

## Syncra® SWI improves performance in grower pigs (~25-53 kg) when added to a corn based diet containing by-products

### Benefits in grower diets

The combined enzyme and probiotic mode of actions of Syncra® SWI provide more available nutrients than single component additives and a better balanced gut microbiota. As a result, Syncra® SWI when compared to the unsupplemented control:

- improves net benefit per pig by \$1.28
- improves FCR by 12 points (5.0%)
- improves bodyweight gain by 5.1%

### Design

Number: 64 | Type: (Yorkshire x Landrace) x Duroc | Sex: mixed  
 Replicate pens per treatment: 8 | Per pen: 4 pigs  
 Diet: corn | Form: pellet | Treatments: 2  
 Trial length: ~25-53 kgs (42 days)

### Treatment

- Control
- Control + Syncra® SWI<sup>1</sup>

See appendix for detailed breakdown

### Trial site

Dankook University, South Korea

<sup>1</sup> Syncra® SWI provides 5000 U protease/kg feed and 150,000 CFU/g feed of swine *Bacillus* DFM

### Results for Syncra® SWI



#### FCR 25-53 kg

Control	2.41 <sup>b</sup>	
Syncra® SWI	2.29 <sup>a</sup>	5.0%

#### BODYWEIGHT GAIN g/day, 25-53 kg

Control	647 <sup>a</sup>	
Syncra® SWI	680 <sup>b</sup>	5.1%

<sup>ab</sup> Values without a common superscript are significantly different (P<0.05)

### What is Syncra® SWI

Exogenous protease increases hydrolysis of proteins including proteinaceous antinutrients (e.g. trypsin inhibitors) and improves protein digestibility<sup>(1,2,3)</sup>. *Bacillus sp.* probiotics are often used for pigs, and have been identified as potent producers of extracellular degrading enzymes which may be provided to the animal *in situ* to also aid nutrient digestion and utilisation<sup>(4,5,7)</sup>. The combined effects of protease and this three strain *Bacillus sp.* probiotic, via increased nutrient digestibility, can lead to improved performance parameters such as increased bodyweight gain and nutrient utilisation<sup>(6,8,9)</sup>.

## Summary

A trial was conducted to evaluate the effects of Syncra® SWI on the performance of 64 (Yorkshire x Landrace) x Duroc grower pigs (~25 kg) fed corn based diets containing by-products (see appendix: detailed trial design).

During phase 1 (25-38 kg) and phase 2 (38-53 kg) the addition of Syncra® SWI significantly ( $P<0.05$ ) improved bodyweight gain by 6.1% and 4.6% respectively and FCR by 15 points (6.6%) and 11 points (4.3%) respectively.

Overall (25-53 kg) Syncra® SWI significantly ( $P<0.05$ ) improved the bodyweight gain by 5.1% and the FCR was significantly ( $P<0.05$ ) improved by 12 points (5.0%). Net benefit per pig was improved with the inclusion of Syncra® SWI by \$1.28.

**Conclusion:** Syncra® SWI improves the performance of grower pigs when added to nutritionally adequate diets providing improved net benefits per pig.

## Keywords

Syncra® SWI, *bacillus*, bioefficacy, corn, pellet, performance, pigs, protease, swine

## References

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## APPENDIX

### Detailed trial design

64 (Yorkshire x Landrace) x Duroc grower pigs (~25 kg) were randomly assigned to 2 dietary treatments according to initial bodyweight with 8 replicate pens per treatment and 4 pigs per pen (2 gilts and 2 barrows). The control diet was formulated to meet or exceed the nutrient requirements (excluding energy which was formulated to meet the minimum requirement of 3200 kcal/kg\*) and was fed unsupplemented or supplemented with Synkra® SWI (to provide 5000 U protease/kg and 150,000 CFU/g swine *Bacillus* DFM). The control diet was also supplemented with 500 FTU/kg of Aextra® PHY. All diets were corn based, pelleted and fed *ad libitum*. Bodyweight and feed consumption were measured weekly and feed conversion ratios and bodyweight gains were calculated.

Ingredients	Control (kg/t feed)
Corn	556
Wheat feed	111
Corn DDGS	50.0
Soybean meal 46%CP	191
Rapeseed meal	20.0
Cottonseed meal, ext.	50.0
DL-methionine	0.50
L-threonine	0.50
Digestibility marker	3.00
Biolys 60	2.50
Bentonite	5.00
Sodium bicarbonate	1.00
Salt	3.00
Limestone	7.20
Dicalcium phosphate	4.20
Choline chloride 50%	0.50
Pig Vits/TE's	5.00
Calculated analysis	
Crude protein (%)	20.8
DE kcal/kg (MJ/kg)	3203 (13.4)
NE kcal/kg (MJ/kg)	2184 (9.14)
Lysine (%)	1.11
Digestible lysine (%)	0.93
Methionine (%)	0.36
Digestible methionine (%)	0.33
Methionine + cysteine (%)	0.71
Digestible methionine + cysteine (%)	0.57

Aextra® PHY was included in the diets at 500 FTU/kg

\*As denoted by Danisco Animal Nutrition's Great China technical team

**Results:** Performance (25-53 kg)

	Control	Control + Synkra® SWI
<b>Grower 1 (25-38 kg)</b>		
Bodyweight gain (g/day)	578 <sup>a</sup>	613 <sup>b</sup>
Feed intake (g/day)	1305	1292
FCR	2.26 <sup>b</sup>	2.11 <sup>a</sup>
<b>Grower 2 (38-53 kg)</b>		
Bodyweight gain (g/day)	719 <sup>a</sup>	752 <sup>b</sup>
Feed intake (g/day)	1820	1816
FCR	2.53 <sup>b</sup>	2.42 <sup>a</sup>
<b>Overall (25-53 kg)</b>		
Bodyweight gain (g/day)	647 <sup>a</sup>	680 <sup>b</sup>
Feed intake (g/day)	1562	1554
FCR	2.41 <sup>b</sup>	2.29 <sup>a</sup>
Net benefit/pig (\$)	-	1.28

<sup>a,b</sup> Values without a common superscript are significantly different (P<0.05)