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POULTRY RESEARCH BULLETIN 12

The effect of Naverde (USDA certified organic) vs. competitor products on growth performance and *Salmonella* prevalence in 0-to-42-day old broilers

INTRODUCTION

Naverde (USDA certified organic) is an all-natural blend of hydrolyzed yeast and highly concentrated yeast cell wall. This blend of complex carbohydrates, nucleotides and peptides reduces enteric pathogen challenges, improves digestive efficiency, supports the immune system and lowers gut inflammation. Thus, the poultry industry utilizes products like Naverde to increase rate of gain and improve feed conversion ratio in broilers.

The use of complex carbohydrates, such as those in Naverde, have been well-documented in the scientific literature as a means of reducing *Salmonella* prevalence and load in all types and phases of commercial poultry production. Specifically, the mannan-oligosaccharides (MOS) in Naverde bind to *Salmonella* and prevent them from attaching to the gut lining and colonizing the gut. Thus, there is a reduction in *Salmonella* prevalence and load in poultry.

This study was conducted to evaluate the effect of Naverde, compared to two competitor products, on broiler growth performance, carcass characteristics, and *Salmonella* prevalence.

METHODS

► One thousand two hundred, Ross x Ross 708 male day-of-hatch broilers were randomly allotted to treatment groups: 1. Control, no feed additive; 2. Naverde (100 g/ton); 3. Competitor – yeast culture (YC; 750 g/ton); or 4. Competitor – hydrolyzed yeast /yeast culture (HY/YC; 100 g/ton). There were 15 replicate pens per treatment with 20 chicks per pen. Chicks were fed a standard starter diet from day 0 to 14, a standard grower diet from day 14 to 28, and a standard finisher diet from day 28 to 42, including their respective feed additives. Birds and feed were weighed on days 0, 14, 28 and 42 to calculate body weight gain, feed intake, and feed conversion ratio (feed:gain). On day 41, cloacal swabs were collected from five randomly selected birds per pen for determination of *Salmonella* prevalence and load. At the termination of the study, three randomly selected birds per pen were processed to determine carcass percent yield.

Broilers were reared on used litter. They were not under a disease or pathogen challenge.



NAVERDE™

Figure 1. The effect of Naverde on body weight gain of 0 to 14 day old broilers.*

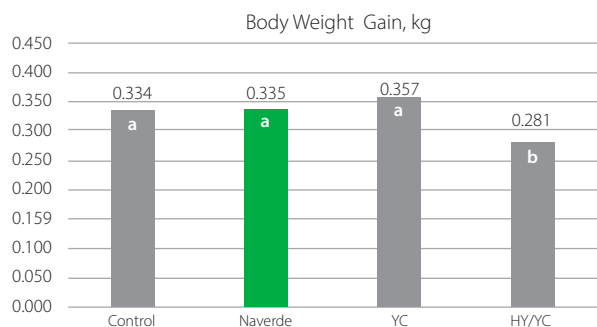
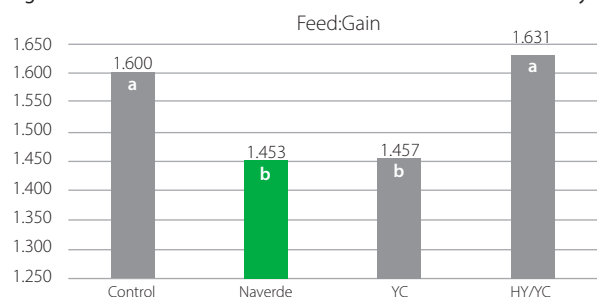


Figure 2. The effect of Naverde on feed conversion ratio of 0 to 14 day old broilers.*



*Data are means of 15 replicates per treatment.

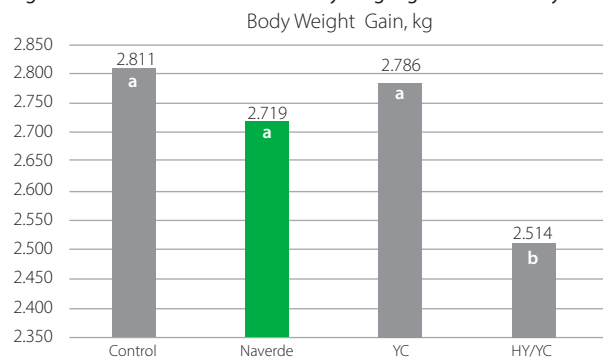
^{a,c} Data with different superscripts are different ($P < 0.01$).

RESULTS

► From day 0 to 14, chicks fed Naverde had higher ($P<0.01$) body weight gain (Figure 1) than chicks fed the HY/YC, and better ($P<0.01$) feed:gain (Figure 2) than chicks fed the control or HY/YC. Broilers fed Naverde had numerically higher ($P=0.13$) body weight gain than broilers fed HY/YC from day 14 to 28. During the finisher phase (day 28 to 42), broilers fed HY/YC had the lowest ($P<0.05$) body weight gain and feed intake. Feed:gain was similar ($P=0.114$) for broilers fed Naverde, YC, or HY/YC. For the overall trial (day 0 to 42), body weight gain (Figure 3) and

feed intake (Figure 4) were higher ($P<0.01$) for broilers fed Naverde or YC than for broilers fed HY/YC. Although not statistically significant, broilers fed Naverde had two points better feed:gain than broilers fed either YC or HY/YC from day 0 to 42 (Figure 5). Percentage carcass yield was lowest ($P<0.01$) for broilers fed HY/YC (Figure 6). *Salmonella* prevalence (Figure 7) was numerically lower for broilers fed Naverde compared to broilers fed YC or HY/YC, and *Salmonella* load (CFU; Figure 8) was lower ($P<0.05$) for broilers fed Naverde than for broilers fed HY/YC.

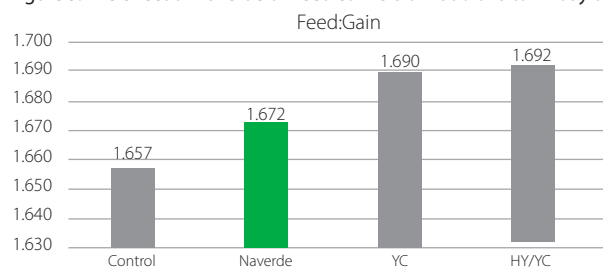
Figure 3. The effect of Naverde on body weight gain of 0 to 42 day old broilers.*



*Data are means of 15 replicates per treatment.

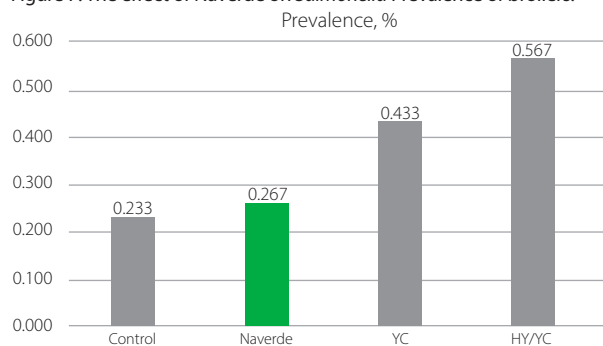
^{a,c} Data with different superscripts are different ($P<0.01$).

Figure 5. The effect of Naverde on feed conversion ratio of 0 to 42 day old broilers.*



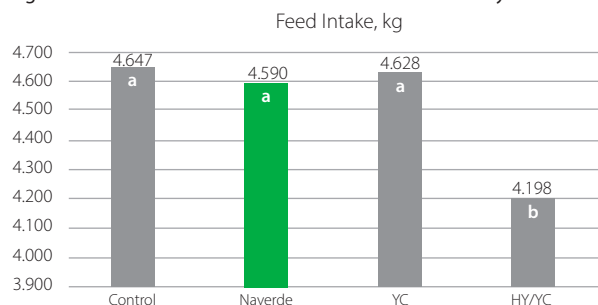
*Data are means of 15 replicates per treatment.

Figure 7. The effect of Naverde on *Salmonella* Prevalence of broilers.*



*Data represent the percentage of *Salmonella* positive cloacal swabs from 5 randomly selected birds per pen, or 75 birds per treatment.

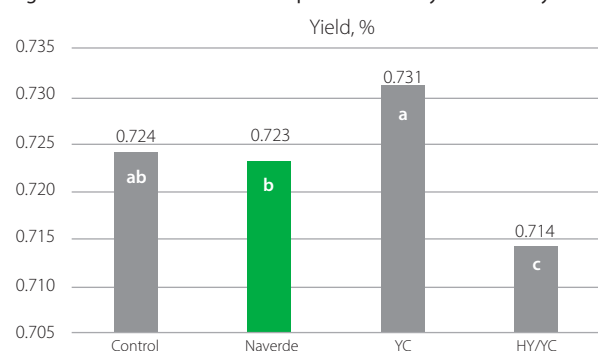
Figure 4. The effect of Naverde on feed intake of 0 to 42 day old broilers.*



*Data are means of 15 replicates per treatment.

^{a,b} Data with different superscripts are different ($P<0.01$).

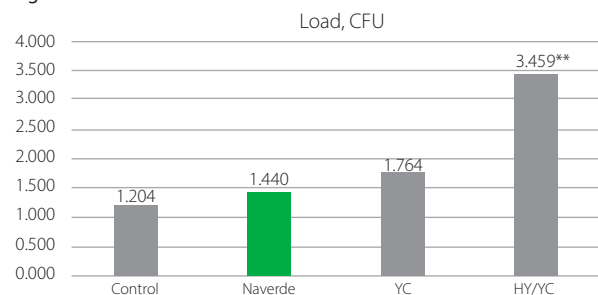
Figure 6. The effect of Naverde on percent carcass yield of 42 day old broilers.*



*Data are means of 15 replicates per treatment.

^{a,b} Data with different superscripts are different ($P<0.01$).

Figure 8. The effect of Naverde on *Salmonella* load of broilers.*



*Data represents the CFU of *Salmonella* collected from swabs which tested positive.

**($P<0.05$)

IMPLICATIONS

Naverde can be utilized in an organic production system to improve growth performance and carcass yield of broilers. Additionally, Naverde can reduce *Salmonella* prevalence and load in live broiler production.



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