



Consideration of New Management Practices for the Alternative Manure Management Program



Public Comment Period Workshop

February 16, 2021

Outline

- Program Overview and Eligible Practices
- Request for Proposals New Management Practices
- Recommendations
- How to Submit Public Comments and Next Steps
- Questions



What is AMMP?

The CDFA Alternative Manure Management Program (AMMP) awards competitive grants to California dairy and livestock operations for non-digester technologies and specific management practices that result in long-term methane emission reductions and maximize environmental benefits.

2020 round:

- \$5.2-9.2 million available
- Solicitation released February 3, 2020, closed April 27, 2020
- October 2020 awards announced (13 AMMP projects, \$8.9 million)
- Projects term Feb 2021 Jan 2023



AMMP Projects 2017-2020

Projects: 117, Funding: \$69 million Estimated Reduction 1.13 million MTCO2e (5 years)



Eligible Practices

- AMMP supports project types for which there are methods to quantify GHG emission reductions
- 4 practices/project types:
 - 1. Pasture-based management
 - 2. Alternative manure treatment and storage (including compost bedded pack barn, slatted floor pit storage)
 - 3. Solid separation (eligible technologies include weeping wall, stationary screen, vibrating screen, screw press, centrifuge, roller drum, belt press/screen)*
 - 4. Conversion from flush to scrape*

*Solid separation and conversion from flush to scrape must be in conjunction with a manure treatment and/or drying practice

 Full list of incentivized practices: <u>https://www.cdfa.ca.gov/oefi/AMMP/docs/ListofAMMPPractices.pdf</u>

New Practices – Request for Proposals

- RFP released July 6, 2020; proposals due Sept 4, 2020
- Submission of proposals for additional/new practices to be considered for inclusion as AMMP eligible practices
- Requirements:
 - ✓ Proposed practices must <u>not</u> be proprietary or involve use of exclusive, proprietary products, materials, equipment
 - ✓ Proposed new technologies must be ready to deploy on a commercial scale
 - ✓ Proposals must include peer-reviewed and publicly available research literature supporting proposed practice(s)
 - Should demonstrate implementing practices achieves measurable, permanent methane reductions
 - Field study design and research findings must be statistically sound and significant
 - ✓ Practices involving addition of manure additives must include an analysis of environmental impacts and materials' safety, waste management and disposal procedures

• Recommendations to include if available:

- ✓ Life cycle assessment data for proposed manure management practices
- ✓ Published peer-reviewed data demonstrating environmental co-benefits

Submission Guidelines

• Must include:

 \checkmark Full name of submitting individual or entity

✓ Organization affiliation (if applicable)

✓ Contact information (phone number, email at minimum)

• Format of proposal:

✓ PDF

✓ Single space, font size 11 or larger

✓ No more than 3 pages. Supporting information (data, research papers) not included in page limit.

For more information and full Request for Proposals document, please visit: <u>https://www.cdfa.ca.gov/oefi/AMMP/</u>

Timeline

Activity	Tentative Dates (subject to change)
Request for Proposals Released	July 6, 2020
CDFA Workshops (Webinar)	August 6, 2020 (1:30 – 3 PM PT) August 7, 2020 (1:30 – 3 PM PT)
Proposals Due	September 4, 2020, 5:00 PM PT
CDFA, CARB and AMMP TAC Review	October – December 2020
Public Comment Period CDFA Workshop (Webinar)	February 1 – March 1, 2021 February 16, 2021
Finalize List of Practices and QM Development	March – June 2021

Recommendations

Consideration of New Practices Under the AMMP

CDFA accepted proposals for consideration of new practices to be included under the AMMP between July 6 and September 4, 2020. For details regarding the proposal requirements, process for consideration and submission, refer to the Request for Proposals provided below:

Request for Proposals: Consideration of New Management Practices for the Alternative Manure Management
 Program

Summary of Submitted Proposals 🖄

(New!) Recommendations for practices for potential inclusion under the AMMP following review are available for public comments through **March 1, 2021**. Comments must be submitted via email to cdfa.oefi_ammp_tech@cdfa.ca.gov by 5:00 p.m. PT on March 1, 2021.

Recommendations on Proposed Practices 🖄

To assist those interested in submitting public comments for new management practices being considered for inclusion under the Alternative Manure Management Program, CDFA OEFI staff will provide information regarding the process and requirements, and answer stakeholder questions in a webinar workshop on **Tuesday, February 16, 2021** from 10: 00 a.m. to 12:00 p.m. PT

Registration link: https://attendee.gotowebinar.com/register/3727825317334820878

Meeting Agenda 🖪

Interested stakeholders and members of the public are encouraged to register in advance using the link provided above. After registering, you will receive a confirmation email containing information about joining the webinar.



Proposal Overview

	Proposal Practice/Tech (by order received)
1	Storage acidification (BioCover)
2	Biomineral fertilizer (Plant Nutrition Technologies Inc.)
	 Application of recycled, nutrient rich soil fertilizer to improve farmland health and carbon sequestration
3-6	Flocculation assisting/enhancing solid-liquid separation (practice is similar in 4 proposals, Trident Processes, Figure 8, LWR, AST)
3-0	• Use of polymer or static media to increase separation and removal of fine manure solids beyond ability of mechanical separation
-	Low emission slurry spreading (Vogelsang)
	 Advanced methods (shallow disc injection, trailing shoe, dribble bars) for spreading manure on land
	Prescribed grazing (CalCAN)
8	• Method of animal and forage management done for a variety of outcomes, including improved herd and land management that
	can result in decreased greenhouse gas emissions
0	Vermifiltration (BioFiltro)
9	Waste management practice that relies on use of worms to treat liquid organic wastes.
10	Nitrogen cracker (JOZ)
	Extracts nitrogen (ammonia) by evaporation filtration and processes to mineral form/fertilizer
11	Composting with biochar (UCD, Pacific Biochar, USDA ARS)
	Co-composting animal manure with biochar prior to land application
	Manure drying and pelleting systems for poultry manure (Petaluma Farms)
12	 Improved inclusion of options and GHG calculator use for poultry manure management
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1. Storage Acidification (BioCover)

Brief description: Use of sulfuric acid to control pH value of manure slurry/effluent

Not recommended for inclusion under the AMMP.

Additional considerations/explanation:

Concerns on the practice include:

- Viability and scalability to California dairies given the large amount of concentrated acid that may be needed for California style dairies and manure storage (practice developed in Denmark for smaller dairies with solid/slurry style manure storage in tanks), and accessibility of equipment or service contracts needed for acid handling and application.
- Unknown environmental impacts related to storage and disposal of acid or acidified material, and land application of acidified manure or wastewater.
- Potential risks to worker health and safety with exposure to and handling of potentially large volumes of concentrated sulfuric acid.
- The acid is a consumable item with recurring expense.

2. Biomineral fertilizer (Plant Nutrition Technologies Inc.)

Brief description: Application of recycled, nutrient rich soil fertilizer to improve farmland health and carbon sequestration

Not recommended for inclusion under the AMMP.

- GHG reduction by carbon sequestration through land application of fertilizer is beyond the scope of the AMMP project boundary and GHG reduction calculations, which focus primarily on methane reduction.
- The submitted proposal indicated that the technology is in pilot stage and not commercially available.
- The proposal lacked an estimation of GHG reductions.

3 – 6. Flocculation Enhanced Solid-Liquid Separation

Brief description: Use of polymer or static media (e.g. beads) to increase separation and removal of fine manure solids beyond ability of mechanical separation. Four proposals submitted with similar practice type.

Recommended for inclusion under the program with additional data requested as part of grant application. Practice must be proposed in conjunction with solid separation. Applicants would be required to include information on the following as attachments:

a. Type of flocculant/polymer proposed must have already been through a public process (for example, CEQA) for potential environmental impact to various media, including soil quality, water quality, air emissions, etc.

b. Efficacy of volatile solid removal for GHG reductions must be quantitatively well-documented.
c. Since flocculants can be used differently from original proposal, for instance, intermittently used, project must include how ongoing permanent GHG reductions will be achieved for the life of the project.
d. Ongoing cost considerations past the project term and commitment.

Additional considerations/explanation: flocculant/media may be a recurring expense. If not continued, the project would not achieve GHG emission reductions beyond a typical solid separation which is already eligible under the AMMP and is a lower cost system. Therefore, additional requirements are proposed to ensure long-term operation of this practice.

7. Low emission slurry spreading (Vogelsang)

Brief description: Advanced methods (shallow disc injection, trailing shoe, dribble bars) for spreading manure on land

Not recommended for inclusion under the AMMP.

- The practice is beyond the scope of the AMMP project boundary as land application of manure is not included in the AMMP GHG calculations.
- Primary focus of the practice is on ammonia reduction rather than methane.
- Practice may be potentially constrained by nutrient application frequency and plant uptake, which are dependent on allowable nutrient application limits set in the dairy's nutrient management and waste discharge plans.

8. Prescribed grazing (CalCAN)

Brief description: Method of animal and forage management done for a variety of outcomes, including improved herd and land management that can result in decreased greenhouse gas emissions

Not recommended for inclusion under the AMMP.

- GHG reduction by soil carbon sequestration is beyond the scope of the AMMP project boundary and GHG reduction calculations, which focus primarily on methane reduction.
- Reduction in enteric emissions claimed but not substantiated by published research.
- Where Grazing Management Plan involves increased pasture time for animals, it may fit under the existing "pasture-based management" category within the AMMP.
- Prescribed Grazing is already an eligible practice under the Healthy Soils Program.

9. Vermifiltration (BioFiltro)

Brief description: Waste management practice that relies on use of worms to treat liquid organic wastes.

Recommended for inclusion only in conjunction with an existing eligible methane reduction practice such as solid separation.

Additional considerations/explanation:

 Recommendation is based on methane reductions achieved largely through solid separation. The vermifiltration process reduces nitrogen, however, published scientific literature does not demonstrate quantifiable methane reductions through this practice in absence of an additional system such as a solid separator. Nitrogen reduction is an added desirable benefit, which is already eligible as nutrient management technology under the AMMP.

10. Nitrogen cracker (JOZ)

Brief description: Extracts nitrogen (ammonia) by evaporation filtration and processes to mineral form/fertilizer

Not recommended for inclusion under the AMMP.

- Primary focus of the practice is ammonia reduction rather than methane.
- The mechanism of the technology, energy inputs and information regarding potential pollutants generated as a result of this practice were not included in the proposal and not available in scientific literature.
- Methane reduction is achieved only through flaring. Methane flaring is not in alignment with the goals of CDFA's Dairy Methane Reduction Programs. Beneficial use of methane rather than flaring is encouraged in the California Short-Lived Climate Pollutant reduction strategy.

11. Composting with biochar (UCD, Pacific Biochar, USDA ARS)

Brief description: Co-composting animal manure with biochar prior to land application

Not recommended for inclusion under the AMMP.

- GHG reduction by soil carbon sequestration and biochar land application is beyond the scope of the AMMP project boundary and GHG reduction calculations, which focus primarily on methane reduction.
- Proposal for biochar application to soil has also been submitted for consideration under the Healthy Soils Program and is currently being evaluated.

12. Manure drying and pelleting systems for poultry manure (Petaluma Farms)

Brief description: Improved inclusion of options and GHG calculator use for poultry manure management

Not recommended for inclusion separately under the AMMP.

Additional considerations/explanation:

 Poultry as a livestock category is already eligible under the AMMP. The suggested type of manure treatment and/or storage (drying) may already be eligible under Program. CDFA will examine the existing Benefits Calculator Tool and Quantification Methodology with the California Air Resources Board to identify challenges and ways to ensure that eligible livestock categories are able to access the calculator.

How to Submit Public Comments

- **Recommendations** for practices for potential inclusion under the AMMP following review are available for public comments.
- Comments must be submitted via email to cdfa.oefi_ammp_tech@cdfa.ca.gov by 5:00
 p.m. PT on March 1, 2021.
- Next steps: Finalize List of Practices and QM Development (tentatively March June 2021)



QUESTIONS?

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