha
- Red clover 3 kg/ha



Grassland 2

- Ray-grass Anglais 16 kg/ha
- White clover 3 kg/ha
- Hybrid clover 3 kg/ha
- Alfalfa 5 kg/ha



1st group : small sows

1 paddock = 270 m²

2nd group : big sows

Less productive grassland



A photograph of a rural scene. In the foreground, several pigs are grazing in a lush green field. One pig in the center-left has a purple mark on its back. Another pig to its right has a yellow ear tag. In the background, there's a large, light-colored farm building with a dark roof, surrounded by trees and other farm structures. The sky is overcast.

After grazing

Before
grazing

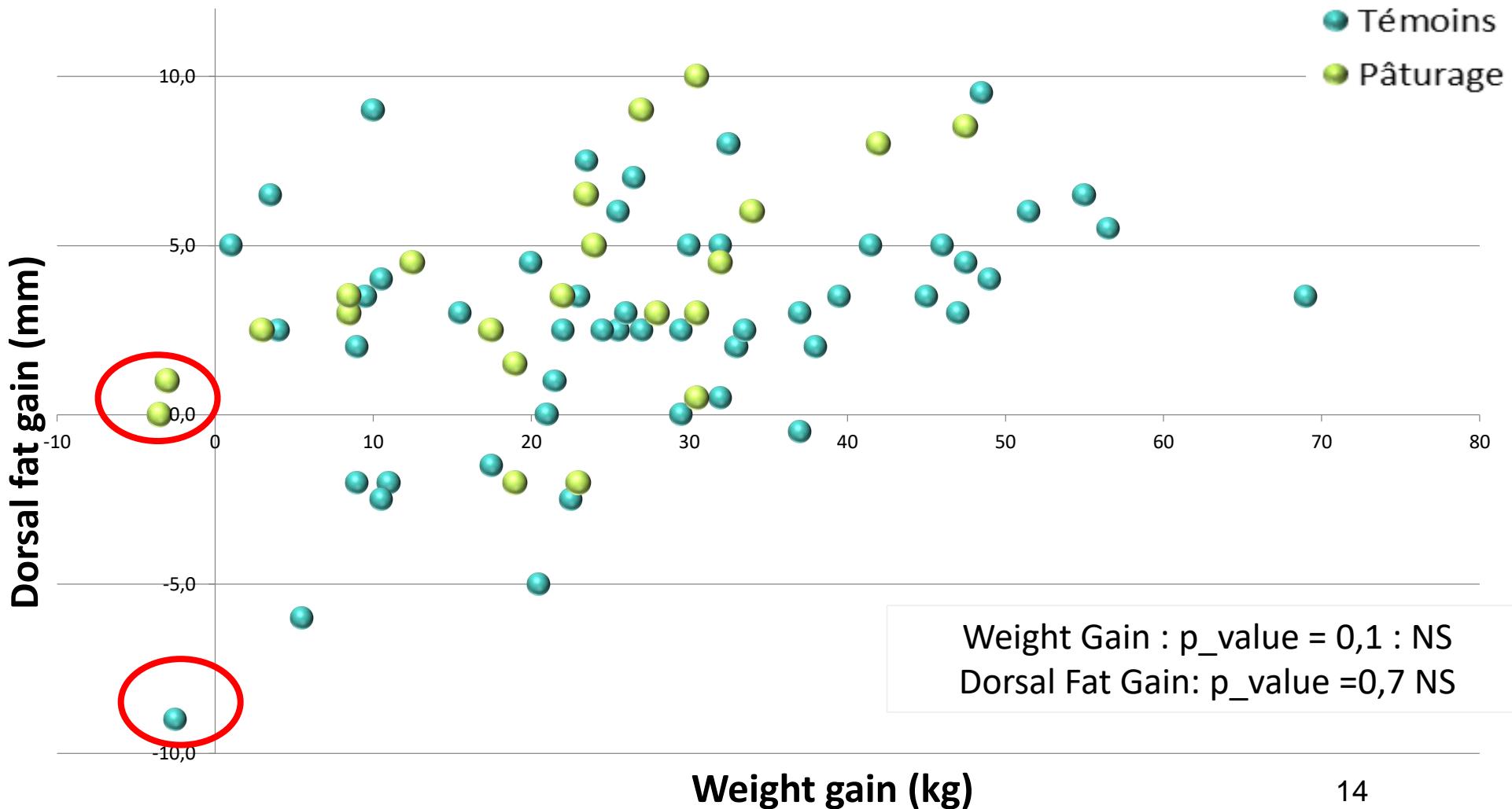
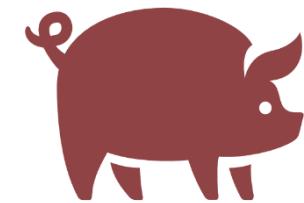
Experimental design : nutrients provide by grazing

→ Calculation method : INRA Porc based on measured performances (herd scale)

Nutrients intake by pasture =

Animal requirement – nutrients intake by concentrate

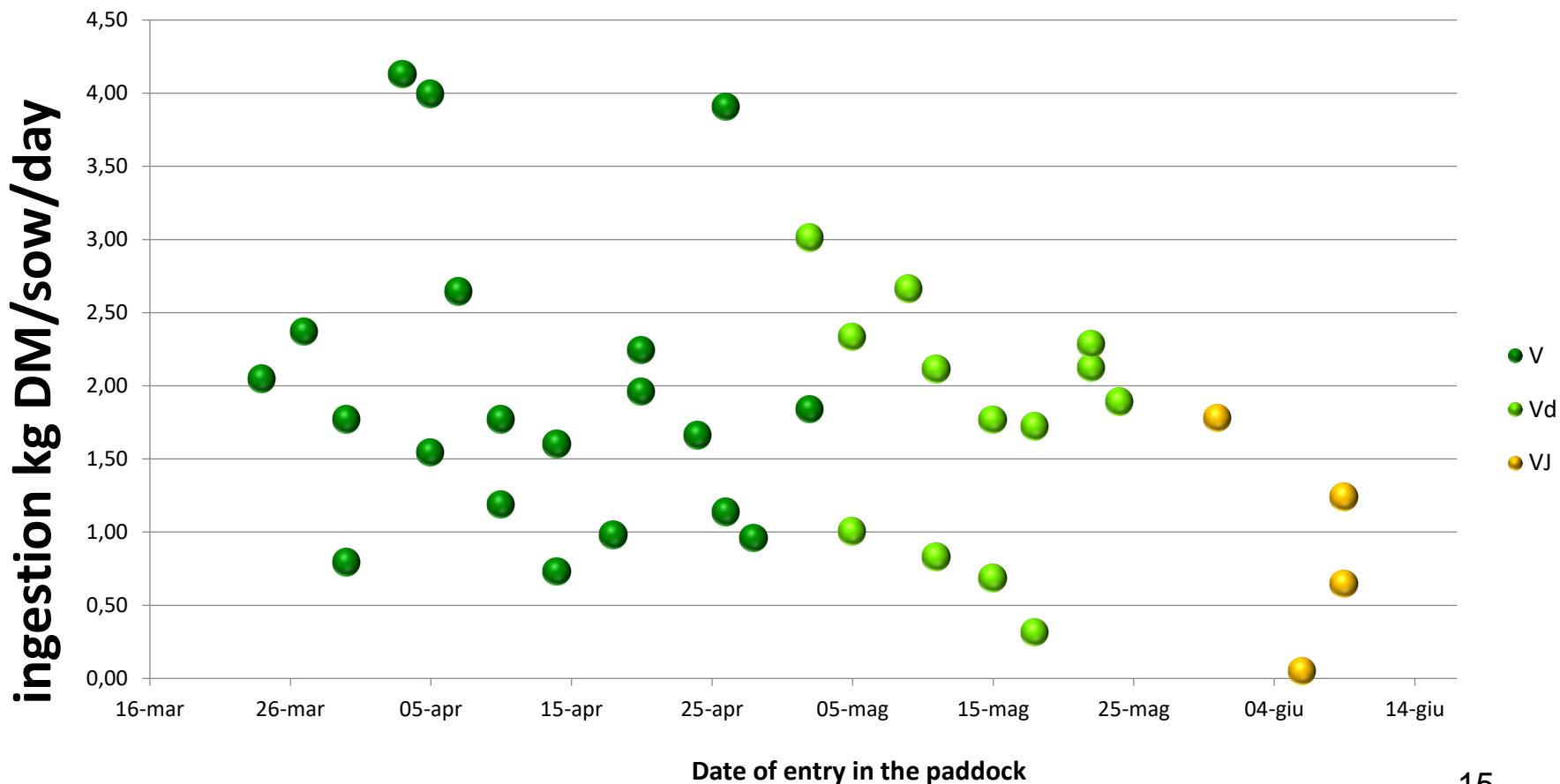
Main results: zootechnic performance



Main results: herbage intake



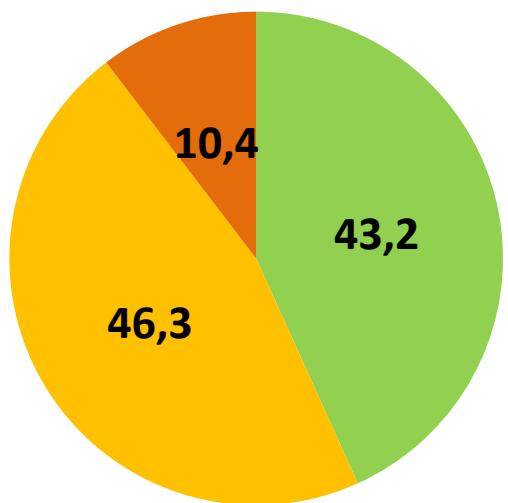
- Small sows : 1,5 kg DM/day
- Big sows : 2 kg DM/day



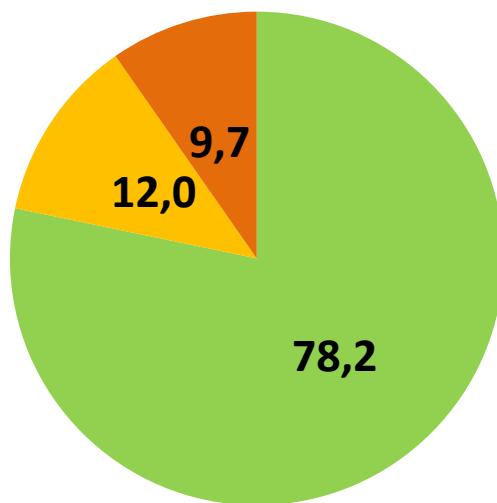
Main results: selectivity



Before grazing %
(n=43)



After grazing %
(n=43)



Grass



Legumes

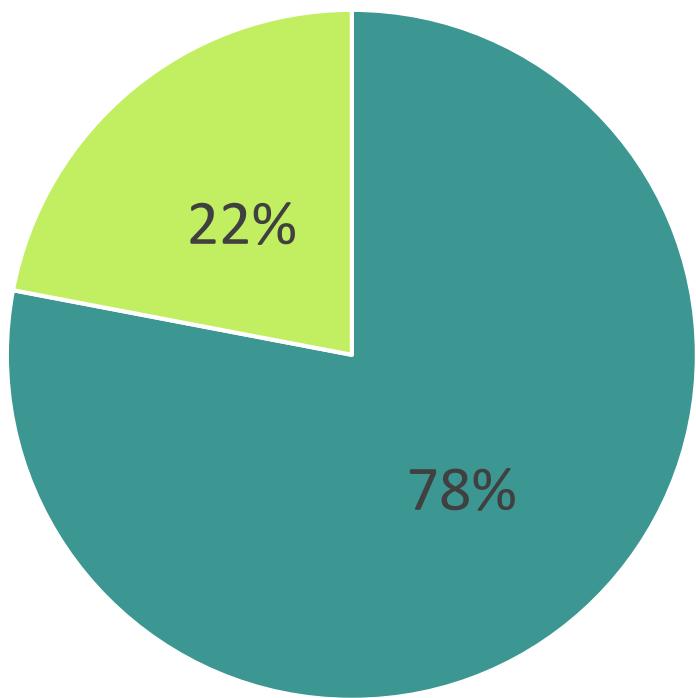


Other

Main results: contribution of nutritional needs

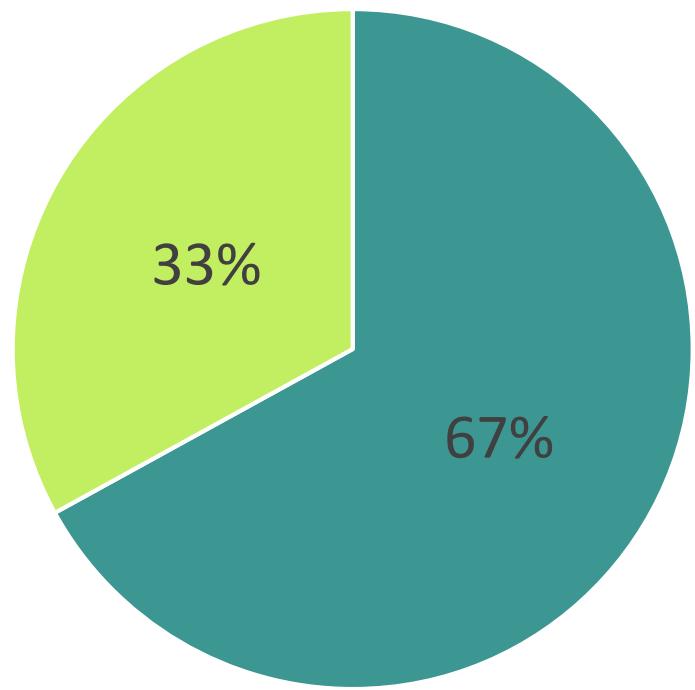


EM

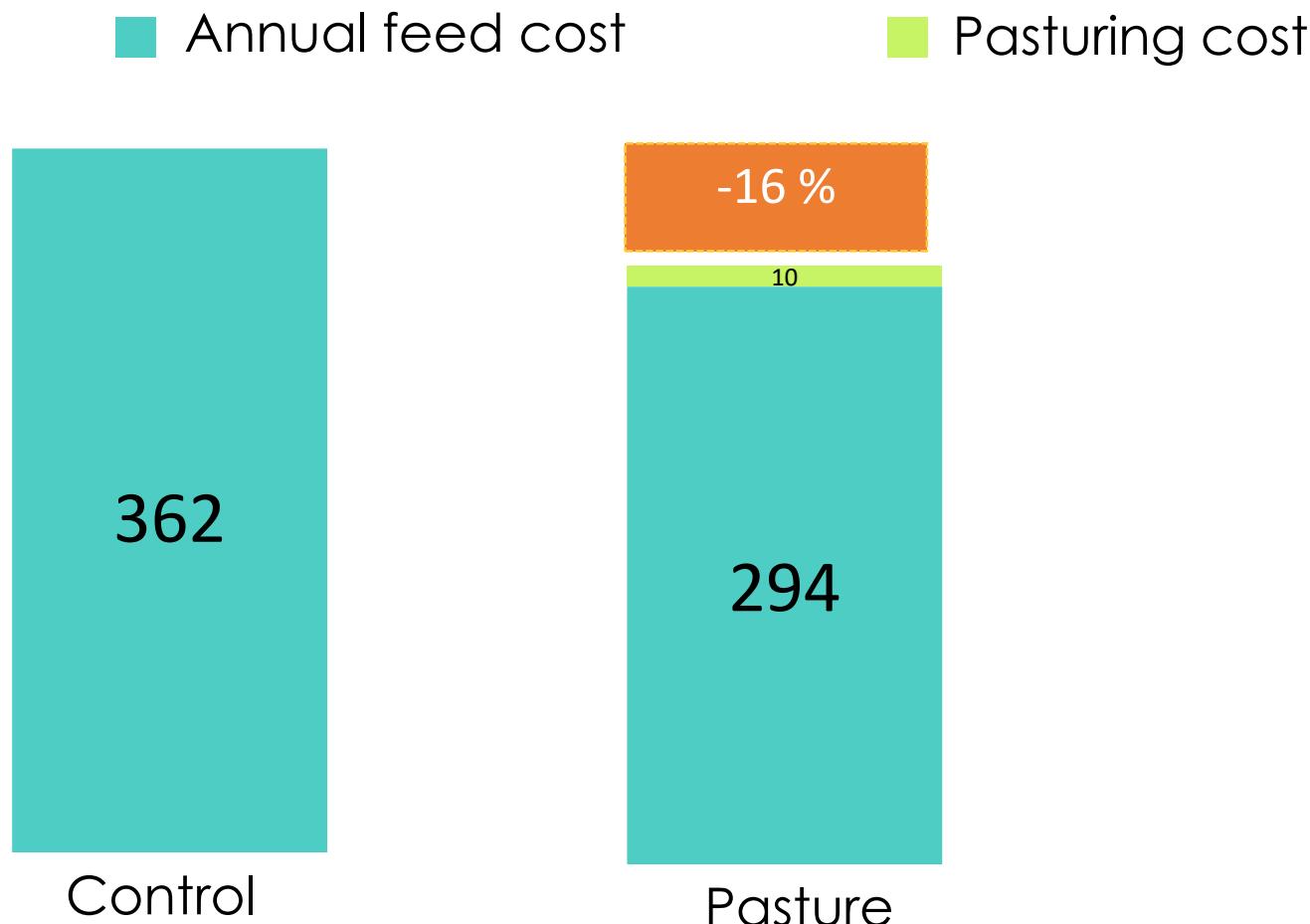


■ Feed
■ Pasture

LYS dig

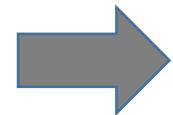


Main results: feed cost for pregnant SOW



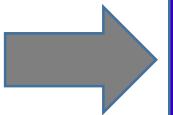
Pasturing system improvement:

Too much competition
at feeding for
pasturing sows



Individual feeding
(refectory)

Less interest to pasture
at the end gestating
period



Back to a complete feed 3
weeks before farrowing

Start pasturing system at the
beginning of pregnancy

Other elements :

Silage distribution when pasturing is not possible

Increase knowledge of fodder value for pigs and sows

Long term impact on lactating performances