

# ORAL-PRO™

## Vitamin D3 *plus* NATURAL E500 Dispersible Liquid Concentrate

Highly Concentrated Vitamin D3 *plus* Natural E500 Supplement for Oral Use in Baby Pigs and in Drinking Water of Nursery and Finishing Pigs



1000 ML — REORDER NO: 21021

### FEATURES AND BENEFITS

- Flexible dosing options:
  - Baby Pigs — Administer ½ to 1 mL orally to baby pigs at processing. Each dose delivers a minimum of 40,000 IU of vitamin D3 and 500 IU of vitamin E activity.
  - Nursery and Finishing Pigs — Mix 2–4 oz. per gallon of stock solution. Use for 5 to 7 days.
- Our unique micelle formulation creates a water-stable emulsion for easy mixing in water.
- Minimum 40,000 IU per mL of vitamin D3 to meet the piglets' needs in the farrowing crate.
- Provides a natural source of vitamin E which reduces the oxidative effects of iron dextran when given at processing.

ORAL-PRO™ Vitamin D3 <i>plus</i> NATURAL E500					
Dose	Vitamin D3 Blood Levels Day 0, 5, 12 and 19 by IU Using RIA				5-Day Treatment
	Day 0	Day 5	Day 12	Day 19	Total Cost/16# Pig
2 oz./gallon	14	44	31	32	4 cents
4 oz./gallon	14	63	45	37	8 cents

**Aurora Pharmaceutical, LLC**  
NORTHFIELD, MINNESOTA 55057  
888-215-1256  
www.aurorapharmaceutical.com



MANUFACTURED IN THE USA

**USES:**  
For use in swine as a supplement during periods of reduced feed intake or stress.

**INGREDIENTS:**  
Vitamin D3, min . . . greater than or equal to 40,000 IU/mL  
Vitamin E, min . . . . greater than or equal to 500 IU/mL.

**OTHER INGREDIENTS:**  
Water, PEG 400 MO, propylene glycol, polysorbate 80, ethyl lactate, potassium sorbate, BHT.

**DIRECTIONS FOR USE IN BABY PIGS:**  
Administer 1/2–1 mL dose orally at processing. Each 1 mL dose delivers a minimum of 40,000 IU of Vitamin D3 and 500 IU of Vitamin E activity, suitable as a one-time supplement in baby pigs.

**DIRECTIONS FOR USE IN NURSERY AND FINISHING PIGS:**  
Mix 2–4 oz. of ORAL-PRO™ Vitamin D3 *plus* Natural E500 liquid per gallon of stock solution, delivered at 1 oz. per gallon of drinking water in nursery and finishing pigs as a supplement. Use for 5–7 days.

**WARNINGS:**  
For oral animal use only. Keep out of reach of children. Store at 20°–25° C (68°–77° F). Excursions permitted between 15°–30° C (59°–86° F). Do not freeze. Shake well before using. Keep out of direct sunlight. Duration of use not to exceed 7 consecutive days. Do not use if allergic or sensitive to the active ingredients.

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TAKE TIME OBSERVE LABEL DIRECTIONS

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## Vitamin D3 *plus* NATURAL E500

### Dispersible Liquid Concentrate

Highly Concentrated Vitamin D3 *plus* Natural E500 Supplement for Oral Use in Baby Pigs and in Drinking Water of Nursery and Finishing Pigs

For Oral Animal Use Only  
Net Contents: 1000 mL

**USES:**  
Para su uso en cerdos como un suplemento durante períodos de ingesta de alimento reducida o estrés.

**INGREDIENTES:**  
Vitamin D3, min . . . . . mayor o igual a 40,000 IU/mL  
Vitamin E, min . . . . . mayor o igual a 500 IU/mL.

**OTROS INGREDIENTES:**  
Agua, PEG 400 MO, propylene glycol, polysorbate 80, ethyl lactate, potassium sorbate, BHT.

**INSTRUCCIONES PARA EL USO EN LOS CERDOS DEL BEBÉ:**  
Administrar 1/2–1 mL por vía oral en dosis de procesamiento. Cada dosis de 1 mL, proporciona un mínimo de 40,000 UI de vitamina D3 y 500 UI de actividad de la vitamina E, adecuado como complemento de una sola vez en los lechones.

**INSTRUCCIONES PARA EL USO EN LOS VIVEROS Y LOS CERDOS DE ACABADO:**  
Mezclar 2–4 oz. de ORAL-PRO™ Vitamin D3 *plus* Natural E500 líquido por galón de solución stock, entrega en 1 oz por galón de agua potable en vivero y cerdos de cebo como complemento. Use durante 5–7 días.

**ADVERTENCIAS:**  
De animales por vía oral únicamente. Mantener fuera del alcance de los niños. Almacenar a 20°–25° C (68°–77° F). Permiten variaciones entre 15°–30° C (59°–86° F). No congelar. Agitar bien antes de usar. Manténgase fuera de la luz solar directa. La duración del uso de no más de 7 días consecutivos. No utilizar en caso de alergia o sensibilidad a los ingredientes activos.

**TÓMESE EL TIEMPO SIGA LAS INDICACIONES DE LA ETIQUETA**

### ORAL-PRO™ Vitamin D3 plus NATURAL E500

#### Aurora Pharmaceutical Research Summary

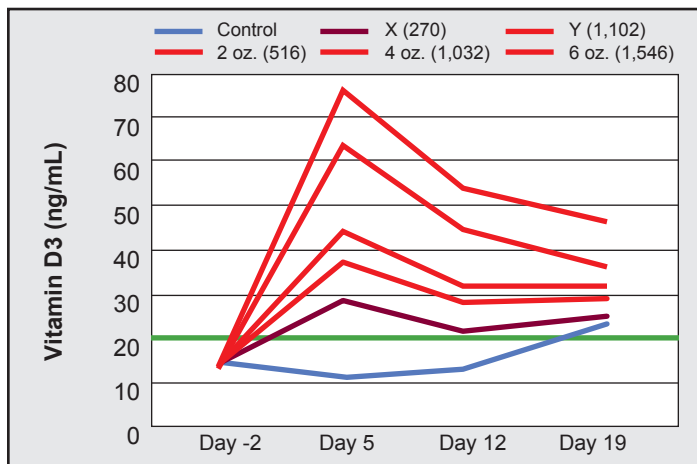
Vitamin D3 supplementation in pigs has become nutritionally important due to the lack of sunlight in modern pork production. D3 is the preferred form of vitamin D over the plant-based D2, which has poor bioavailability in pigs. Many supplemental vitamin D products have recently emerged on the market. ORAL-PRO™ Vitamin D3 plus NATURAL E500 is one such product. It is easy to give as a 1 mL pump in the mouth of the piglet or delivered in the drinking water to nursery age pigs. Comparison with competitor products given at label directions showed ORAL-PRO Vitamin D3 plus NATURAL E500 was superior in raising and maintaining higher serum blood levels (data not shown). Aurora Pharmaceutical has the following research and field trial data to support our dosage recommendation of 2 to 4 oz. per gallon stock solution to maintain normal (25–30 ng/mL)<sup>1</sup> vitamin D3 blood levels. In both studies below, typical nursery ration levels of vitamin D3 were present in the feed.

#### Dose titration study nursery

Table 1. Average serum levels of Vitamin D3 by dose and day. X and Y are competitor products.

Serum (ng/mL)	Dose: oz./gal. stock solution (IU/mL/day)					
	Con (0)	X (270)	Y (1102)	2 (516)	4 (1032)	6 (1546)
Day -2	14	15	15	15	13	13
Day 5	11	29	37	44	63	77
Day 12	13	21	28	32	45	53
Day 19	22	25	29	32	37	47

#### Nursery pig vitamin D3 serum levels



#### Take home message from this research:

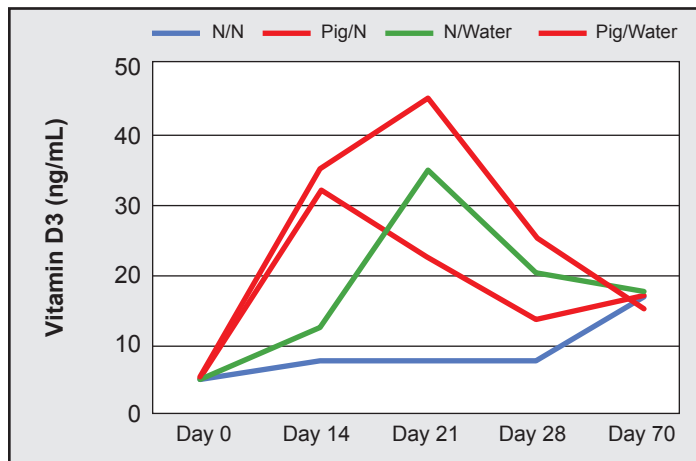
- Vitamin D3 in feed (Con-0) does not get pigs to normal blood levels at a time in the nursery when the immune system is challenged through vaccination and/or disease organisms.
- Product X given at label directions does not result in normal vitamin D3 levels.
- Product Y should be similar to ORAL-PRO Vitamin D3 plus NATURAL E500 at 4 oz./gallon stock solution. These data show there is a problem with bioavailability and absorption. This product does not deliver.
- ORAL-PRO Vitamin D3 plus NATURAL E500 does reach normal blood levels at the recommended dose of 2–4 oz./gallon stock solution metered at 1:128.
- Optimal dose levels (2–4 oz./gallon) depend on the starting level of serum vitamin D3 in the wean pig. Our recommendations are:
  - Less than 9 — use 4 oz./gallon of stock solution for 7 days.
  - 9 to 14 — use 3 oz./gallon of stock solution for 7 days.
  - Greater than 14 — use 2 oz./gallon of stock solution for 7 days.

#### Field study piglet and nursery

Table 2. Average serum levels of Vitamin D3 by treatment and day.

Serum (ng/mL)	Treatment (N=nothing, Pig=1 mL dose, Water=2 oz./gal. stock solution)			
	N/N	Pig/N	N/Water	Pig/Water
Day 0 (1 week old)	6	4	5	6
Day 14 (weaning)	9	32	13	35
Day 21	9	24	36	45
Day 28	8	15	21	26
Day 70	18	18	18	16

#### Piglet and nursery vitamin D3 serum levels



#### Take home message from this field trial:

- Vitamin D3 in feed does not get pigs to normal blood levels at a time in the nursery when the immune system is challenged through vaccination and/or disease organisms.
- Giving vitamin D3 to piglets in the farrowing crate and to nursery pigs at arrival to the nursery produced the best results.
- Giving vitamin D3 at weaning only should be given at 2–4 oz./gallon stock depending on the piglets' starting level of D3.
- If you can only give ORAL-PRO Vitamin D3 plus NATURAL E500 in one place, the nursery is the best place to use it.
- Vitamin D3 is essential for a healthy immune system and bone development.<sup>2</sup> The correct serum level and bioavailability during the transition from the sow to grow-finish may be underestimated as the pig meets some of its greatest performance challenges such as disease exposure, vaccination and nutrient diversification.

<sup>1</sup> Goff, JP; Horst, L; Littlelike, ET, Effect of sow vitamin D status at parturition on the vitamin D status of neonatal piglets. J Nutr. 1984. 114:163–169.  
<sup>2</sup> NRC-Nutrient requirements of swine: 11th revised edition. 2012. The National Academies Press (pg 107–108).