



# NUTRITION NOTES

Innovation + Research from Kent Nutrition Group

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## IMPACT OF HYDRAVANTAGE ON HEALTH STATUS, PERFORMANCE AND ECONOMICS OF SEW PIGS

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HydraVantage is a highly refined, flavored and soluble nutritional premix that can help bolster the gut and immune system of pigs, especially during times of stress. HydraVantage contains fresh water humic acid (a source of nutrient-rich carbon) that can help support the immune system; butyric acid that provides energy to intestinal cells; and Vitamin C, a key antioxidant that can help improve performance in health-challenged pigs. In the trial shown (Table 1) below with SEW pigs (20 days old), we used HydraVantage at 2 ounces per 1 gallon of water to make a stock solution which was run through a medicator or proportioner set at 1:128. This nutritional supplement was used when the pigs arrived at the Kent Product Development Center for the first 11 days on test. After the 11-day period, all pigs received plain water for the remaining 22 days on test. The pigs were fed KNG NexGen grind-and-mix diets in 3 stages (Days 0-11, 11-21, and 21-33).

Table 1.

### Effect of HydraVantage® (Used During Days 0-11) on Performance and Economics<sup>1</sup> in Weanling Pigs

| Treatment                                     | 1                  | 2                  |
|---|--------------------|--------------------|
| HydraVantage                                  |                    | ✓                  |
| Number of Pens                                | 14                 | 14                 |
| Initial Weight, lb                            | 12.56              | 12.65              |
| Death Loss, %                                 | 6                  | 0                  |
| <b>Days 0-11</b>                              |                    |                    |
| ADG, lb                                       | .23                | .23                |
| F/G   | 1.48               | 1.43               |
| Cost/lb Gain, ¢                               | 49.79              | 48.02              |
| Net Return, \$/Pig @ 80¢/lb Live Weight       | .78                | .81                |
| Cost of Water Treatment/Pig <sup>2</sup> , \$ | 0.0                | .09                |
| Adjusted Net Return/Pig                       | .78                | 0.72               |
| <b>Days 0-33</b>                              |                    |                    |
| ADG, lb                                       | .79                | .79                |
| F/G   | 1.37               | 1.34               |
| Cost/lb Gain, ¢                               | 27.08 <sup>a</sup> | 26.36 <sup>b</sup> |
| Net Return, \$/Pig @ 60¢/lb Live Weight       | 8.54               | 8.78               |
| Cost of Water Treatment/Pig, \$               | 0.0                | 0.09               |
| Adjusted Net Return/Pig, \$                   | 8.54               | 8.69               |

KNG 4N-56 <sup>1</sup> Means with different superscripts in a row are significantly different (P ≤ .10)

<sup>2</sup> \$156/3-lb pail = \$6.50/2-oz serving of HydraVantage; \$6.50/128 gallons = \$0.05 per gallon of water consumed; The water consumption per pig on the HydraVantage treatment for the 11-day period was 1.87 gallons.

We observed a small improvement in feed efficiency during both periods (Days 0-11 and 0-33) for those pigs on the HydraVantage nutritional supplement. The small improvement in feed efficiency during Days 0-33 with HydraVantage (1.34 vs. 1.37) resulted in a lower cost of gain (26.36¢ vs. 27.08¢). Note that while net return was slightly less during Days 0-11 with HydraVantage, it was numerically greater (15¢/pig) after 33 days on test (\$8.69 vs. \$8.54) since the pigs previously on HydraVantage the first 11 days performed better in the subsequent growth stages.

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In evaluating the data, we also observed a numerical difference between these two treatments in the number of dead pigs. The pigs on the plain water treatment had 6% death loss. In typical nursery units, death losses range from 3 to 6%. Could HydraVantage supplementation be helping with pig survivability? It is certainly possible, since the key ingredients in HydraVantage can aid the immune system and provide a known source of energy to intestinal cells as well as a source of antioxidants which can help maintain cell function during times of stress.

Investing only 9¢ per pig with HydraVantage during Days 0-11 resulted in overall small numerical improvements in net return (15¢/pig). However, any reductions in death loss due to the support of the gut and immune system along with key nutrients from HydraVantage certainly provides economic savings. This is illustrated in Table 2 below, highlighting the cost of the SEW pigs (does not account for any feed expenses):

**Table 2.**  
**Impact of Death Loss in a 1200-Head Nursery Unit**

| Treatment                     | 1        | 2 |
|-------------------------------|----------|---|
| HydraVantage                  |          | ✓ |
| Death Loss, %                 | 6        | 0 |
| Number of Dead Pigs           | 72       | 0 |
| Economic Loss at \$42/SEW Pig | -\$3,024 | 0 |

Table 3 shows another way of comparing the differences in death loss numbers and how they impact the swine producer's bottom line in a commercial barn (1200 head).

**Table 3.**  
**Impact of Reducing Death Loss in a 1200-Head Wean-Finish Unit**

| Death Loss, %                             | 3       | 4.5     | 6        |
|---|---------|---------|----------|
| Number of Dead Pigs                       | 36      | 54      | 72       |
| Gross Revenue Loss <sup>1</sup> , \$/Unit | \$5,040 | \$7,560 | \$10,080 |

<sup>1</sup> 280-lb market hog x \$50/cwt. live price = \$140/hog sold

Reducing death loss from 6 down to 4.5% results in a gross revenue gain of \$2,520 per turn for a 1200-head wean-finish unit. Combining good management, health programs and nutrition are some of the key factors in trying to minimize death loss. Utilizing HydraVantage costs only about 10¢/pig during the first 10 days postweaning. HydraVantage contains several key ingredients that can provide immune system support, energy to intestinal cells and antioxidants that may help pigs during times of stress. In two peer-reviewed scientific papers<sup>1</sup> published by Kent Nutrition Group, these ingredients in different formulations can result in synergistic effects that can help pigs and poultry, especially during times of stress. Moreover, one of the cited (patent) benefits of KNG's proprietary fresh water humic acid source (a key ingredient in HydraVantage) is a reduction in inflammation in experimental studies<sup>2</sup>.

### **BOTTOM LINE:**

Using an effective and quick delivery system with HydraVantage, via water proportioners, may help pigs perform better during periods of stress such as disease, transportation, and extreme weather.

<sup>1</sup> Weber, T. E., D. M. van Sambeek, N. K. Gabler, B. J. Kerr, S. Moreland, S. Johal, and M. S. Edmonds. 2014. Effects of dietary humic and butyric acid on growth performance and response to lipopolysaccharide in young pigs. *J. Anim. Sci.* 92:4172-4179.

<sup>1</sup> Edmonds, M. S., S. Johal, and S. Moreland. 2014. Effect of supplemental humic and butyric acid on performance and mortality in broilers raised under various environmental conditions. *J. Appl. Poult. Res.* 23:260-267.

<sup>2</sup> Anti-Inflammatory Humate Compositions and Methods of Use Thereof (Patent).