Enspira+ Improves Digestibility[3]

- Lowered digesta viscosity (cP) at 100 & 125 ppm compared to negative control
- Significantly improved standardized ileal digestibility of essential amino acids in soybean meal
- Significantly improved total tract & ileal digestibility in a corn/soy/wheat bran trial

[3]Trials conducted at or contracted by United animal Health.

ABOUT UNITED ANIMAL HEALTH

Scientifically Better

United Animal Health started as a regional swine nutrition company in 1956, but our aspirations were always bigger. We believed that with a commitment to providing the best answer to protein producers, we could expand to serve all species of protein producers around the globe. Over the last 65+ years, we've transformed into a multinational ag-biosciences enterprise. We are innovators of animal science and we strive to impact the health of animals using the least amount of resources. We offer scientifically better solutions that are planet responsible.

Guided by Science. Proven with Research.

We work to discover and innovate solutions for animal producers that are tested extensively to prove consistency before they go to market. We believe that hope is not a strategy, but good science is. We engineer the most profitable animal solutions on and for the planet through scientific research and animal centered design.

All statements are based on independent trials conducted by or in conjunction with United Animal Health.

Some statements may not be applicable in all regions.

UNITED ANIMAL HEALTH

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UNITED ANIMAL HEALTH

enspira+

HAVE YOU UNLOCKED THE FULL KCAL POTENTIAL OF YOUR CORN/SOYBEAN MEAL-BASED DIET?

A multi-enzyme NSPase mixture that unlocks calories for poultry producers.

UnitedAnH.com

enspira+

The Problem

The presence of non-starch polysaccharides (NSPs) in feedstuffs used to formulate commercial poultry diets can result in reduced performance due to their antinutritional nature.

NSPs are not well digested by poultry as they lack endogenous enzymes necessary to break down the linkages of complex polysaccharides present in plant-derived feedstuffs.

Feeding exogenous carbohydrase enzymes may reduce or eliminate the negative effects observed by the presence of NSPs. However, it is not just as simple as adding a single exogenous enzyme to the diet. A complex array of enzymes are needed such as xylanase, cellulase, β-glucanase, mannanase, and even arabinoxylan (AX) debranching enzymes to unlock the full nutritional potential of feedstuffs.

What Is Enspira+?

- **Enspira+ is a diverse & synergistic multi-carbohydrase derived from *Aspergillus* and *Trichoderma* NSPase's that contains:**
  - Significant levels of cellulase, β-glucanase, β-mannanase, α-galactosidase, amylase, & protease activities
  - Multiple xylanase strains (13)
  - Several key AX debranching enzymes (important for corn- based diets)

What does Enspira+ do?

Through its mode of action, Enspira+ releases the nutritional value locked within NSPs, consistently providing more nutrients to the birds. This allows for the reduction in costly added fat in the diet and the flexibility to use lower-cost ingredients.

Additionally, the debranching enzymes unlock the trapped proteins, minerals, etc., bound in the AX backbone and release prebiotic xylose oligosaccharides, which can promote *Bifidobacteria* and *Lactobacillus* growth.

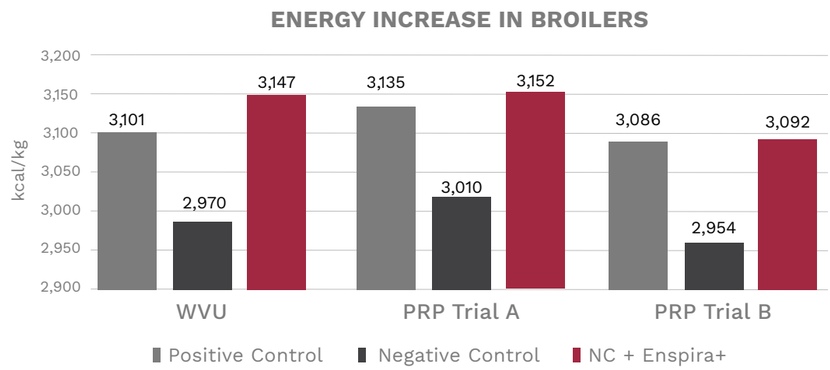
Enspira Energy Calculator (1000 kg of Complete Feed)

Inclusion rate (ppm)	100
Estimated energy release (kcal/kg)	+85

Inclusion rate (ppm)	125
Estimated energy release (kcal/kg)	+95

Consistent Energy

- At an inclusion rate of 125 ppm, Enspira+ increases energy release by ~ 90 kcal/kg, the highest estimated energy increase among commercial NSPase products for poultry.
- Average across three university trials was 152 kcals/kg



Consistent Performance

- Enspira+ consistently maintains or improves FCR and body weight, compared to diets with greater kcals.
- In additional individual trials, Enspira+ has demonstrated increases in % carcass yield, breast yield, breast and tenderloin weight compared to both positive and negative control groups.

	Fixed –Wt. FCR			Body Weight (kg)		
	Negative Control	Positive Control	PC + Enspira+	Negative Control	Positive Control	PC + Enspira+
West Virginia[1]	1.84	1.64	1.64	2.50	2.68	2.74
PRP Trail A[2]	1.64	1.55	1.55	2.80	2.89	2.86
PRP Trail B[3]	1.52	1.43	1.45	2.43	2.48	2.46

[1,3]Treatments for West Virginia and PRP Trial B. Positive Control (PC); Negative Control (NC) PC -132 kcal/kg reduction; Enspira (NCE) NC + 125 ppm Enspira+

[2]Treatment for PRP Trial A. Positive Control (PC); Negative Control (NC) PC -125 kcal/kg reduction; Enspira (NCE) NC + 125 ppm Enspira+