

# NEWtraStart™ Feed



## The Importance of Palatability and Wellness Nutrition

### Natural Performance and Preference Technology

NEWtraStart™ Technology is a phytogenic feed ingredient. Phytogenics (also referred to as nutraceuticals and botanicals) are a combination of natural plant-based feed ingredients. What differentiates NEWtraStart™ technology from other phytogenics is the combination of encapsulated essential oils with two other plant components.

#### Essential Oils

- ▶ Occur under the surface of many plants as signal substances and natural defense mechanism against fungi, bacteria and viruses.
- ▶ Consist of a large number of active substances, and the complex as a whole has many positive effects including organoleptic stimulation<sup>1</sup>.
- ▶ Are highly volatile. Therefore, the essential oils in NEWtraStart™ are encapsulated to ensure storage and heat stability.

#### Flavonoids

- ▶ Are a large group of plant pigments with many beneficial effects such as the regulation of cellular permeability, inhibition of inflammation mediators leading to anti-inflammatory, and antioxidant effects<sup>2</sup>.
- ▶ Their importance has led them to being named vitamin P (permeability)

#### Mucilages

- ▶ Occur mainly in plant seeds and contain carbohydrates that swell considerably when exposed to water.
- ▶ The mucilage in NEWtraStart™ was selected for its special carbohydrate structure, enabling it to form a protective layer on the mucosa<sup>3</sup>.

- ▶ A proprietary combination of natural plant-based feed ingredients designed for sows and pigs.
- ▶ Mix in the diet at 2.5 - 5 lbs/ton complete feed in gestation • 5 - 10 lbs/ton complete feed in lactation • 5 lbs/ton complete feed in nursery and grow-finish
- ▶ Available in 50 lb bags • Product Code # 1275150 (LMA5)

<sup>1</sup>W. Windisch, K. Schedle, C. Pletzner and A. Kroismayr, 2008. Use of phytogenic products as feed additives for swine and poultry. J Anim Sci 86: E140-E148.

<sup>2</sup>H.P. Kim, K.H. Son, H.W. Chang and S.S. Kang, 2004. Anti-inflammatory plant flavonoids and cellular action mechanisms. J.Pharmacol.Sci. 96, pp 229-245

<sup>3</sup>U.L. Hayden, S.M. McGuirk, S.E.H. West and H.V. Carey, 1998. Psyllium improves fecal consistency and prevents enhanced secretory responses in jejunal tissues of piglets infected with ETEC. Dig.Dis.Sci. 43:11, pp 2536-2541

Ask your local nutrition specialist for more information or visit [www.lolfeed.com](http://www.lolfeed.com) or [www.purinamills.com](http://www.purinamills.com)

## Land O'Lakes Purina Feed LLC

## NEWtraStart™ feed in Sows Potentially Increases Feed Intake, Weaning Weights and Numbers of Pigs per Litter

Research (2005–2009)	Criteria Measured	Control + Antibiotic	Control + NEWtraStart™	Difference
<ul style="list-style-type: none"> <li>LongView Animal Nutrition Center, MO, USA (3 Trial Summary)</li> </ul>	Litter Weight Gain, lb	69.7	77.5	+11.2%
	Weaning Weight, lb	14.6	16.0	+9.6%
	Pre-weaning Mortality, %	7.5	4.4	-41.3%
<ul style="list-style-type: none"> <li>Commercial Sow Trial in KS, USA</li> <li>108 sows/treatment</li> <li><sup>ab</sup>Values on same line with different superscripts differ, P&lt;0.07</li> <li>Control: 7.5 lb NEWtraStart/ ton feed (gestation)</li> <li>NEWtraStart : 7.5 lb NEWtraStart/ton feed (gestation &amp; lactation)</li> <li>Ref: TBVol4</li> </ul>	Stillborns/litter	1.56 <sup>a</sup>	0.72 <sup>b</sup>	-53.9%
	Litter Weight at Weaning, lb	134	138	+3%
	Litter Weight gain 24 hr post farrowing to weaning, lb	97.3	100.3	+3.1%
	Feed Intake over lactation (8-18d), lb/sow		+0.5 - 1.5 lb over control	

## NEWtraStart™ feed in Young Pigs Supports Gut Wellness, Increases Nutrient Utilization and Optimizes Growth Performance

Research (2000–2009)	Criteria Measured	Control	Control + NEWtraStart™	Difference
<ul style="list-style-type: none"> <li>Trial conducted at Dankook University, Korea</li> <li>Control diet contained antibiotics</li> </ul>	Immunity - IgG Levels, mg/ml	4.81	7.46	+55.1%
	Immunity - White Blood Cells, x 10 <sup>3</sup> /mm <sup>3</sup>	75.8	95.4	+25.9%
	Digestibility - Dry Matter, %	89.1	89.9	+0.9%
	Digestibility - Nitrogen, %	86.0	88.5	+2.9%
	Performance - Daily Weight Gain, lb	0.99	1.07	+8.1%
	Performance - Daily Feed Intake, lb	1.27	1.35	+6.3%
	Performance - Feed:Gain	1.29	1.26	-2.3%
<ul style="list-style-type: none"> <li>Commercial Nursery Trial in USA</li> <li>Twelve pens/ treatment with 22 pigs/ pen</li> <li>All diets contained antibiotics.</li> <li><sup>ab</sup>Values on same line with different superscripts differ, P&lt;0.05</li> <li>At the end of the 42-day trial, there were 41% fewer pigs weighing &lt; 40 lb &amp; 30% more &gt; 50 lb in the NEWtraStart group.</li> <li>Ref: TBVol9</li> </ul>	Initial Weight, lb	13.5	13.6	-
	Final Weight, lb	47.7 <sup>a</sup>	49.7 <sup>b</sup>	+2 lb
	Daily Weight Gain, lb	0.81 <sup>a</sup>	0.86 <sup>b</sup>	+6.2%
	Daily Feed Intake, lb	1.25 <sup>c</sup>	1.30 <sup>b</sup>	+4.0%
	Feed: Gain	1.55 <sup>a</sup>	1.51 <sup>b</sup>	-2.6%
<ul style="list-style-type: none"> <li>Commercial Nursery Trial in USA</li> <li>Eight pens/ treatment with 22 pigs/ pen</li> <li>All diets contained antibiotics.</li> <li><sup>ab</sup>Values on same line with different superscripts differ, P&lt;0.05</li> <li>Pigs fed NEWtraStart feed needed 2.1 lb less feed for 42 lb of gain</li> <li>Ref: LOL Trial No. FT 110N08</li> </ul>	Initial Weight, lb	12.9	12.9	-
	Final Weight, lb	55.2	55.8	+0.6 lb
	Daily Weight Gain, lb	0.99	1.00	+1.0%
	Daily Feed Intake, lb	1.34	1.31	-2.2%
	Feed: Gain	1.36 <sup>a</sup>	1.31 <sup>b</sup>	-3.7%
<ul style="list-style-type: none"> <li>Weighted average of eight 35-day trials conducted at LongView Animal Nutrition Center in MO, USA</li> <li>Control diets contained antibiotics.</li> <li>Pigs fed NEWtraStart needed 2 lb less feed for 40 lb of gain</li> </ul>	Initial Weight, lb	13.1	13.1	-
	Final Weight, lb	45.7	47.6	+1.9 lb
	Daily Weight Gain, lb	0.92	0.97	+5.4%
	Daily Feed Intake, lb	1.30	1.33	+2.3%
	Feed: Gain	1.40	1.35	-3.6%

## NEWtraStart™ feed in Grower-Finisher Pigs Optimizes Growth Performance

Research (2006–2009)	Criteria Measured	Control	Control + NEWtraStart™	Difference
<ul style="list-style-type: none"> <li>LongView Animal Nutrition Center in MO, USA</li> <li>Values are means of 24 individually penned pigs</li> <li>Initial weight 61.8 lb</li> <li>5 lb NEWtraStart per ton feed</li> <li>Ref: TBVol2</li> </ul>	Average Weight Gain, lb	203.2	211.3	+8.1 lb
	Daily Weight Gain, lb	2.22	2.30	+3.6%
	Daily Feed Intake, lb	5.23	5.37	+2.7%
	Feed: Gain	2.36	2.33	-1.3%
<ul style="list-style-type: none"> <li>Commercial Nursery Trial in IA, USA</li> <li>~1300 pigs/treatment</li> <li>Initial weight ~13 lb</li> <li>5 lb NEWtraStart/ton feed (Grind &amp; Mix)</li> <li>NEWtraStart pigs were 6 days less on trial</li> <li>Ref: TBVol7</li> </ul>	Average Weight Gain, lb	237.3	237.4	+0.1 lb
	Daily Weight Gain, lb	1.37	1.42	+3.7%
	Daily Feed Intake, lb	3.88	3.98	+2.6%
	Feed: Gain	2.83	2.80	-1.1%