



Effect of a patented combination of plant extracts on piglets performance



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in vivo
Nutrition et Santé Animales

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Context of the study

- To look for alternatives to antibiotics
- To evaluate one of the new alternatives
- To determine the impact of sows' diet on piglets performances:
 - Before weaning
 - After weaning

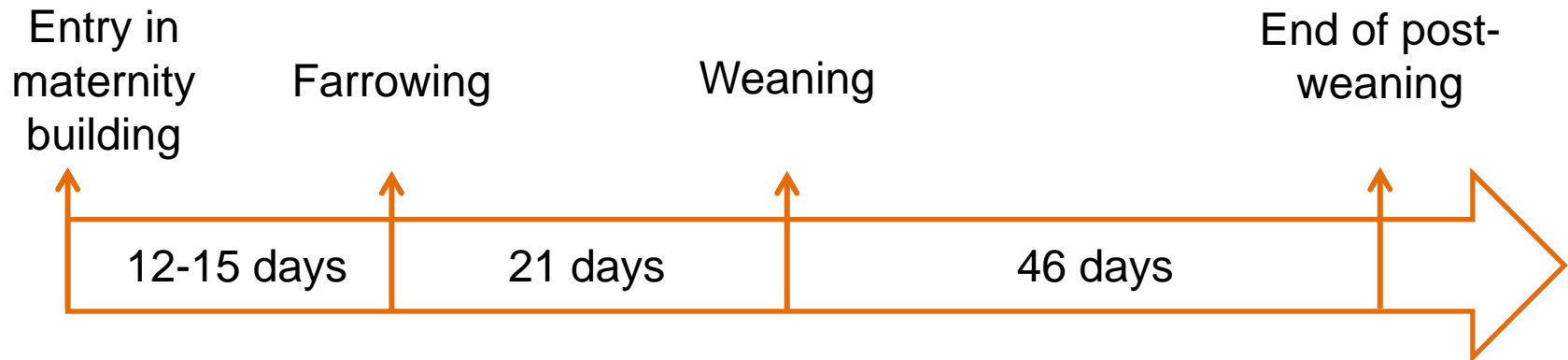


Context of the study

- Fragile weaning management: mother & litter separation, building change, feed transition, ...
- Difficulties amplified by maternity management: milk quantity but also milk quality.
- Recent publications on endotoxins impact on animals performances and transfer from the mother to the litter through the milk.
- Endotoxins are powerful antigens responsible for inflammatory process: loss in « efficient » energy.

Material and methods

- Partnership with sows herd of an agricultural school (LE NIVOT, France)
- 3 batches of sows (77) and their piglets (624) followed
- Feed without antibiotics nor acidifier



Material and methods

- 3 plant extracts coming from 2 plants
- Selected for their:
 - Anti-inflammatory properties
 - Anti-oxidant properties
 - Properties of intestinal motility modulation



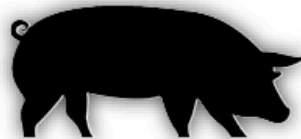
Source: Tie Cheng Yang, 2008
Zhang et al, 2005
Tsai et al, 2010
Bian et al, 2006

Experimental design

77 sows

Maternity

Control



Plant extracts



624 piglets

Post-weaning

Control



Control in maternity
Control in post-weaning

Plant extracts



Control in maternity
Plant extracts in post-weaning

Control



Plant extracts in maternity
Control in post-weaning

Plant extracts



Plant extracts in maternity
Plant extracts in post-weaning

Sows: plant extracts 15d before farrowing and during lactation
Piglets: plant extracts from 21 to 67d – Feed without antibiotics nor acidifiers

Measures

- Maternity: prolificacy data, feed intake, sow body condition, mortality,...
- Post-weaning: average daily gain (ADG), feed intake, feed conversion ratio (FCR), mortality,...



Results - Maternity

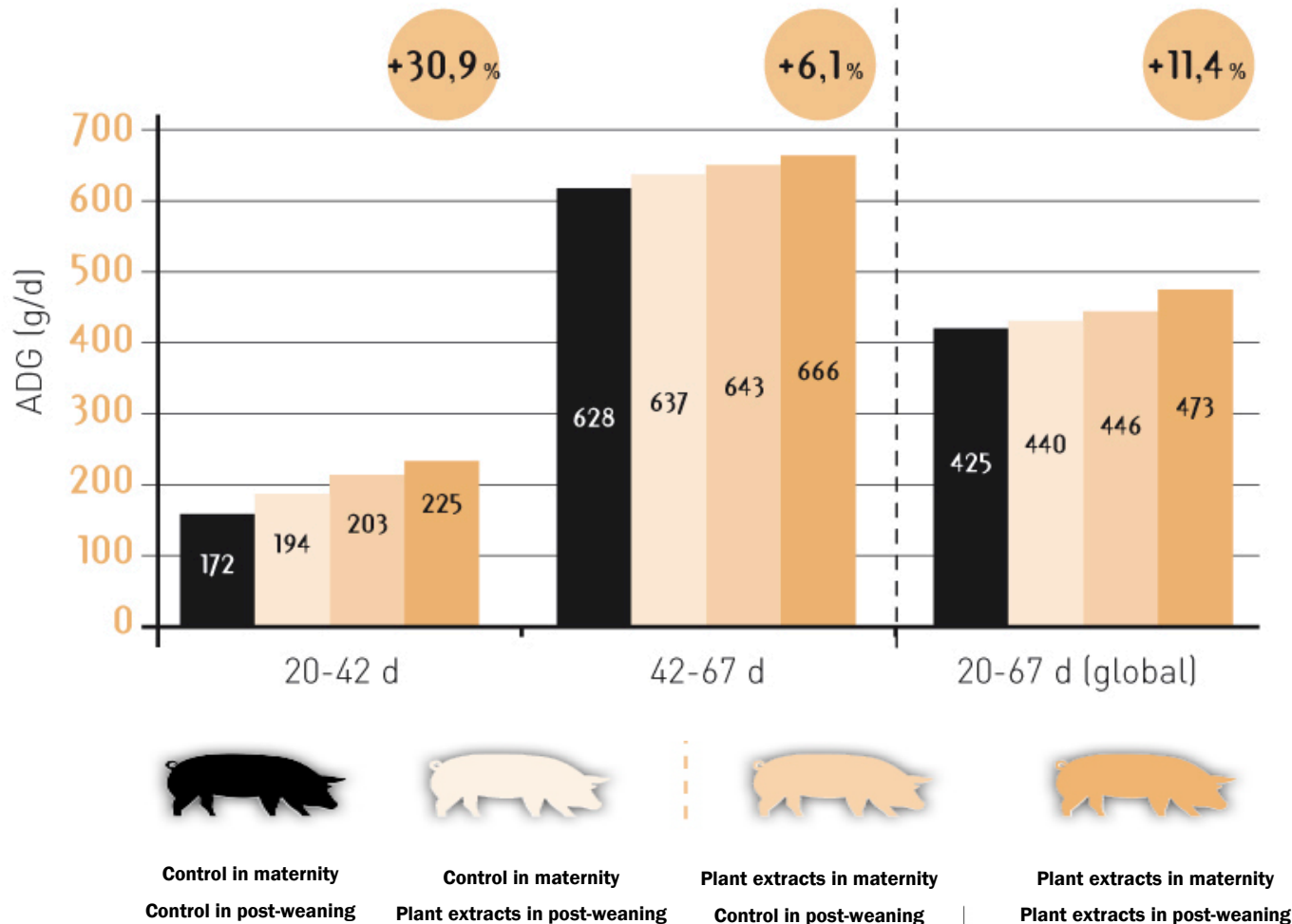
- Positive result on mortality between 48h after birth and weaning

Without plant extracts	With plant extracts
0.46 dead piglet	0.17 dead piglet
- 0.29 dead piglet with plant extracts	

- No impact of plant extracts on other parameters

Results – Post-weaning

ADG of piglets from sows fed with or without plant extracts



Results – Post-weaning

	Without plant extracts (no mater. no PW)	With plant extracts (mater .+ PW)	Difference
Live weight 67d (kg)	27.29	29.44	+ 2.15 kg per piglet
Daily feed intake (g/d)	687	735	+ 7 %
Feed conversion ratio	1.62	1.55	- 4.3 %

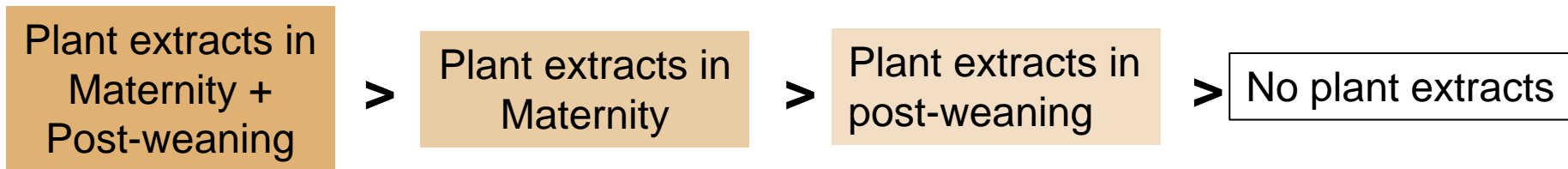


Control in maternity
Control in post-weaning



Plant extracts in maternity
Plant extracts in post-weaning

- Distribution of plant extracts improved performance:



- Great impact of sows supplementation
- But, even when only used in post-weaning, plant extracts can improve performance compared to control

Discussion

- Strong impact of sows supplementation on piglets performance → interest to avoid metabolic stress for better performance
- Management of inflammatory process in sows → less endotoxins transferred to piglets → more energy available for growth + better feed conversion (hypothesis)
- Interest of plant extracts in maternity: milk quality → less mortality before weaning



Conclusion and perspectives

- Combination of plant extracts evaluated as valuable (3 batches):
 - To reduce piglets mortality before weaning
 - To improve performance after weaning
- Plant extracts can be part of a demedication approach, beginning from maternity period
- In the future, test the interest of such a combination on the whole gestation? To find blood markers to make the link between zootechnical results and described properties of the product.



Thank you for your attention!

