Subgroup #1: Fostering Markets for Non-Digester Projects

July 17, 2017
10:30am-2:00pm

Dairy and Livestock Working Group

Agenda

I. Welcome and Introductions
II. Context: Overview of SB 1383 and related initiatives
III. Ground rules for Subgroups
IV. Mission Statement review
    a. Mission, Process, Timeline, Deliverables
    b. Key Questions
V. Overview of practices
VI. Lunch Break (11:40-12:20)
VII. Discussion and refining of practices to assess
VIII. Upcoming meeting topics and dates
IX. Subgroup membership gaps
X. Public comments
XI. Next steps

II. Context: Overview of SB 1383 and related initiatives

III. Ground rules for Subgroups

IV. Mission Statement Review:

Mission, Process, Timeline, Deliverables

IV. Mission Statement Review:
Key Questions

V. Overview of Practices

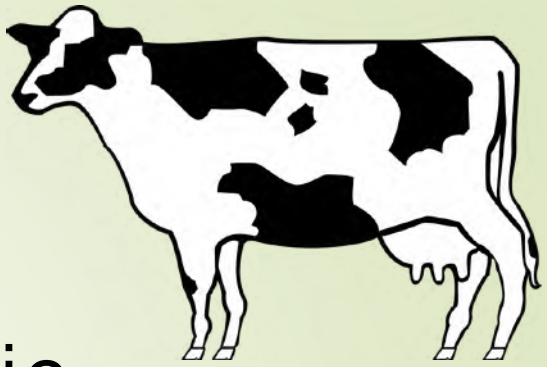
“Where do we start?” An overview of non-digester practices

As identified in public policy process related to SB 605 and SB 1383

July 17, 2017

Dairy and Livestock Greenhouse Gas Reduction Group,
Subgroup 1: Fostering Markets for Non-Digester Projects

Overview:



- Summarize consensus points from public policy discussion to date
- List practices/project types identified during various processes
- Present some previously identified practice-specific issues
- Frame our next steps

Key consensus points emerging from this process

- Digesters don't work for all dairies, so it will be difficult to achieve reduction goal with digesters (or any one practice/technology) alone.
- Methane reductions from manure management can be achieved with other practices besides digesters
- Utility and feasibility of practices may vary by region, climate, and style of dairy
- Economic models will be different than digesters because most AMMPs do not produce energy or fuel
- While there is a good scientific basis to expect GHG reductions from some practices, much more information is needed to quantify ranges of reductions possible with sufficient certainty
- As with digesters, environmental benefits/impacts to water and air quality should be understood and more data is needed

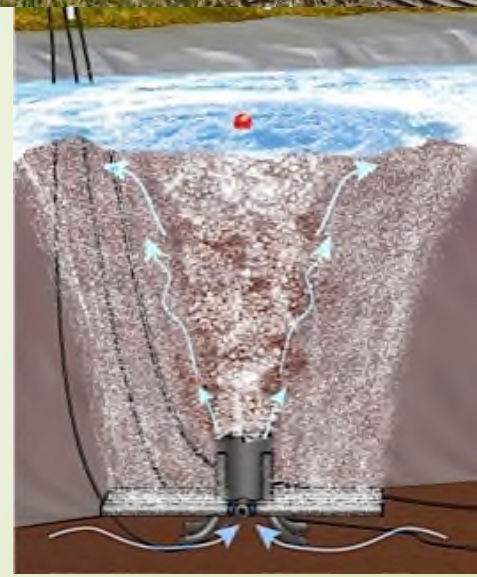
Major non-digester practices identified as meriting further evaluation and/or adoption

- Mentioned specifically in SB 1383 and ARB SLCP Reduction Strategy:
  - Composting
  - (Convert from flush to) scrape systems
  - Mechanical solids separation
- *Mentioned specifically in ARB SLCP Reduction Strategy (March 2017)*
  - *Conversion to pasture*




Other practices

- Bedded pack barns
- Permutations of “solids separation”
  - Addition of coagulants, polymers, other chemicals
  - Weeping walls
- Advanced technologies
  - Pyrolysis, gasification
- Lagoon aeration
- *Above practices mentioned in ARB-sponsored “Evaluation of Dairy Manure Management Practices for Greenhouse Gas Emissions Mitigation in California” (Kaffka et al, Feb. 2016) and/or during CDFA-sponsored AMMP workshops in early 2017*



Not exhaustive

- Initial goal was to summarize briefly for committee ideas that have been heard/documented in recent public process and discussion
- Committee and public input expected to:
  - Identify other potential practices for evaluation
  - Identify/modify specific issues/framework for evaluation (general and practice-by-practice)
  - Evaluate and make recommendations related to economic opportunities and barriers, regulatory issues, research needs and other key factors to determine feasibility and advance adoption where appropriate
- Committee/public input needed on priorities to evaluate

Example issues: Scrape systems

- Conversion of manure flushing to scrape systems (vacuum trucks, chain scrapers, etc.) produces a slurry with higher solids content but volatile solids not destroyed and manure can remain anaerobic
- What opportunities exist to store and further de-water and cause slurry to become dry enough to stack or compost? What is the potential for methane reduction compared to the system being replaced?
- What are the implications for other emissions and water quality?

Example issues: Compost

- Does composting already dry/stackable manure or separated solids reduce GHG emissions?
- Are present regulations creating barriers to increase manure composting and what can be done to address these?
- Do we fully understand the overall picture and balance of environmental benefits versus impacts of composting?
- Are there opportunities to strengthen markets related to compost to improve economics?

Example issues: Solids separation (with drying)

- What is the GHG reduction potential of this type of technology?
- What are the other environmental benefits and impacts and how much do they vary between different types of mechanical separation?
- How do these technologies perform in practice and what O&M is involved?
- What is the potential of the various permutations of this technology to provide additional revenue streams/economic benefits?

Example issues: Conversion to pasture-based systems

- What is the GHG reduction potential?
- What are the other environmental benefits and impacts?
- What conditions are needed to ensure success?
- How do acreage and irrigation needs compare to non-pasture dairies?

Summary

- Discussion to date has provided insight into priorities for further evaluation and adoption
- It will be up to this committee to:
  - Identify practices/technologies that merit evaluation by adding to and modifying this list
  - Identifying specific questions/information gaps to be addressed
  - Prioritizing committee evaluation topics within our time frame
  - Developing and delivering recommendations based on knowledge received

Summary (continued)

- Per our mission statement the basic framework for evaluation is:
  - Understand the potential for GHG reduction of the technology/practice
  - Understand non-GHG environmental impacts and benefits
  - Understand issues related to financial viability (capital, O&M, revenue potential from products or credits, operational cost offsets)
  - Develop recommendations to advance promising practices and technologies

Thank you

VI. Lunch Break

VII. Discussion and Refining of Practices to Assess

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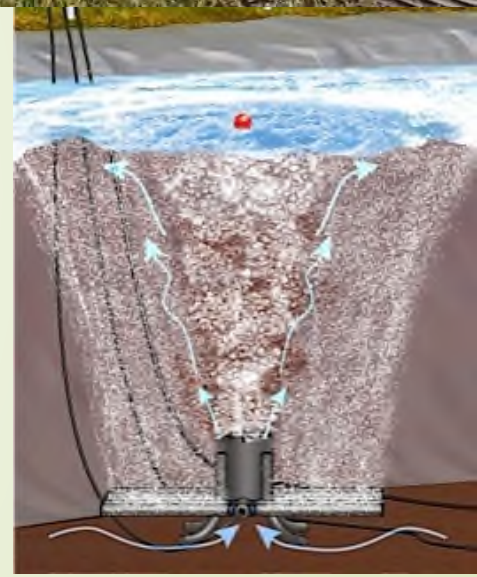

VIII. Upcoming Meeting Topics and Dates

IX. Subgroup Membership Gaps

X. Public Comments

XI. Next Steps