The efficacy of the emulsifier DiNAMIC® in growing pigs diets

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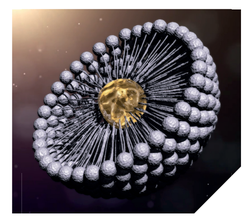
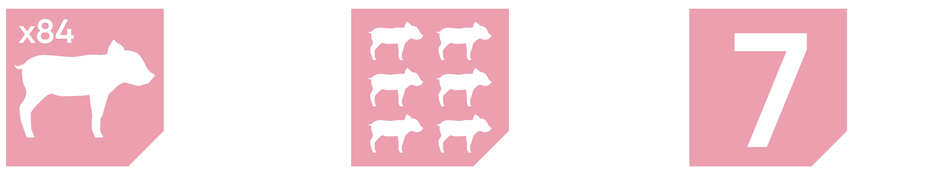
Introduction

DiNAMIC® is a specific mix of lysophospholipids. In the gastro-intestinal tract, DiNAMIC® behaves as a classic bio-surfactant, breaking down the fats into more digestible emulsions. The size of the DiNAMIC® molecule enables very small liposomes to form and these can carry a payload of fat and other nutrients across the gut villi membranes.



Methodology

This study investigated the effects of the addition of DiNAMIC® in the grower ration offered to 84 pigs from 7-10 weeks of age where oil inclusion is lower than in creep and link rations offered from 4-7 weeks of age.



84 pigs | **6 pigs per group** | **7 replicates per treatment Balanced for weight, gender and sire**

*Pigs were weighed at weaning (4 weeks of age), 7 weeks and 10 weeks of age.

Treatments

Table 1 – Trial Treatments

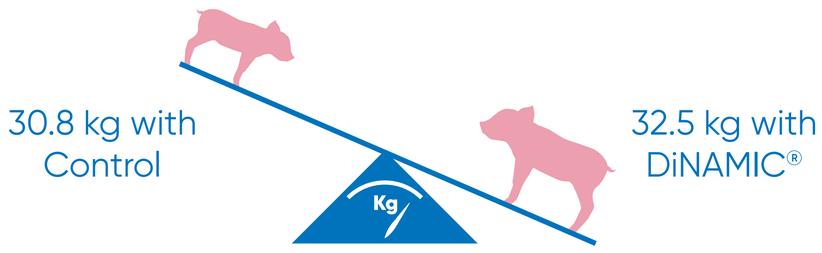
	Control	DiNAMIC®
Creep	1.62% Lys, 15.8DE MJ/kg	1.62% Lys, 15.8DE MJ/kg
Link	1.50% Lys, 15.4DE MJ/kg	1.50% Lys, 15.4DE MJ/kg
Grower	1.25% lys, 14.6DE MJ/kg	1.25% lys, 14.6DE MJ/kg + DiNAMIC®

Results

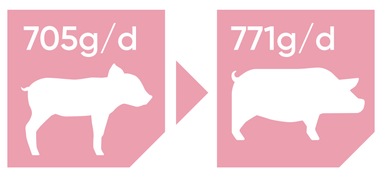
Table 2 – The influence of DiNAMIC® inclusion in the grower ration offered from 7-10 weeks of age.

	Control	DiNAMIC®	SEM	Sig.
Weight * (kg)				P value
4 weeks	9.0	9.1	0.034	NS
7 weeks	16.0	16.3	1.267	NS
10 weeks	**30.8**	**32.5**	**0.558**	**<0.05**
Feed Intake (g/d) 7-10 weeks	1070	1059	12.22	NS
Growth (g/d) 7-10 weeks	**705**	**771**	**10.87**	**<0.05**
FCR (g/d) 7-10 weeks	**1.52**	**1.37**	**0.013**	**<0.05**

*Pigs were weighed at weaning (4 weeks of age), 7 weeks and 10 weeks of age

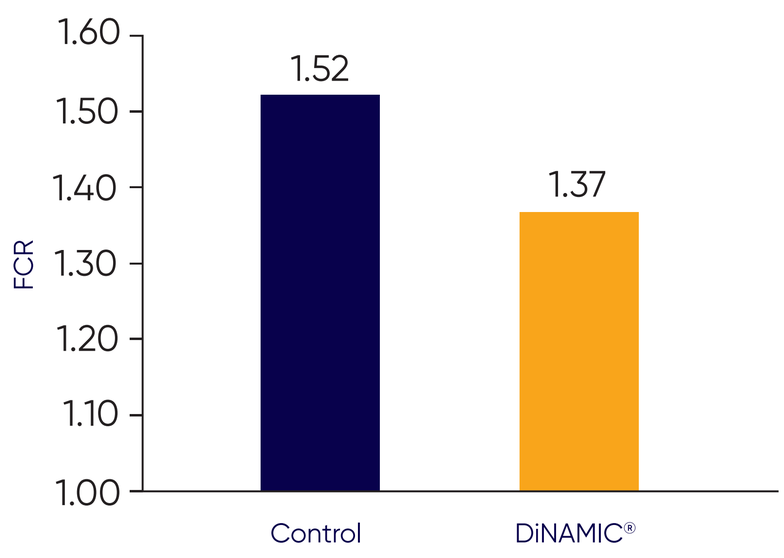


DiNAMIC® significantly (P <0.05) increased 10 week weight



DiNAMIC® significantly (P <0.05) increased growth rate

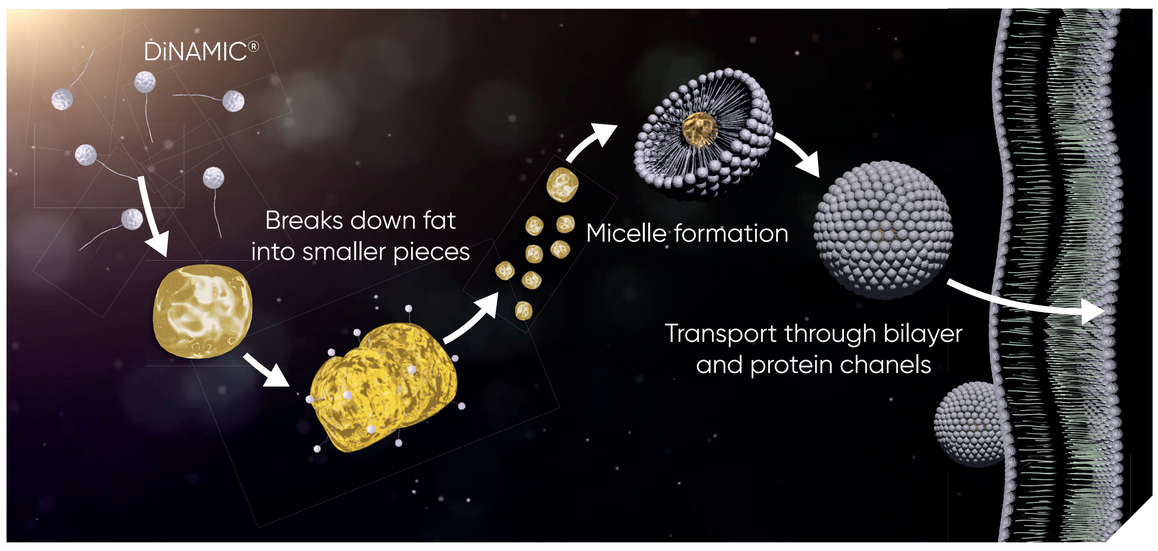
No significant differences were observed in the 4–7-week period as expected. DiNAMIC® inclusion in the grower ration offered from 7-10 weeks of age had no effect on feed intake but significantly improved weight (32.5kg vs 30.8kg) growth rate (771g/d vs 705g/d) and FCR (1.37 vs 1.52) as hypothesised.



DiNAMIC® significantly (P <0.05) improved FCR

Discussion

The emulsification effect of DiNAMIC® enables the energy from the fat in the diet to be utilised more effectively and efficiently hence improving the growth rate of the animal. Growth rate in the current trial was improved by 9.36%, with an improvement in FCR of 10.9%. The small micelles formed by DiNAMIC® interact with the membranes to result in better penetration into the bilayer. Optimising the dietary supply of specifc lysophospholipids increases the length of time transport channels can remain open, thus increasing absorption and digesta transport through the lumen.



Conclusions

This study demonstrates that DiNAMIC® inclusion assists in the digestion and absorption of nutrients, driving growth rate and feed efficiency when included in the grower ration.

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