


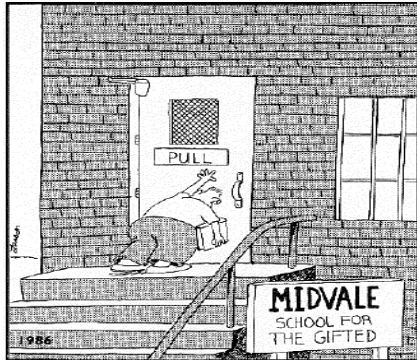


WE'RE AT VALINE, WHERE ARE YOU?

2014 Virginia State Feed Association & Nutritional Management "Cow" College
February 20, 2014
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Senior Director Nutritional Services
Pilgrim's



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MIDVALE
SCHOOL FOR
THE GIFTED



TOPICS

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- Nutrients
- Feed Ingredients
- Amino acids & N metabolism
- Feed Formulation
- Practical Evaluation of Feed Additives
- Pilgrim's at a Glance



NUTRIENTS

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1. Most Important Nutrient?
WATER
2. Energy/ calories Metabolizable Energy (ME kcal/lb)
3. Amino Acids - Total and Digestible - DAA drive Crude Protein Level ; Key amino acids are methionine + cysteine (TSAA), lysine, threonine, isoleucine, valine, tryptophan.
4. Minerals - Sodium, Chloride, Calcium and Available Phosphorus (Macro) ; Zinc, Manganese, Iron, Copper, Iodine, Selenium
5. Vitamins - A, D, E, K (Fat Soluble); B vitamins including choline

pilgrim's **Nutrient Requirement of the Bird** 5

Requirements vary by age, strain and other conditions

- Energy/calories (ME) increase with age
- Amino Acids (Crude Protein), Minerals and Vitamins decrease with age
- Due to this principle, several diets are used over the life of the broiler depending on market age, product mix (whole bird versus deboned) and limitations of the feed mill

pilgrim's **Feed Ingredients - Energy** 6

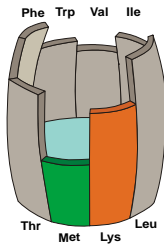
- Primary – cereal grains and fats
 - Corn
 - Wheat
 - Milo – low tannin
 - Fats
- Secondary – oilseed meals, by-products and animal proteins
 - Soybean Meal
 - Canola Meal
 - DDG's
 - Bakery Meals
 - Meat and bone meal & animal protein blends

pilgrim's **Feed Ingredients – Amino Acids/CP** 7

- Primary – Oilseed Meals
 - Soybean meal
 - Canola meal
 - Meat and bone meal & animal protein by-products
 - Added amino Acids
 - Lysine (liquid and dry; Lys HCL or Biotys)
 - Methionine (liquid and dry; methionine analog or DL-methionine)
 - Threonine (dry)
 - Protease enzymes ? CP versus Amino Acids!!
- Secondary – cereal grains and by-products
 - Corn
 - Wheat
 - DDG's

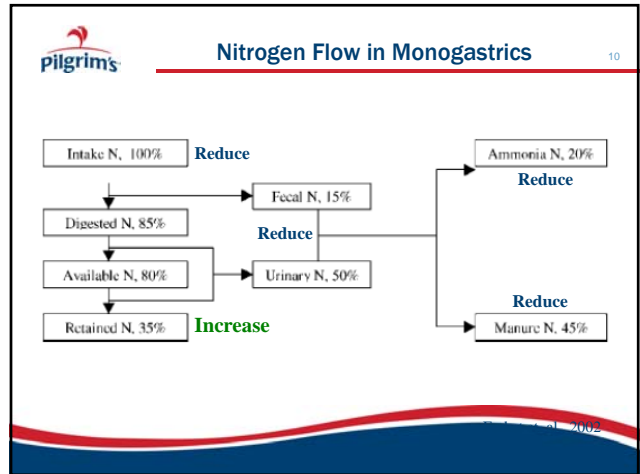
pilgrim's **Efficient use of Amino Acids** 8

- Principle
 - Adopt Amino Acid nutrition to meet animal requirements.
 - Digestible Amino Acids
 - Ideal AA Ratios
- Use
 - Reduction of crude protein
 - Inclusion of amino acids into feeds
- Available Amino Acids
 - Methionine; Lysine
 - Tryptophan; Threonine
 - Valine, Isoleucine

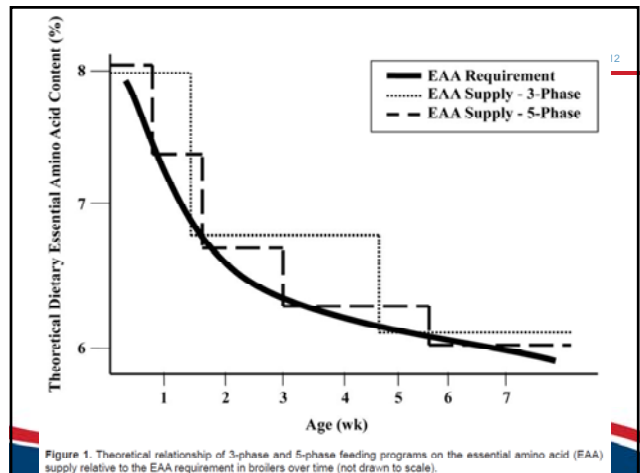


Feed formulation to reduce \$\$, N excretion and ammonia emission

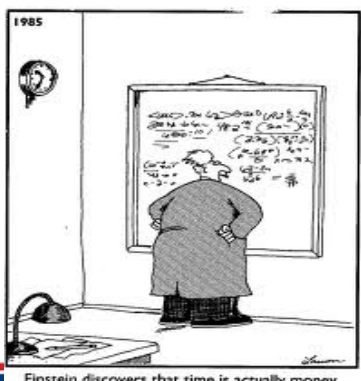
- Amino Acid Supplementation can reduce N excretion by 40%.
 - This can be as high as 50% for layers.
- For every 1% drop in CP, from the use of AA's, N excretion can drop by 8.5%.
- Reduction in N excretion reduces ammonia emissions.
 - Reducing N levels in the feed will decrease N excretion and ammonia emissions from poultry manure.



Broilers



pilgrim's **Feed Formulation** 13



1985

Einstein discovers that time is actually money.

pilgrim's **Feed Formulation** 14

- Use linear programming (least-cost) to find the best cost formula given the ingredient make-up and nutrient requirements
- Weight/Space is a “nutrient” – must assess the impact of the additive on final ingredient make-up and cost of the diet.

pilgrim's **Feed Formulation - Example** 15


- Ingredients but no nutrient requirements but weight – 100% limestone
- Add energy minimum – corn, fat, maybe some meat and bone meal
- Add Crude Protein minimum – soybean meal and DDG's
- Add amino acid minimums - lysine, methionine and threonine - \$\$\$ and decrease NI
- Add sodium, calcium and Av. Phos minimums- salt, limestone, phosphate
- Add trace mineral and vitamins – trace mineral and vitamin premixes and choline/betaine

pilgrim's **Reading Feed Formulas & Batch Sheets** 16

- “Left-Side” – list of ingredients in the formula with mins, maxes, shadow prices and rejected ingredients.
- “Right-Side” – Nutrient minimums and maximums set for nutrient requirements of the broiler -primarily age
- Batch Sheet – ingredient levels from formula based on 2000 lbs increased to mixer size and ingredient order in scaling.




Pilgrim's
PRACTICAL EVALUATION OF FEED ADDITIVES



PRIMARY CRITERIA 18


1. What's the price?
2. What do I get out of using it?

Any Questions?




CONSIDER THE VALUE CHAIN 19

- The Bird
- Feed Mill
- Feed Formulation
- Technical Data and Trials
- People




Economic Validation by the Bird 20

- Additive must be priced to lower the feed cost per pound of meat /dozen eggs or increase yield which the birds will tell us. Strain and bird size needs to be considered
- Consistency and reliability of product performance will be key.
- Is the additive is another "me too" additive and if so they will be defined as a commodity
- Does the bird need the additive e.g. MET
- Differentiate and investigate how products work individually or with other products

 **Economic Validation by the Bird** 21


EXAMPLE USING BROILER FEED CONVERSION

- Per 1,000,000 Broilers per Week @ \$320/ton average feed cost
 - One (1) point of feed conversion (0.01 e.g. 1.65 to 1.64) is worth:
 - Small bird ~4.00 lbs. = ~\$6,400/week
 - Medium bird ~ 6.00 lbs. = ~\$9,600/week
 - Big bird ~ 8.00 lbs. = ~\$12,800/week


 **Feed Mill** 22

Can the additive be used in the feed mill? Every feed mill is different!

- Package size
- Dosage rate
 - Magnitude
 - Constant or variable?
- Mixability
- Stability of additive through feed processing
- Micro bin space
- Hassle factor for the feed mill

 **Feed Formulation** 23

- Add "on-top" or formulate in?
 - "On-Top" - simply add to the feed
 - Formulate in - assign nutrient values ACCURATELY
- Space is a nutrient - must assess the impact of the additive on final ingredient make-up and cost of the diet.
- Dosage or inclusion rate

 **Technical Data and Trials** 24

- One trial does not do it!
- Consistency and reliability of response - Show the good, the bad and the ugly.
- Properly designed trials with negative control and adequate responses to additive based on claims.
- Feature /Benefit Analysis
- Use US measures and adjusted feed conversions to a common body weight.

Pilgrim's **People** 25

- People buy from people
- Know your customer (and *vice versa*) and work to define their needs
- Customer Service – is additive shipped in timely manner and in good condition, supply adequate and issues resolved efficiently
- Keep it simple especially pricing

Pilgrim's **Pilgrim's Facts** 26

- Second largest poultry company in the world
- Employs ~38,000 people
- Capacity 36 million chickens per week which is 9.5 billion pounds of chicken per year

Pilgrim's **Pilgrim's Locations** 27

Pilgrim's **Vertical Integration – The Process** 28

 **At the Feed Mill** 29

- Pilgrim's Pride owns and operates 28 feed mills.
- Every year, we purchase over 200 million bushels of corn and 2.0 million tons of soybean meal as ingredients for our poultry feed.
- Our feed is manufactured using a proprietary mixture that includes only natural ingredients. No growth hormones of any kind are used in our poultry diets.
- Once the feed is ready, it's loaded onto feed trucks and delivered to grow out farms.

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THANK YOU!