Dairy Precision Feeding:
Rapid Review
&
Ad Hoc Discussion Summary

Agriculture Workgroup

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Dairy Precision BMP Basics Simpson & Weammert (2009)

BMP Quick Guide

Definition: Formulate diets within 110% of Nutritional Research Council (NRC) recommended level

- Minimize **manure** N &P w/o negative affect on milk production

BMP Effectiveness

- **TN:** 25%
- **TP:** 24%
- **TSS:** 0%
- **Land Use:** Permitted Feed Space, Non-permitted Feed Space
- **Units Reported:** Animal Counts, Animal Units

All BMP effectiveness estimates are subject to potential future reviews according to the availability of new scientific information and CBP partnership needs, as defined in the BMP Review Protocol.

Dairy Precision Feeding

Ask:

Alternative Method for Tracking & Reporting

Approach Similar to Phytase Use in Poultry?

Considerations:

Lack of Resources to Track Individual Herds

Dairy Management Has Changed Since 2009

Phytase: From BMP to Model Assumption

Phase 5→ % effectiveness BMP

Phase 6→ <u>industry-wide change</u> in feed reflected in manure concentrations

- **No need for BMP**

WIP III SNAPSHOT:

State	2019 Progress % Implementation	WIP 2025 % Implementation (AU of dairy)
DE	0	100% (4308)
MD	0	47% (19400)
NY	3.8	3.7% (10371)
PA	0	42.2% (25879)
VA	0	100% (68962)
WV	0	0

Types of Relevant Data

- Data Collected by Coops
- Herd Location
  - By Zip Code?
- Animal Counts (based on herds)
  - Current unit for CBP (NEIEN)
- Milk Urea Nitrogen (MUN) analysis
- Manure Nutrient Concentration (fecal tests)
- Total Mixed Ration (TMR)

Possible Partners for Data Sharing

- Milk Coops
- Land Grant Universities
- Industry (Individual Company Agreements)
  - Want proof-of-concept to engage

CAST Potential: MUN Data

Across the board change in the industry?

If yes…

- Modify the amount of nutrients coming from cows (similar to phytase)
- Precision Dairy Feeding is *increasing* over time.
  - Educational initiatives
  - Popular Press
    - → Herd Health
    - → Milk Production
    - → Profit Margins

Is the change farm-by-farm?

If yes… ✓

- Treat it as a BMP

Questions to Consider

Hybrid Approach Proposed (Ad Hoc)

- Use BMP efficiency to apply to incrementally larger portion of animal units over time.
  - 2021→ 50% of herds @ 24% N reduction…
  - 2022→ 55% of herds…
  - 2023→ 60% of herds…

What About Phosphorus?

- If MUN is used to track DPF BMP, could the same logic be applied to P?