A study on the application of enteric micro-capsulized benzoic acid replacing AGPs in swine feed.

X. F. Peng (1), Z.H. Qin (1), J.H. QIN (1) & G.Y. Fan (1) *

(1)Guangzhou Insighter Biotechnology Co., Ltd., Guangzhou, Guangdong, China
*E-mail: gyfan@FeedAdditive.com

Insighter® 英赛特
— 解决肠道问题
— *Solutions of Gut Problems*

Introduction

This is the first report on Superstin-ER™ (containing 70% benzoic acid), an enteric micro-capsulized product developed by Insighter®. While achieving targeted release in animals' intestines, Superstin-ER™ does not agglomerate or sublime, and overcomes the foul odour and taste. In pig farming, Superstin-ER can effectively reduce diarrhea rate in piglets, improve their feed intake and production performance and proves to be a safe and efficacious alternative to AGPs.

1. Rearing Trial Subjects and Methods

120 25-day-old weaned piglets were randomly grouped and reared according to table 1

Table 1: Grouping and Rearing Trials

	Group 1 (Control)	Group 2 (AGPs Group)	Group 3 (0.2% Dosage)	Group 4 (0.3% Dosage)
Basal Diet	Basal Diet	Basal Diet	Basal Diet	Basal Diet
Zinc Oxide (mg/kg)	3000	3000	3000	3000
Colistin Sulphate (mg/kg)	—	20	—	—
CTC (mg/kg)	—	75	—	—
Superstin ER (mg/kg)	—	—	2000	3000

2. Result

Table 2 indicates: addition of Superstin-ER increases the piglets' feed intake and daily weight gain while decreasing the FCR; 0.3% Dosage Group delivers the best performance.

Table 2: Effect of Benzoic Acid added into feed on the growth performance of weaned piglets.

	Group 1 (Control)	Group 2 (AGPs Group)	Group 3 (0.2% Dosage)	Group 4 (0.3% Dosage)
Initial Body Weight (kg)	7. 19 ± 0. 36	6.54 ± 0. 39	6.75 ± 0. 20	6.87 ± 0. 27
Final Body Weight (kg)	19.88± 0.99	20.49 ± 1. 23	21.60 ± 0.65	23. 37 ± 0.93
Total Weight Gain (kg)	12.69 ± 0.63	14.25 ± 0.84	14. 85 ± 0.45	15.60 ± 0.66
Feed Intake (kg)	19.41 ± 0.97	21. 03 ± 1. 26	21. 45 ± 0.64	21. 60 ± 0.86
Average Daily Intake (kg)	0. 65 ± 0. 03a	0. 70 ± 0. 04b	0. 72 ± 0. 02b	0. 72 ± 0. 03b
Average DWG (kg)	0. 42 ± 0. 02a	0. 47 ± 0. 03b	0. 50 ± 0. 01c	0. 55 ± 0. 02d
FCR	1. 53 ± 0. 08a	1. 48 ± 0. 09b	1. 44 ± 0. 04c	1. 38 ± 0. 05d

Table 3 shows that addition of benzoic acid can reduce the diarrheal rate and mortality rate of weaned piglets.

Table 3: Effect of Benzoic Acid added into feed on the diarrheal rate of weaning piglets

	Group 1 (Control)	Group 2 (AGPs Group)	Group 3 (0.2% Dosage)	Group 4 (0.3% Dosage)
Diarrheal Rate（%）	18. 19 ± 0. 85a	13.20 ± 0. 78b	8.75 ± 0. 24c	2.87 ± 0. 08d
Mortality Rate（%）	7.88± 0.35a	4.49 ± 0.24b	3.60 ± 0.09b	2. 37 ± 0.08c

3. Conclusion

Under the conditions of this rearing trial, addition of 2000 mg /kg and 3000mg/kg of Superstin-ER™ (benzoic acid) in diet can improve the growth performance of weaned piglets and reduce their diarrhea rate; The dosage of 3000 mg/kg benzoic acid exerts the best effect.