AFIA®
American Feed Industry Association

Our Industry. Our Passion. Our Voice.

Feed Ingredients and Ration Composition Can Reduce Environmental Impact

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VOICE

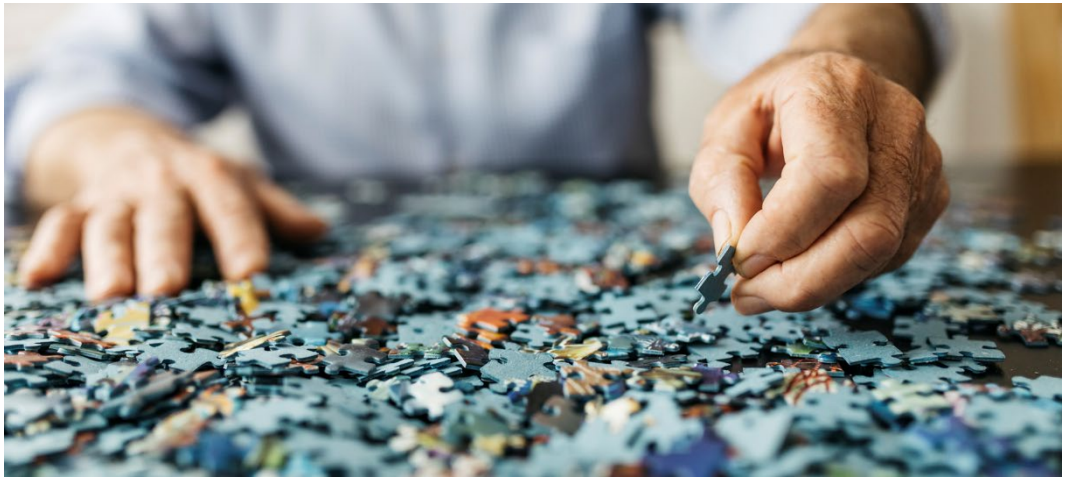
REPRESENTATION

EXPERTISE

ENGAGEMENT

Reducing Environmental Impact

- A hallmark of sustainability
- Multifaceted, many components
- Crosses professional disciplines
- Together, we can make great strides



Reducing Environmental Impact Via

- What we choose
- How we combine
- How we present
- How we enhance

Nutrient Utilization

Environmental Impact

- **Offered>Ingested>Digested>Metabolized**

Established Concepts

- Feed ingredients
- Feed compounding or formulation
- Animal husbandry & feeding systems
- Approved feed additives

- **“Don’t discard the basics”**

Emerging Technologies

- Additives containing seaweed and/or other components created to reduce enteric methane emissions in ruminants
- Expanded knowledge through research
- Feed lifecycle assessment database
  - Quantify
  - Compare

gfli

Global Metrics for Sustainable Feed

Global Feed LCA Institute Key Attributes

- Feed-specific LCA tool using a harmonized methodology
- Uniform calculation of 15 impact categories:
  - Emissions of GHG at cultivation, transport and processing
  - Water usage, water quality impact
  - Land use change
- Software neutral to facilitate uptake of data by LCA practitioners
- Submitted data quality and integrity assured by independent review
- **“ I can’t manage, what I can’t measure”**
- **“Awareness empowers me”**

“When there is a benchmark for current CO2 output, the reduction of CO2 can be made visible in the future.”

What We Choose

- Selection and inclusion of feed ingredients can reduce environmental impact
  - Byproducts and Coproducts
    - Divert material from landfills and 'upcycle'
  - Increased bioavailability
    - e.g. Phosphorus comparative values of 40 to 100
  - Selection of a commodity ingredient based on content of a specific nutrient for specific application
    - e.g. High lysine corn
- Focus on net utilization by the animal
- **Offered>Ingested>Digested>Metabolized**

How We Combine

- Once feed ingredients are chosen, processing and formulation can also reduce environmental impact
- Particle size-minimum, maximum, optimum
  - Affects palatability (ingestion) and utilization
- Respect nutrient ratios "responsible nutrition"
- Don't subject nutrients to antagonists or fail to account for them
  - Cu:Mn:Zn and N:S
- **Offered>Ingested>Digested>Metabolized**

How We Present

- Ingredients selected and compounded must next be offered to animals in production
  - Basic animal husbandry can ↓ environmental impact!
    - Managing “like kinds together”, so there is not a lowest common denominator and subsequent waste
  - Feeding systems
    - Designed, adjusted properly; optimal number of animals per feeder; frequency of feeding
    - Historic examples: ↓ waste ↑ efficiency ↓ impact
- **Offered>Ingested>Digested>Metabolized**

How We Enhance

- Approved feed ingredients
  - Varied and numerous feed ingredients available to enhance palatability, increase digestibility and even reduce environmental impact
    - However, many times such claims cannot be made nor marketed, leaving much value “on the table”
    - Our industry needs help in expanding label claims and expediency in ingredient approvals
- Emerging feed ingredients-specific to reducing enteric methane emissions
  - Cannot yet be claimed, nor marketed ↓ adoption/use
- **Offered>Ingested>Digested>Metabolized**

Climbing to Peak Efficiency (and Reduced Environmental Impact)

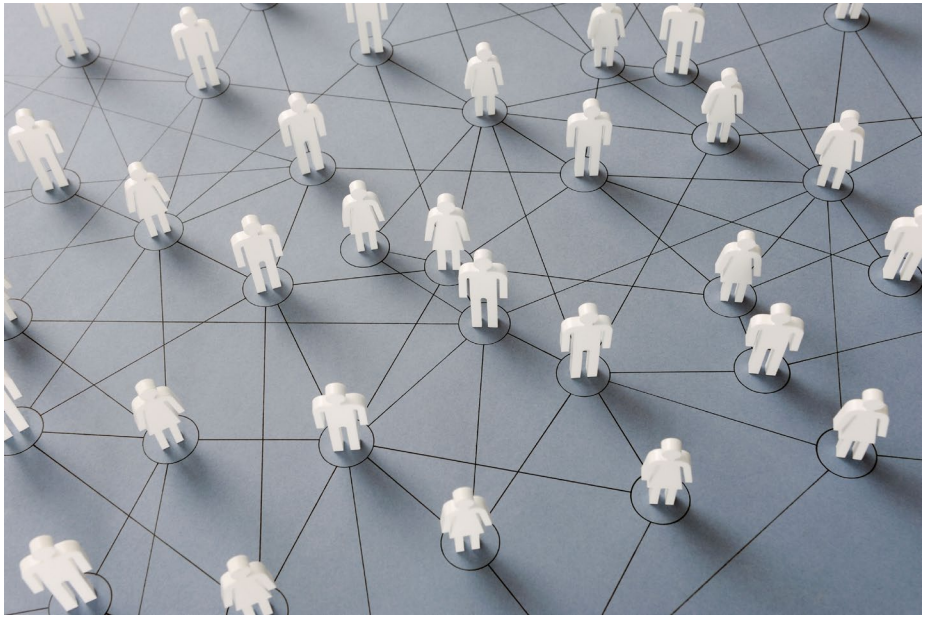
- Research
  - **Feed additives as a strategic approach to reduce enteric methane production in cattle: modes of action, effectiveness and safety**
    - **Honan et al, *Animal Production Science,* February 2021**
  - **"Hold off — for now — on feeding seaweed to cows to reduce methane" Joe McFadden** Hold off — for now — on feeding seaweed to cows to reduce methane | TheHill
    - **Sees the need to evaluate**
      - **Environmental impact potential due to production**
      - **Processing and distribution**
      - **Effects on total diet acceptability, digestibility, gut microbiome, growth and production**

Climbing to Peak Efficiency (and Reduced Environmental Impact)

- Urgency
  - **In the headlines:**
    - Rep. Feenstra wants faster FDA approval of feed additives *Feed Strategy* Feb. 4th, 2022
  - **Quotable:**
    - "It is time to broaden the regulatory roadway for animal food marketing claims to accommodate the expanded understanding of the physiology of the gastrointestinal tract. The CVM is long overdue in revisiting its narrow path for regulatory approval of animal food ingredients, and food companies are starting to take notice." - **Louise Calderwood, AFIA**
      - *Agripulse, December, 2021*
  - An expanded body of knowledge is waiting to be implemented

Climbing to Peak Efficiency (and Reduced Environmental Impact)

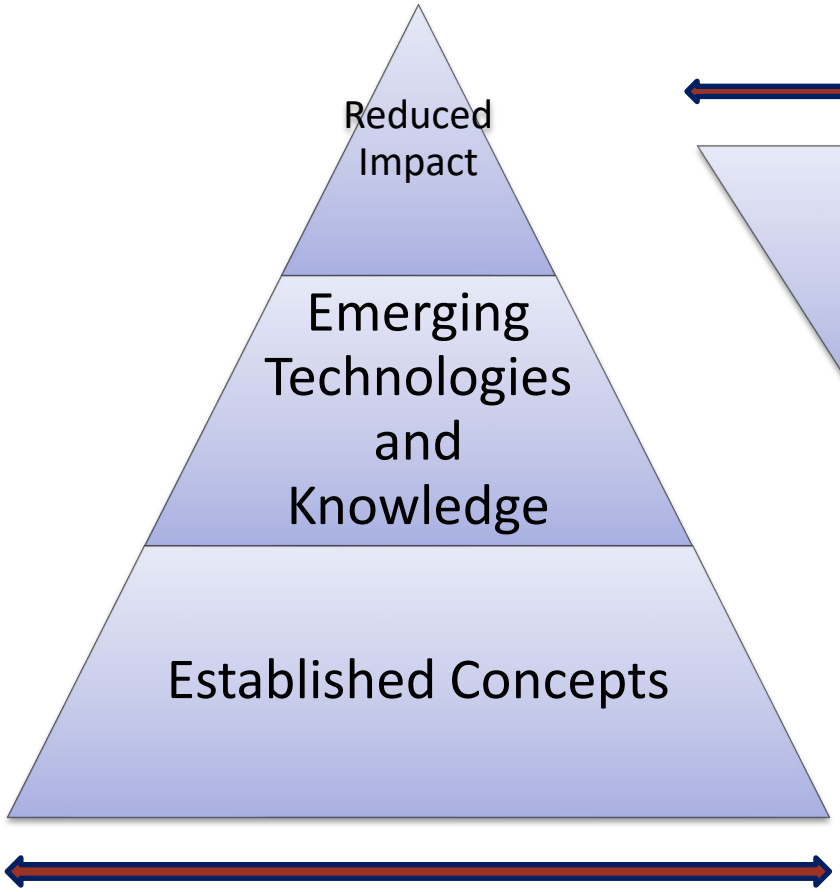
- Teamwork
  - Innovators, Inventors, Entrepreneurs
  - Research Scientists
  - Nutritionists
  - Geneticists
  - Manufacturers
  - Engineers
  - Animal Behaviorists
  - Farmers
  - And More!

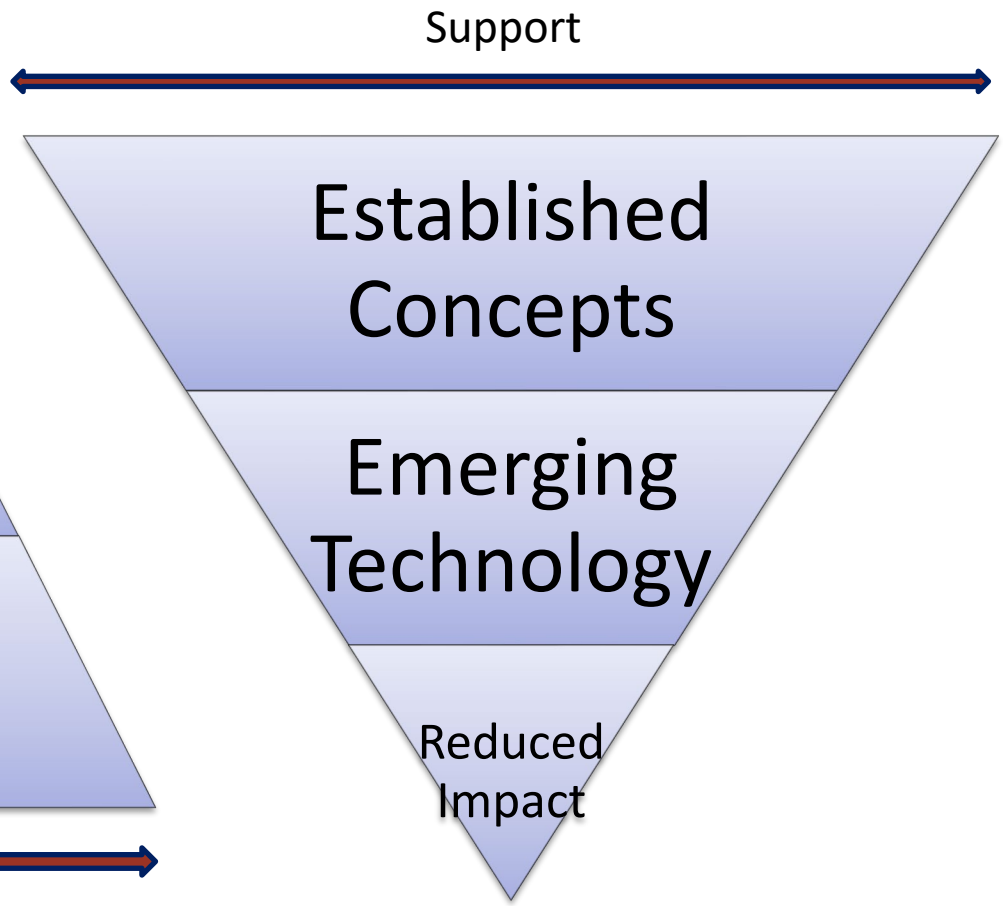


Climbing to Peak Efficiency (and Reduced Environmental Impact)

- "It will take a ~~village?~~"
- "It will take an industry!"

Climbing to Peak Efficiency (and Reduced Environmental Impact)





THANK YOU

AFIA'S 4 PROMISES

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