

Effect of NuPro® on performance of weaned piglets

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Objective

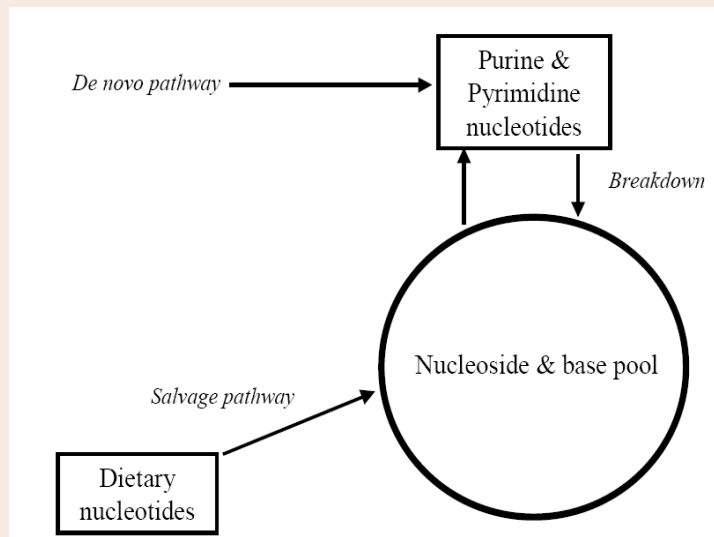


To evaluate the effect a yeast extract on performance and health of weaned piglets.

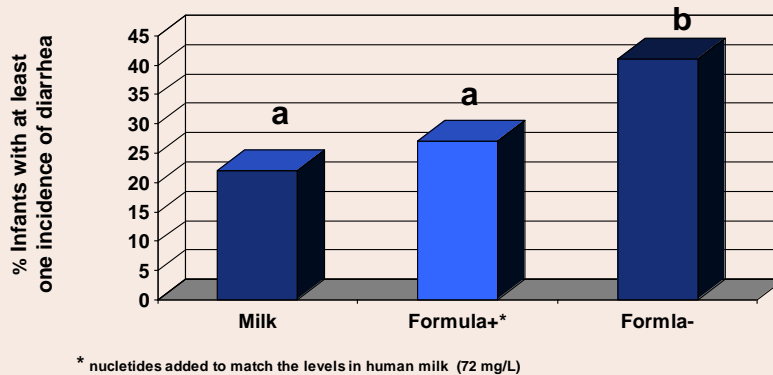
Yeast extract (Nupro[®])

- **45% Crude protein**
Highly digestible and consistent protein source
- **Rich source of vitamins & minerals**
- **Rich source of glutamic acid, free amino acids**
Improves palatability, enterocyte development
- **5-7% Nucleotides**
Improves immunity & GIT development
- **Rich source of Inositol**

Nucleotid sources



Nucleotid in baby nutrition



Pickerling et al., Pediatrics 101: 242-249

Nucleotid (NuPro®) in aquaculture (common Carp)

	BWG (g)	FCR	Mortality (%)
Control group	49.9 ^a	1.84 ^a	4.10 ^a
Nupro 2%	54.2^b	1.76^b	4.07^a
Nupro 4%	55.8^b	1.73^b	3.97^a

Staykov et al., 2007

Experimental Design I



2 x 2 x 3 factorial design

- diet (control and Nupro[®])
- sex (boar and gilt)
- weight band (light, medium, heavy)

36 pens (5 piglets each)

210 piglets

- average weight = 8.27 kg)
- assigned by body weight
- Sex

Experimental Design II



Duration

- 4 weeks

Diets

- Isocaloric and iso-nitrogenic
- 1st stage: 15.2 MJ DE, 21.5 % CP, 1.70 % lysine
- 2nd stage: 15.0 MJ DE, 21.0 % CP, 1.60 % lysine.

Treatment

- Nupro was included at 2.0 % and did replace 2.0 % fish meal (adjustment of RP over soy).

Experimental Design III



Parameters

- Feed intake
- body weight
- FCR
- Mortality
- Fecal score
- Treatment

Data analysis



- Data were analyzed as a 2x2x3 factorial design by ANOVA
- Means were separated by the test of Tukey-Kramer
- Health scores were analyzed by non parametric test



Overall performance (boars vs gilts)



Paramters	Gilts	Boars	SE	P
Gain, g	435	413	9.29	0.11
Intake, g	575	536	2.2	0.05
FCR	1.32	1.30	0.03	0.31

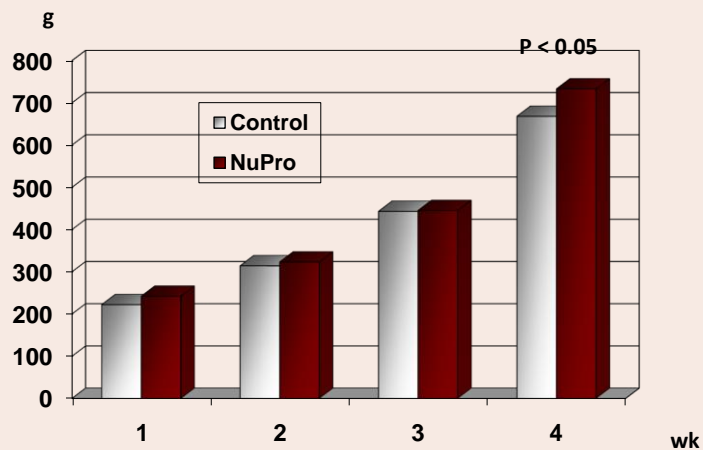
Gain: wk 3
Intake: wk 1
FCR:

Overall performance of weaning piglets in week 1-4

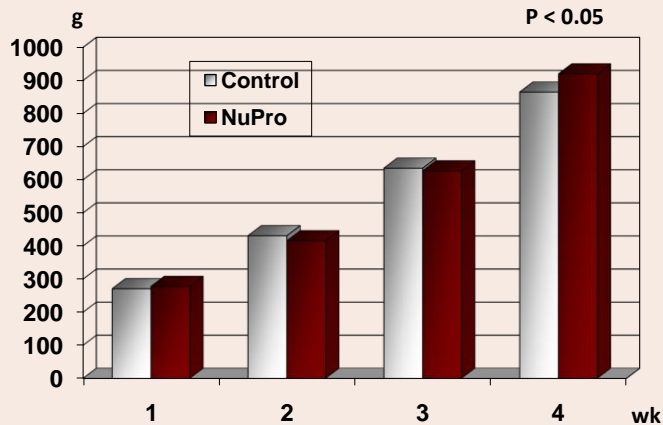


Paramters	Control	Nupro	SE	P
Gain, g	412	435	9.29	0.08
Intake, g	551	560	2.2	0.19
FCR	1.33	1.29	0.03	0.09

Development of weight gain



Development on feed intake



Overall performance weaning to Sale



	Pig sold	Av L.Wt.G	Days to Sale	DLWG	P ₂
Control	84	99.75	150.79	661g	10.99
Nupro	85	100.37	150.34	668g	11.11
Difference	+1	+0.62	-0.45	+7g	+0.12

Effect of weaning weight on the performance of piglets fed NuPro (N) compared with control-fed (C) animals



	Weaning weight (kg)							
	Light		Medium		High		Overall	
	C	N	C	N	C	N	C	N
Weaning wt (kg)	7.14	7.13	8.36	8.37	9.30	9.34	8.27	8.28
Feed intake (g/d)	513	555	544	550	596	577	551	561
Growth rate (g/d)	410	449	411	423	416	436	412	436
Feed:Gain (g/g)	1.24	1.23	1.32	1.30	1.43	1.32	1.33	1.29

CV of weekyl weight



Week	Control	Nupro
Start of experiment	11.80%	11.88%
Week 1	11.22%	11.18%
Week 2	12.99%	13.43%
Week 3	18.30%	15.13%
Week 4	17.81%	13.85%

Conclusions



- Overall performance was in the range of good commercial values.
- There was a strong trend (weight gain, $P=0.08$, FCR, $P=0.09$) to improve performance with NuPro®.
- NuPro® improved uniformity.
- NuPro® is a sustainable protein source which improves piglet performance.