63rd Annual Meeting EAAP
August 27th – 31th, 2012
Bratislava, Slovakia

The influence of live yeast on piglet growth performance, and nutrient utilization

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Introduction

- Piglet weaning at 3-4 weeks
- Stress and multiple handicaps (emotional, environmental, sanitary, immunity, nutritional, etc.)
- Post-weaning syndrome (low feed intake, body reserves depletion, growth reduction, diarrhoea, sensibility to pathogens, morbidity, mortality, etc.)
- Ban of utilisation of AGP since January 2006
- Research of AGP alternatives to overcome PW syndrome

Introduction

Saccharomyces cerevisiae Sc 47 yeasts or some of their extracts could be one alternative thanks to:

- Improvement of growth performance (Jurgens et al., 1997; van Heugten et al., 2003; Lizardo et al., 2009, 2012)
- Improvement of nutrient utilization (Lizardo et al., 2009, 2012)
- Maintenance of digestive microflora and exclusion of potential pathogenic bacteria (Jann, 1981; van Heugten et al., 2003)
- Stimulation of immunity (Davis et al., 2004)
- Reduction of morbidity and mortality

However, some other studies did not show any benefit

(Kornegay et al., 1995; Le Mieux et al., 2003)

Objectives

Study the inclusion level of live yeast *Saccharomyces cerevisae Sc47* (Actisaf®, LFA, France) in diets for piglets after weaning and observe their influence on:

- Growth performance
- Feed efficacy
- Nutrient digestibility

Material & Methods (1)

Performance trial :

- 4 experimental treatments
  - T1: Control diet
  - T2: 0.1g/kg of live yeast ($5x10^8$ cfu/kg feed)
  - T3: 0.5g/kg of live yeast ($2.5x10^9$ cfu/kg feed)
  - T4: 1.0g/kg of live yeast ($5x10^9$ cfu/kg feed)
- 128 LR*Du male piglets, 3-4 weeks, 6.8 kg BW
- 8 blocks BW, 32 pens, 4 pigs / pen
- BW, ADWG, ADFI, FCR

Material & Methods (2)

Diets (mash)	Pre-starter	Starter	Pre-Grower
Ingredients, %			
Cereals (corn, barley, wheat)	44.0	54.0	59.0
SBM 48, full-fat soya	28.3	22.0	25.2
Wheat bran, SBeet pulp	5.0	6.0	7.4
Chemical analysis			
ME, Mcal/kg	3.30	3.28	3.25
LYS std. dig., %	1.33	1.15	1.15
CP, %	20.7	18.4	19.5
NDF, %	10.8	12.0	14.0
P dig., %	4.2	4.0	3.8

Material & Methods (3)

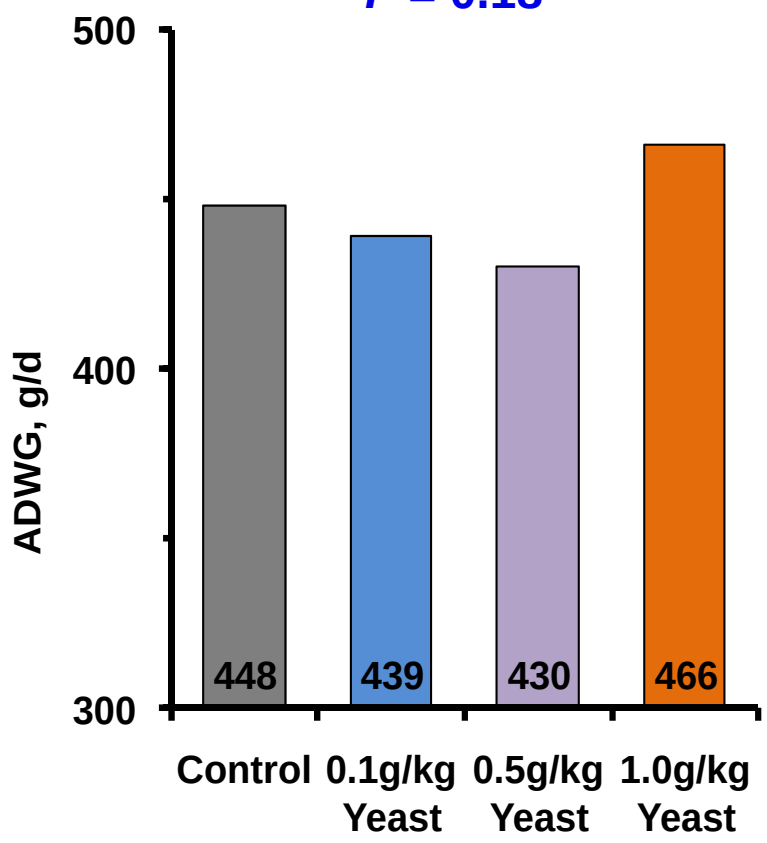
Digestibility trial :

- The same 4 treatments
- Feeds with 1% celite (HCl-insoluble ash)
- Fresh faeces collection per pen
- 3-d adaptation and 2-d collection
- Lab analysis of feeds and faeces nutrient contents
  (DM, CP, GE, Fat, ash, CF, NDF, ADF, ADL, HCl-insoluble ash)

Results : Overall growth performance

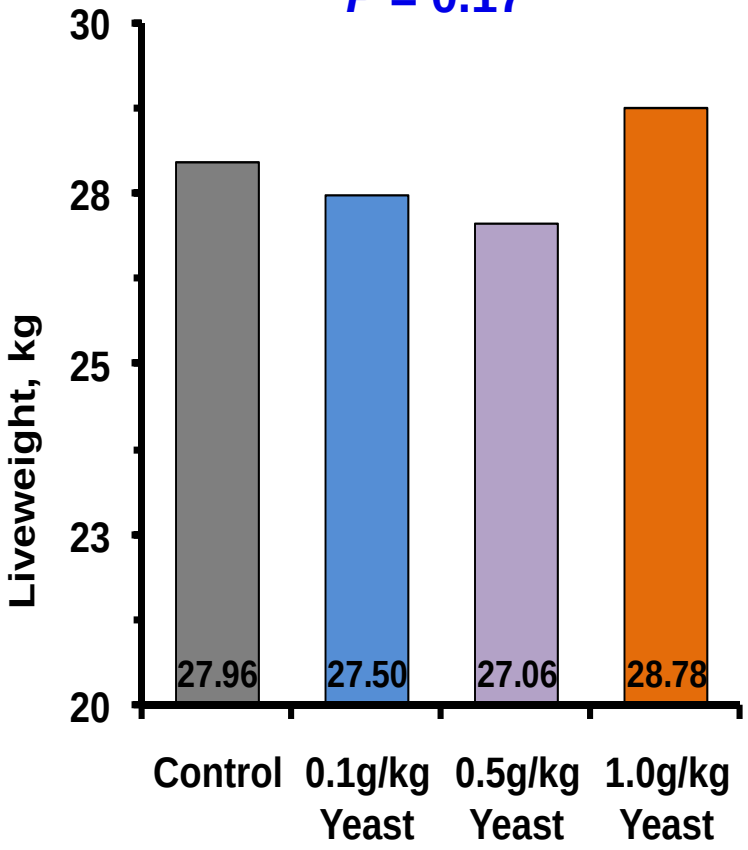
ADWG

P = 0.18



Final liveweight

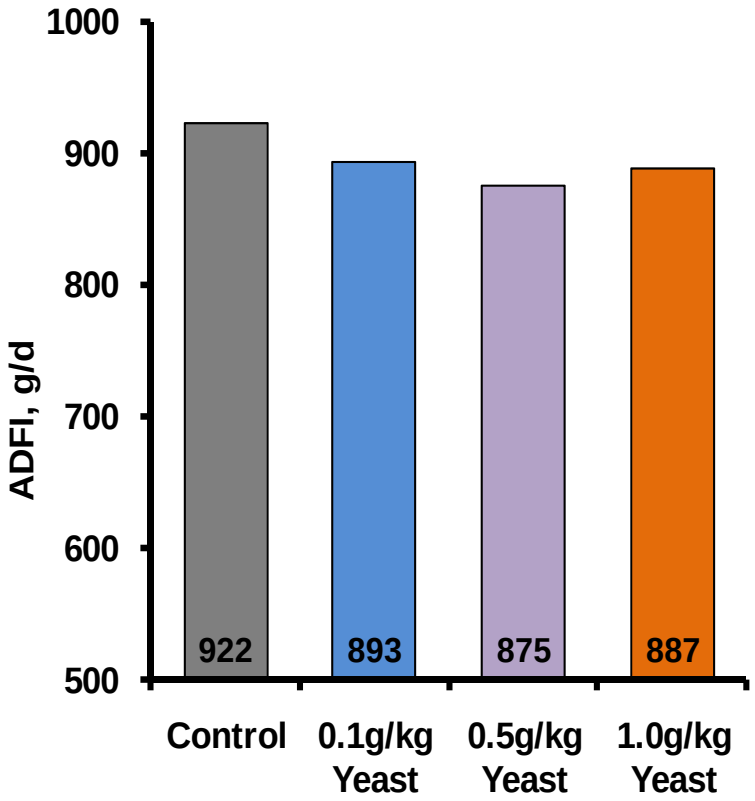
P = 0.17



Results : Overall feed efficacy

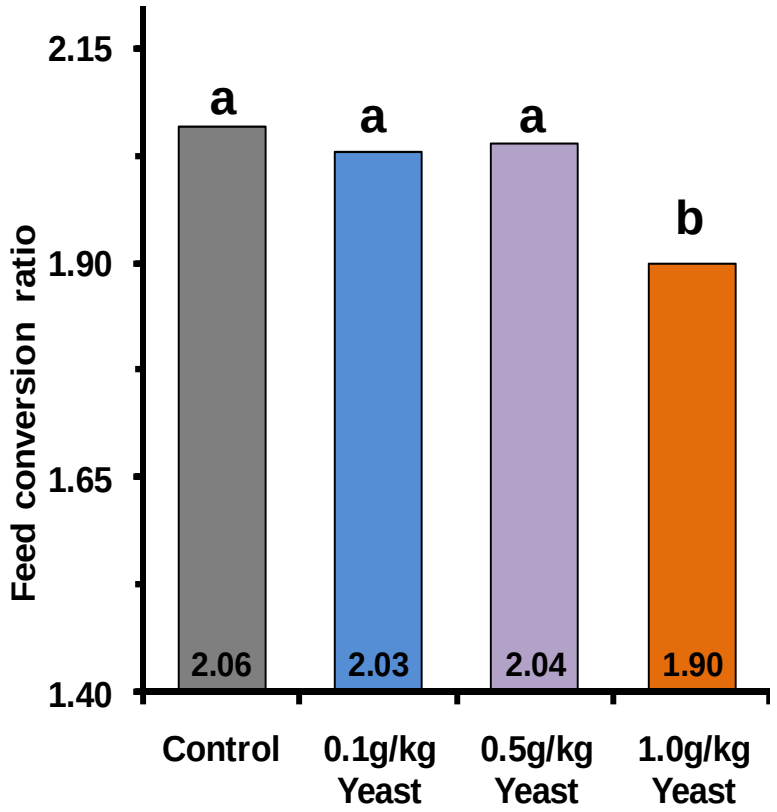
ADFI

NS



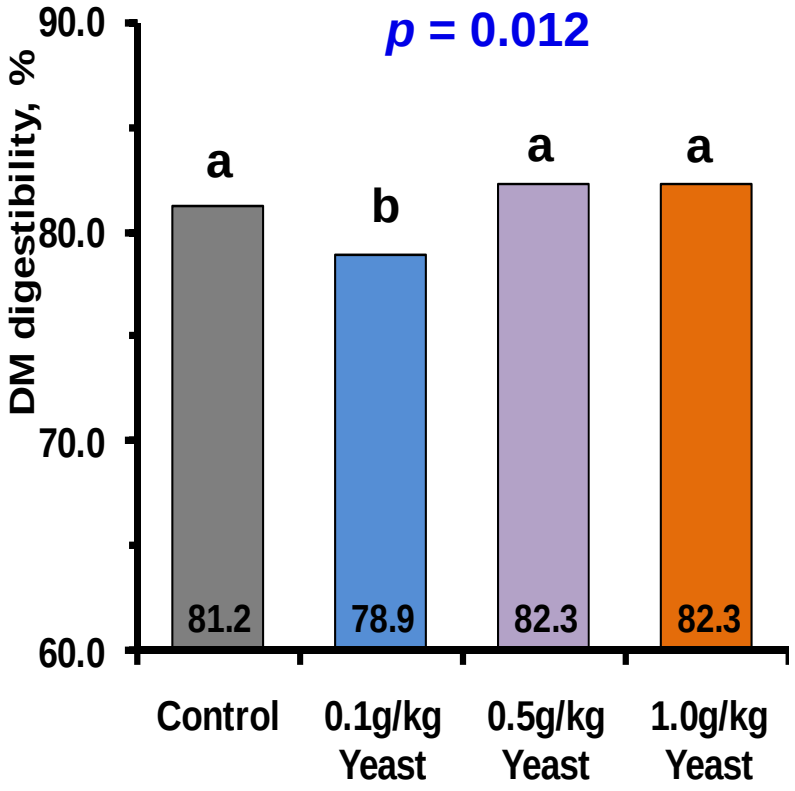
FCR

P = 0.02

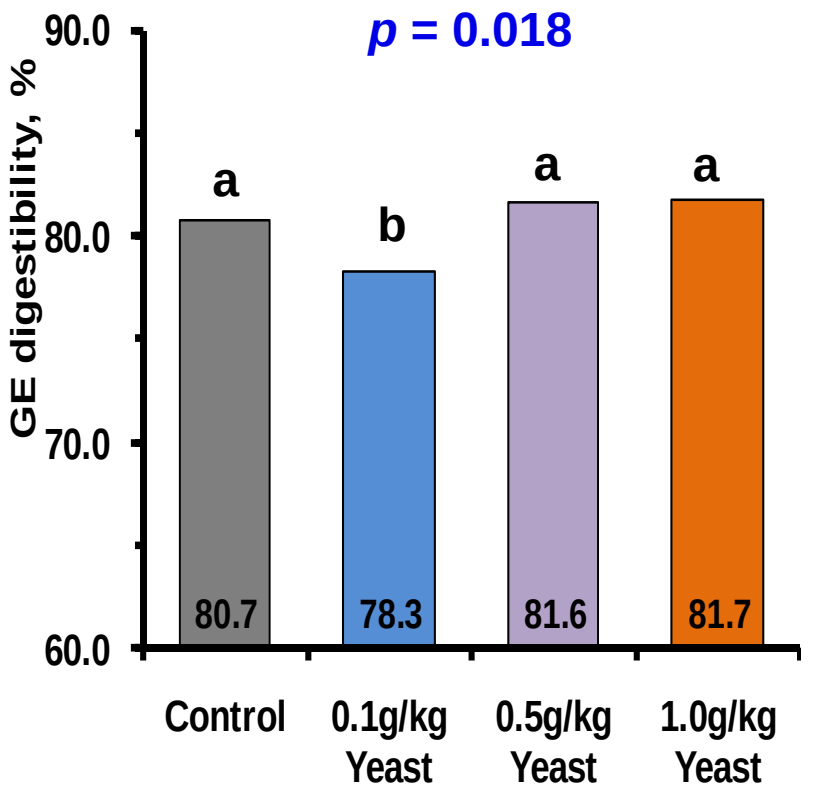


Results : Faecal digestibility

Dry matter

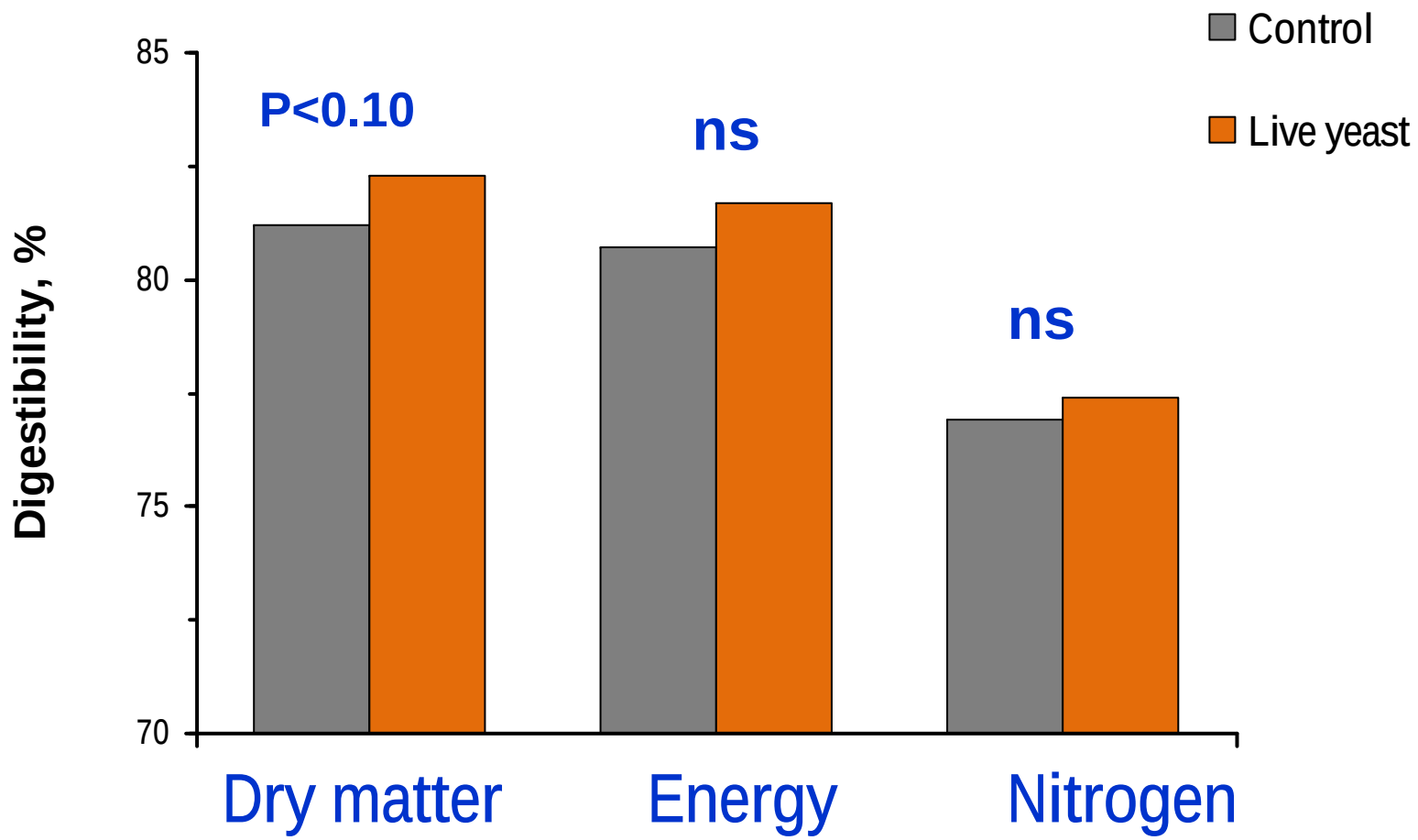


Energy



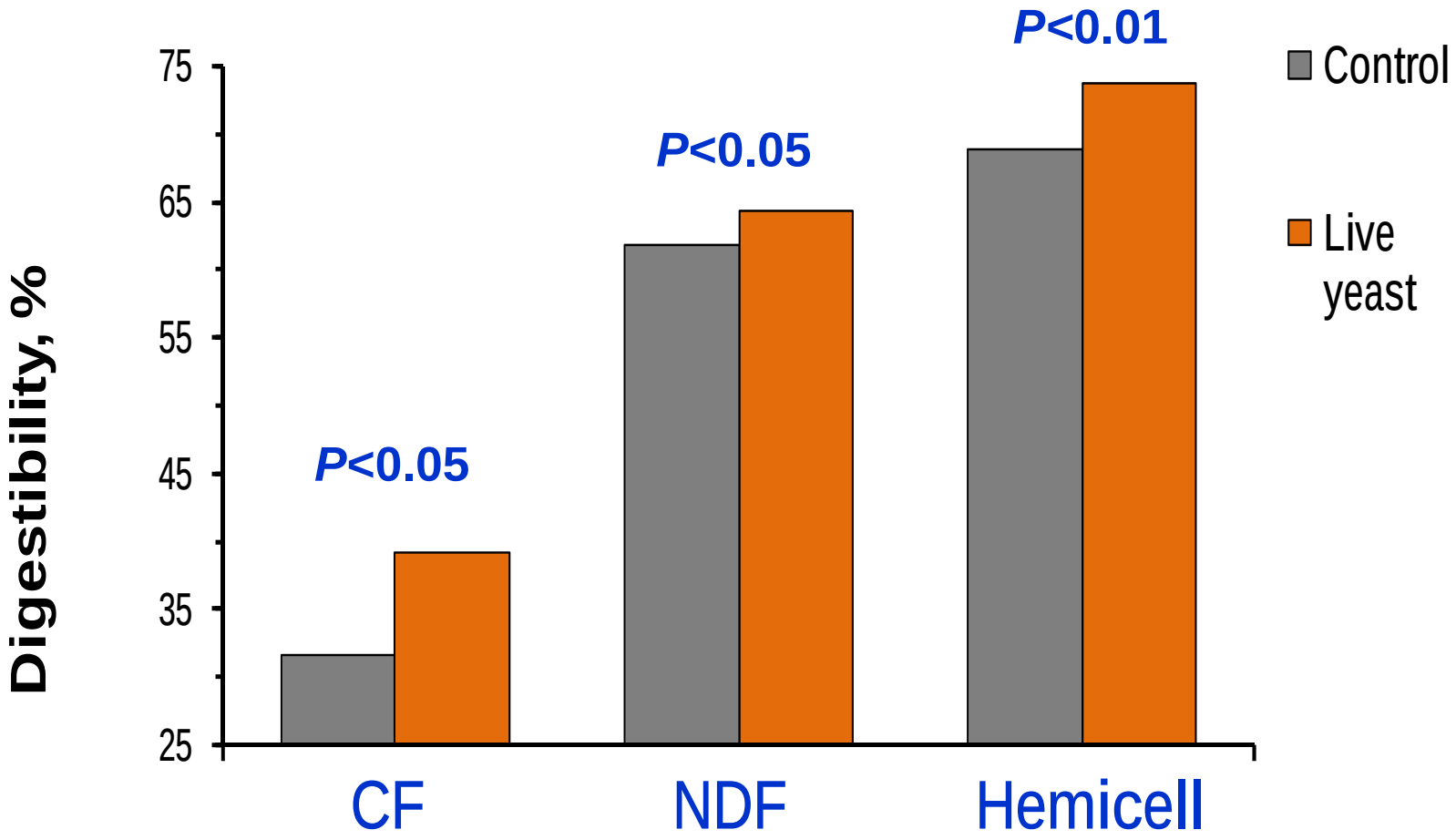
Results : Faecal digestibility

(contrast T1 *vs* T4)



Results : Faecal digestibility

(contrast T1*vs*T4)



Conclusion

Inclusion of *Saccharomyces cerevisae* Sc 47 yeasts seems to have positive effects on :

- ✓ Production parameters (ADWG, FCR)
- ✓ Fibre digestibility (DM, NDF, HmCell, CF)

In the range of CFU tested, animal response seems dose depending, and $5x10^9$ cfu/kg of feed is the best dosage

Those results agree with others obtained previously, therefore, utilization of live yeast in diets for piglets after weaning can be recommended.

Thank you very much for your attention

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