



United States Department of Agriculture
Natural Resources Conservation Service

CSP Job Sheet

Air Quality Enhancement Activities – Agricultural Odor



Enhancement Activities

CSP offers the opportunity to reward or encourage activities that address air quality and atmospheric change issues related to agricultural operations.

Benefits

These activities will provide observable improvements in air quality by reducing airborne odors from animal production and waste management, utilization, and disposal.

CSP Payments

A participant can earn payments by initiating or maintaining any of the following activities:

- Install windbreaks around facilities to disrupt wind flow and dilute concentrations of odorous substances in the air, and intercept and filter odorous substances in the air
- Inject waste 2 inches or more below soil surface or incorporate applied waste within 24 hours
- Use odor-control additives in manure storage structures and areas
- Conduct an on-farm odor assessment at your facility
- Use biofilters on animal buildings to filter exhausts
- Utilize dry scrubbers to treat exhaust gases from animal buildings
- Utilize an approved feed management system using animal nutrition planning for odor control

CSP Enhancement Activity Task Sheet
Air Resources: Agricultural Odor

Client's Acknowledgement Statement:

I have elected to use the following Air Resource Management activities and understand the requirements of the selected activities (Check all that apply):

- Use biofilters on animal buildings to filter exhausts (Odor-01)
- Utilize dry scrubbers to treat exhaust gases from animal buildings (Odor-02)
- Utilize an approved feed management system using animal nutrition planning for odor control (Odor-03)
- Install windbreaks around facilities to disrupt wind flow and dilute concentrations of odorous substances in the air, and intercept and filter odorous substances in the air (Odor-04)
- Inject waste 2 inches or more below soil surface or incorporate applied waste within 24 hours (Odor-05)
- Use odor-control additives in manure storage structures and areas (Odor-06)
- Conduct an on-farm odor assessment at your facility (Odor-07)

I agree that the following information will be provided to NRCS upon request:
Written documentation of the activity performed (use attached worksheets or equivalent).
Copies of dated receipts for equipment or services purchased.

I understand that CSP Enhancements earnings are subject to payment caps and that my actual payments will depend on my CSP Tier level, the land area affected and the number of activities.

I understand that it is my responsibility to obtain all necessary permits and to comply with all laws, regulations and ordinances pertaining to the application of these activities.

Accepted by: /s/ _____

Date: _____



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- Worksheet 01: Use biofilters on animal buildings to filter exhausts (Odor-01)

Payment: \$XX/cubic feet per minute air flow treated

A biofilter is a layer of organic material (woodchips, straw, compost, or other organic material) through which odorous air from an animal building is passed. Microbes in the organic material convert odorous compounds to carbon dioxide and water. For a complete description of biofilter function, design, and operation criteria, see **Schmidt, Janni, and Nicolai, 2004, Biofilter Design Information, Biosystems and Agricultural Engineering Update 18, University of Minnesota Extension Service** (<http://www.manure.umn.edu/assets/baeu18.pdf>).

- Attach design criteria and specifications, and operational specifications, for the biofilter specific to your operation. Include photographs of functioning biofilters on buildings at your operation

Briefly describe your animal operation (including number of animals, type of facility, and biofilter placement) and your evaluation of the effectiveness of the biofilters to reduce odors coming off your operation:



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- Worksheet 02: Utilize dry scrubbers to treat exhaust gases from animal buildings (Odor-02)

Payment: \$XX/cubic feet per minute air flow treated

- Attach design criteria and specifications, and operational specifications, for the dry scrubber specific to your operation. Include photographs of functioning dry scrubbers on buildings at your operation.

Briefly describe your animal operation (including number of animals, type of facility, and dry scrubber placement) and your evaluation of the effectiveness of the dry scrubber to reduce odors coming off your operation:



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- Worksheet 03: Utilize an approved feed management system using animal nutrition planning for odor control (Odor-03)

Payment: \$XX/animal unit equivalent

Feed management / animal nutrition planning controls the inputs to animals, which reduces undigested or partially digested compounds, reducing chemical concentrations in manure, and reducing the potential for odor emissions from animals and their manure.

- Attach receipts showing purchase of feed rations which can control animal odor, and provide a copy of a feed management plan which utilizes feed rations which reduce animal and manure odor

Briefly describe your animal operation (including number of animals, type of facility, and feed management plan) and your evaluation of the effectiveness of the feed management to reduce odors coming off your operation:



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- Worksheet 04: Install windbreaks around facilities to disrupt wind flow, and intercept and dilute concentrations of odorous substances in the air (Odor-04)

Payment: \$XX/treated animal unit equivalent
\$XX/100 ft of windbreak

Tree windbreaks can reduce odors emitted from confined livestock and manure storage facilities. Windbreaks can help mix the odorous compounds vertically in the air by disrupting airflows around animal facilities; they can also intercept solid and liquid particles carrying odorous compounds on leaves and needles, serving as a filter to reduce the amount of odor being carried in the air.

- Attach a drawing or aerial photograph of the operation showing the placement of animal and waste storage facilities, and position of windbreaks and provide photographs of the positioning of windbreaks in relation to the animal and waste facilities

Briefly describe your animal operation (including type and number of animals, type of waste storage, and windbreak placement) and your evaluation of the effectiveness of the windbreaks to reduce odors coming off your operation:



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Worksheet Odor 05: Inject waste 2 inches or more below soil surface within 24 hours (Odor-05)

Payment: \$XX/treated acre

Directly incorporating solid, or injecting liquid animal waste into topsoil significantly decreases odor emissions, and can have additional fertilization benefits.

Use the table below to document dates, treatment acres, waste type, and method (solid incorporation or liquid injection).

Field Name	Date	# Acres	Waste Type	Method
	TOTAL ACRES:			



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- Worksheet 06: Use odor-control additives in manure storage structures and areas (Odor-06)

Payment: \$XX/animal unit equivalent

Odor control additives are combined with manure to reduce production of odorous compounds from the manure. Many additives are an enzyme- or bacteria-based treatment which enhances bacterial populations in the animal waste. Some additives counteract chemical compounds which can cause odor; others absorb or adsorb chemical compounds, or serve as deodorants to mask the generated odors.

- Attach receipts showing purchase of manure additives which can control animal odor
- Provide copy of a manure additive plan which utilizes additives to reduce manure odor

Briefly describe your animal operation, including number of animals, manure storage facilities, type and quantity of odor control additives you use, and your evaluation of the effectiveness of odor control additives to reduce odors coming off your operation:



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- Worksheet Odor-07: Conduct an on-farm odor assessment at your facility (Odor-07)

Payment: \$XXXX/assessment

An on farm odor assessment looks at a producer's pork, dairy, poultry or beef operation to identify potential odor sources, existing odor control measures, and suggest further activities to control odor emissions and transport from the facility. The assessment shall be conducted by a certified third party with experience in odor and odor control associated with an animal production facility. The assessment will evaluate the operation, including its production and waste storage facilities, identify potential odor sources, and evaluate the effectiveness of any existing odor control practices at the facility.

- Attach the certified report generated from the odor assessment for your facility