



TECHNICAL BULLETIN

IMPROVE PELLET QUALITY WITH AFG®

Pelleted feed improves bird performance over mash feed by reducing feed wastage, feed sorting, and time spent eating. The degree of performance improvement is significantly influenced by pellet quality^{1,2} with industry guidelines indicating 1 point of FCR improvement for every 10% increase in pellets (vs fines). In addition, research suggests a 10 g increase in carcass weight and a 4 g increase in breast weight³.

While many factors influence pellet quality, the three most influential are feed formulation, heat conditioning, and moisture addition as they impact the Pellet Durability Index (PDI)^{4,5}. The PDI indicates the percentage of pellets that remain intact after being submitted to outside forces, which are expected to be intact when consumed by the bird.



Methods to Improve PDI

ACTION	RESULT
Increase protein content in formulation	Enhance pellet binding
Reduce fat content in formulation	Increase friction between feed particles
Increase heat in conditioner	Enhance protein denaturation and starch gelatinization
Increase moisture addition	Enhance pellet binding

THE PROOF IS IN THE PELLETS

A feed manufacturing trial was conducted by Dr. Wilmer Pacheco at Auburn University to assess measurements of pellet quality when utilizing AFG® as a sodium source. Starter, grower, and finisher phase broiler diets were formulated to be nutritionally similar but vary in sodium source, where they contained 0, 6, or 8 lb/ton of AFG (9 diets total). Samples of each diet were collected at various stages during manufacturing and after pelleting to determine pellet quality. PDI was determined through tumbler and Holmen methods.



Feed moisture percentage increased with the inclusion of AFG (Chart 1). As such, using AFG as a sodium source resulted in a numerical increase in the number of intact pellets (Chart 2) and improved the PDI when assessed with two different methods (Charts 3 & 4). PDI improvements were especially notable in finisher diets.

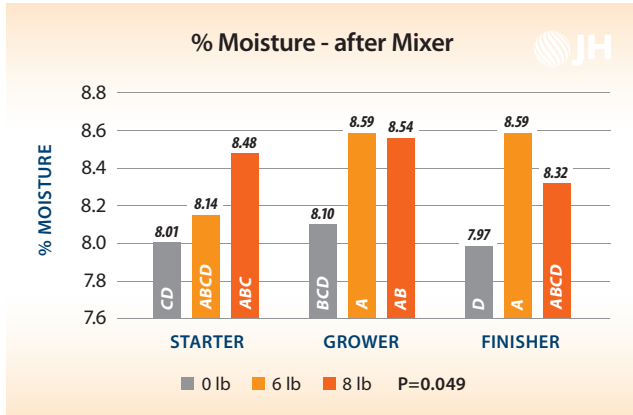


CHART 1 Samples of each diet were collected directly after mixing to quantify the moisture content of the feed.

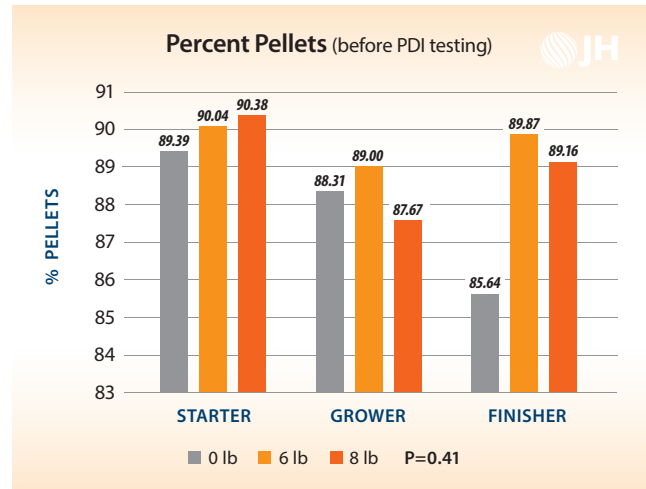


CHART 2 To determine percent pellets, entire 50 lb bags of each diet were sieved (3mm) to remove fines and the resulting fines and pellets were weighed.

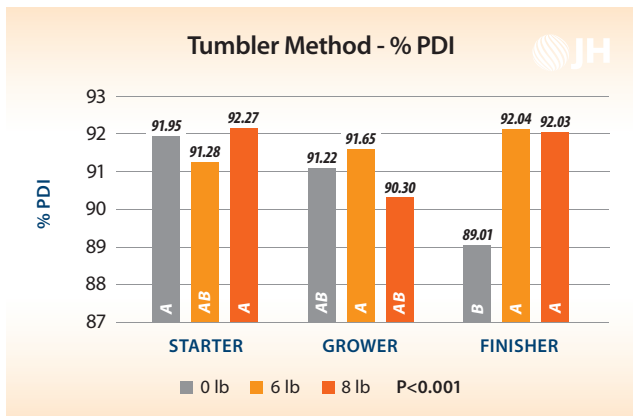


CHART 3 Samples of pellets from each diet (after sieving) were agitated using a tumbler for 10 minutes and the remaining intact pellets were quantified.

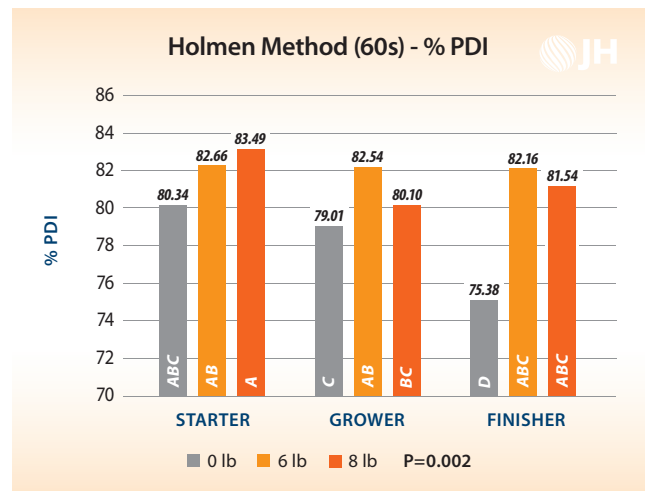


CHART 4 Samples of pellets from each diet (after sieving) were agitated using a Holmen tester for 60 seconds and the remaining intact pellets were quantified.

**UTILIZING AFG AS A SODIUM SOURCE
IN POULTRY DIETS ENHANCES FEED QUALITY WHILE
ALSO PROVIDING GUT HEALTH BENEFITS
TO THE BIRD.**

AFG®: SUPPORT GUT INTEGRITY WITH SULFATE

AFG® – Animal Feed Grade is a functional feed ingredient designed for all classes of poultry that improves bird performance by strengthening gut integrity. As a non-chloride sodium source with the highest sulfate content among additives, AFG fortifies the mucus layer of the gastrointestinal tract, promoting resilience and optimal function. This support enhances nutrient absorption, and safeguards against intestinal damage, particularly during periods of stress.

PRODUCT DETAILS

- Contains 19.7% sodium* and 26% sulfur
- Inclusion rate between 0.3% and 0.4% in diet
- Available in 50 lb. bags, 2,000 lb. totes and bulk
- GRAS (Generally Recognized as Safe) status under FDA
- Mixes well in diets
- Produced in compliance with Food Safety and Modernization Act
- Recognized by AAFCO

*sodium range 19.5% – 19.9%



1/ Penn State Extension. 2023. Feeding pellets for broiler performance improvements. Accessed Jan 2025. Feeding Pellets for Broiler Performance Improvements

2/ Anitox. 2023. Boosting broiler feed efficiency through improved pellet quality. Accessed Jan 2025. Boosting Broiler Feed Efficiency Through Improved Pellet Quality

3/ Lilly, K. G. S., C. K. Gehring, K. R. Beaman, P. J. Turk, M. Sperow, and J. S. Moritz. 2011. Examining the relationships between pellet quality, broiler performance, and bird sex. *J. Appl. Poult. Res.* 20:231-239.

4/ Muramatsu, K., A. Maiorka, I. C. M. Vaccari, R. N. Reis, F. Dahlke, A. A. Pinto, U. A. D. Orlando, M. Bueno, and M. Imagawa. 2013. Impact of particle size, thermal processing, fat inclusion and moisture addition on pellet quality and protein solubility of broiler feeds. *J. Agric. Sci. Technol.* 3:1017-1028.

5/ Muramatsu, K., A. Massuquetto, F. Dahlke, and A. Maiorka. 2015. Factors that affect pellet quality: A review. *J. Agric. Sci. Tech.* 5:717-722.



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