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benzoic acid

PROVEN TRACK RECORD

Innovation That Improves Growth Performance In Today's U.S. Post-Weaning Nursery Diets

NUTRITION · HEALTH · SUSTAINABLE LIVING

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BRIGHT SCIENCE. BRIGHTER LIVING.

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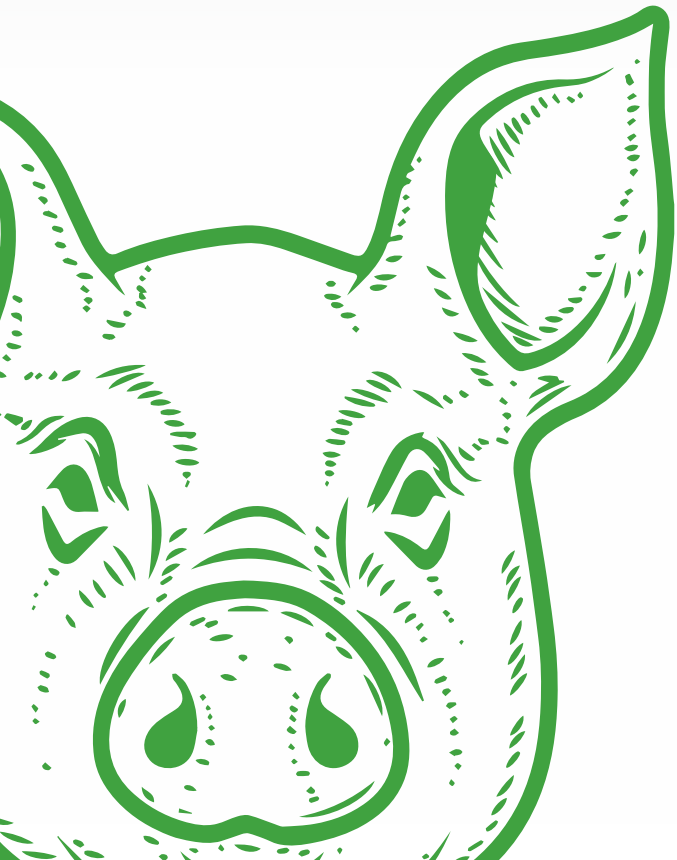
Feed acidifiers — a proven approach to improving young pig performance

For decades, most swine feeding programs have utilized a dietary acidifier in the initial diets, post weaning to help improve animal performance. Acidifiers lower the pH of the feed, which aids in nutrient digestibility. Research has shown that by including acidifiers in diets, producers can:

- Increase average daily gain (ADG)
- Increase average daily feed intake (ADFI)
- Improve feed conversion

Benzoic acid, a well-established acidifier in the swine industry, helps lower the pH of the feed. And it's proven to be more effective than other common acidifiers (organic acids) in the areas that impact animal performance the most, such as:

- Reducing pH of the digesta in the GI tract
- Lowering the pH of the urine
- Improving nutrient digestibility



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For swine nutritionists and veterinarians seeking more effective solutions to improve nursery pig performance, VevoVitall is an ultra-pure form of benzoic acid that when used as a feed acidifier more effectively supports nutrient digestibility resulting in improved post-weaning growth rates.

Photo courtesy of National Pork Board and the Pork Checkoff. Des Moines, Iowa USA.

Objective

Determine the effect of VevoVitall on growth performance of nursery pigs fed varying diets, under varying environmental conditions within commercial and university facilities.

Background

- Five, 28-day nursery-pig trials
  - Three trials in university settings, n=800
  - Two trials in commercial research facilities, n= 3,528

VevoVitall improves growth performance in today's U.S. nursery diets — five-trial meta-analysis[1]

Key Points

- Nursery pigs fed diets with VevoVitall had significantly increased ADG by 5% and improved feed conversion (FCR) by 3% from day 0 to 14
- U.S. trial results support similar findings in more than a dozen global studies in nursery pigs, with a 5% to 15% improvement in ADG and a 2% to 5% improvement in FCR, day 0 to 14 or 28

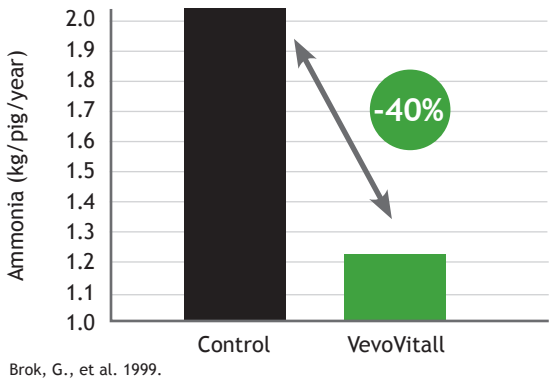
Five-trial meta-analysis on growth performance of nursery pigs[1]

	Benzoic acid, %		Probability, P <
	0, Control	0.5	Benzoic acid
d 0 to 14			
ADG, lbs.	0.61	0.64	0.02
ADFI, lbs.	0.88	0.89	0.35
F/G	1.44	1.39	0.01
d 14 to 28			
ADG, lbs.	1.18	1.19	0.20
ADFI, lbs.	1.82	1.86	0.11
F/G	1.54	1.56	0.48

Environmental benefits – reduced ammonia emissions

Several studies support that acidifiers, like VevoVitall, can reduce the pH of urine, resulting in lower ammonia emissions and a healthier environment. Better air quality means more pleasant working conditions.

Effect of dietary VevoVitall on ammonia production[2]



Brok, G., et al. 1999.

Key Points

- VevoVitall is metabolized in the body and excreted predominantly as hippuric acid in the urine
- Hippuric acid reduces the pH of the urine, resulting in lower ammonia emissions and a healthier environment

EASY AND SAFE TO HANDLE

An ultra-pure source of food-grade benzoic acid, VevoVitall is fully traceable with low odor, low caking and low corrosivity compared to other organic acids.

Acidifiers also deliver performance in growing and finishing phases of production

In addition to nursery pigs, when acidifiers, like VevoVitall, are included in growing and finishing diets, global studies have shown a 3.5% improvement in ADG in growing pigs (30 studies) and a 2.7% improvement in finishers (nine studies).

Recommended inclusion rates

Weaned piglets	**up to 10 lbs. VevoVitall/ton complete feed**
Growing, finishing pigs	**up to 10 lbs. VevoVitall/ton complete feed**
Optimum ammonia control	**up to 10 lbs. VevoVitall/ton complete feed**

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[1] Nemechek, J. 2014. Effects of Pelleting and Dietary Fat and Fiber Levels on Pig Growth and Fat Quality (Doctoral Dissertation). Kansas State University, Manhattan, KS.
[2] Brok, G., et al. 1999. Urinary pH, ammonia emission and performance of growing/finishing pigs after the addition of a mixture of organic acids, mainly benzoic acid, to the feed. Research Institute for Pig Husbandry.

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