

STAPPA/ALAPCO

AGRICULTURE COMMITTEE

***AGRICULTURE-AIR QUALITY ISSUES
STATE AND LOCAL SURVEY***

FALL 2001

EXECUTIVE SUMMARY

The STAPPA/ALAPCO Agriculture Committee commissioned this survey in the summer of 2001 in order to collect information related to several agricultural sources of air pollution of significance to state and local air agencies. The Agriculture Committee sought to collect comprehensive information about all state and local air agencies' legal authorities to regulate agricultural sources of air pollution in their jurisdictions.

The Agriculture Committee sent questionnaires to 49 states and 166 local air agencies. The Committee received completed questionnaires from 23 state and 32 local air agencies. This is a fraction of the total questionnaires that were sent and since the respondents were self-selected, the results are not scientific. Nevertheless, the results of the survey show a clear trend toward some regulation in this field:

- The overwhelming majority of state and local air agencies that responded said they have authority to regulate air emissions, but most of the respondents exempt all agricultural activities from regulation.
- Most responded that they do not regulate air emissions from concentrated animal feeding operations (CAFOs).
- However, half of the state agency respondents and a third of local agency respondents regulate odors and fugitive dust from CAFOs.

Notes:

Throughout the survey and this report, "agricultural sources" means animal and crop production activities (e.g., animal feeding, fertilizer application, crop burning).

Some respondents did not answer all questions and some follow-on questions elicited more than one response.

GENERAL QUESTIONS ABOUT REGULATORY ACTIVITIES

Does your agency have any legal authority to regulate agricultural sources as air pollution sources?

	YES	NO
STATES	21.5	1.5
LOCAL	26	6

The overwhelming majority of state and local agencies regulate agricultural emissions. Rhode Island was the only state respondent that does not regulate agricultural sources and Oklahoma indicated that its authority was limited (thus the fractional response). While most states and localities have overlapping jurisdiction, California has delegated its authority to local air quality management districts, while Maryland's authority is centralized in Annapolis.

Most state agencies derive their authority to regulate agricultural sources from a general authority to regulate air quality. However, many states have enacted specific exemptions for certain types of agricultural activity (e.g. burning of crop residues, emissions from orchard heaters). Local authority is either overlapping, or derived from specific grants from the states.

Irrespective of any legal authority, does your agency generally exempt from regulation sources of air pollution resulting from normal agricultural practices?

	YES	NO
STATES	17	6
LOCAL	18	13

While the great majority of state and local governments have the authority to regulate air pollution resulting from agricultural activity, three-quarters of the responding states and nearly 60% of the local respondents exempt agricultural activity as a matter of practice. There were variations within states. California localities were split 2:1 for exempting agricultural air pollution (the state agency also exempts agriculture).

Apart from legal authority, does your agency support practical enforcement of an agricultural source’s potential-to-emit?

	YES	NO
STATES	11	10
LOCAL	15	13

Respondents were split on this question. Respondents answering “yes” focused on the need to treat agricultural emissions similarly to other emissions and on the public health impact. Those answering no saw the need to remain within the confines of applicable statutes.

AIR QUALITY INFORMATION ON CONCENTRATED ANIMAL FEEDING OPERATIONS

The STAPPA/ALAPCO Agriculture Committee collected information from some state and local air agencies on environmental regulations related to Concentrated Animal Feeding Operations (CAFOs), including Best Management Practices (BMPs). While most existing CAFO regulations address water pollution impacts, a growing number of regulations and strategies are being implemented to address air quality impacts from CAFOs.

Does your air agency regulate CAFOs?

	YES	NO
STATES	8	15
LOCAL	7	25

If Yes, which of the following approaches does your agency use?

	STATES	LOCAL
Air quality regulations	7	3
Air quality permits	5	3
BMPs	3	1
Other:	3 (Odor, Registration,	1 (Nuisance)

	Statute)	
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Two thirds of the state respondents and more than three quarters of the local agencies surveyed do not regulate CAFOs (the majority of respondents appear to have interpreted this question as asking whether CAFOs are regulated under air quality laws specifically).

Does your agency regulate odors with respect to CAFOs?

	YES	NO
STATES	12	11
LOCAL	10	21

If Yes, which of the following are elements of your regulations?

	STATES	LOCAL
Limit # of animals per site	1	0
Odor boundaries	1	0
Setback requirements	2	0
Nuisance/Odor standards	8	9
Other:	3 (BMPs, Lagoon cover, Public health)	1 (CA health code)

About half of the state agencies and a third of the local respondents regulate odors with respect to CAFOs, mostly by setting nuisance and / or odor standards rather than through specific regulation of CAFOs. Several respondents indicated that while they did not regulate CAFO odors, other agencies did (agriculture department, water regulators).

Does your air agency regulate Total Reduced Sulfur (TRS) or hydrogen sulfide (H₂S)?

	YES	NO
STATES	6	17
LOCAL	8	23

If Yes, which of the following are elements of your regulations?

	STATES	LOCAL
Limit # of animals per site	0	0
TRS/H₂S boundaries	0	0
Setback requirements	0	0
Ambient air quality standards	3	5
Other:	4 (Emissions limits, Permit requirements, Prevention of Significant Deterioration)	2 (Stationary source, Source impact level)

About one-in-four state and local respondents regulate TRS or H₂S emissions, primarily through ambient air quality standards.

Does your agency regulate fugitive dust created by CAFOs?

	YES	NO
STATES	11	12
LOCAL	12	19

About half of state respondents and more than a third of local agencies regulate fugitive dust created by CAFOs.

Please list all Internet web site addresses, including those of your agency, that provide air quality information on CAFOs.

USDA – www.nrcs.usda.gov

Ohio – www.state.oh.us/agr

Virginia – www.vdacs.state.va.us

Maryland – www.mda.state.md.us

Nebraska – www.deq.state.ne.us (see Title 130, chapter 11; Title 129, Chapter 32)

Ohio State University – www.ag.ohio-state.edu

4CleanAir – www.4cleanair.org/members/committee/agriculture/CAFO.html

ACTIVITIES AND PROJECTS RELATED TO AGRICULTURAL SOURCES OF AIR POLLUTION

The Agriculture Committee also surveyed state and local air agencies' air quality activities and projects related to agricultural sources of air pollution.

Has your agency implemented, or does it have plans to implement, air emission programs or projects related to agricultural sources of air pollution?

	YES	NO
STATES	12	11
LOCAL	11	20

Slightly more than half of state respondents and a third of the state agencies surveyed have implemented or have plans to implement some sort of air emission program or project to address agricultural sources of air pollution.

If Yes, please describe:

	STATE	LOCAL
Odor control	1	0
Feeding regulations	1	0
Studies	3	0
Haze reduction	2	0
Permitting	2	1
Fugitive dust reduction	2	3
Enforcing state rules	0	1
Emissions monitoring	0	1
Ag retrofit	0	1
Livestock waste emissions reduction	0	1
Livestock / ag operations emissions rules	0	1
Burning regulations / permits	0	5
Pesticide regulations	0	1
Emissions credits	0	1

Those states and localities that do have air pollution programs or projects related to agricultural sources use a variety of methods to address them.

If you have developed, or are developing, emission inventories and/or emission factors for agricultural production sources of air pollution, which pollutants are being inventoried?

	STATE	LOCAL
Ammonia	10	3
TRS/H ₂ S	0	0
Volatile organic compounds	6	9
PM ₁₀ and/or PM _{2.5}	9	9
Air Toxics	4	1
NO _x	3	5
Other	0	2 (SO ₂ , O ₃ inventory)

Of the localities that have developed emission inventories and/or emission factors for agricultural production sources of pollution, most are concerned with volatile organic compounds and PM₁₀ or PM_{2.5}. While both of these categories are also the subject of state action, state governments are most concerned about ammonia emissions.

Please provide references of emission factors or other emissions estimation methods that are being used:

Respondents (primarily at the state level) used a variety of factors and methods. Some examples:

Washington: “We use EPA emissions factors as the standard. Sometimes emissions factors from the various California air districts are useful.”

Utah: “Estimates of crop acreage and numbers of livestock are obtained from the annual Utah Dept. of Agriculture statistical publication. Each emission calculation is crop-specific to the extent possible.

- 1) Dust stirred up by tractors: California Air Resources Board PM10 emissions factors
- 2) The VOC content of applied pesticides: AP42 factors
- 3) The natural VOC and ammonia emitted during the growth of the plant: EPA’s biogenic emissions model
- 4) PM10, NOx, CO, and VOC from burning of chaff after harvest: AP42 factors
- 5) PM10, NOx, CO, and VOC from engines of farm equipment: EPA’s software model
- 6) Ammonia from livestock waste: estimates are animal-type specific.”

Maryland: “Carnegie Mellon NH3 model; Battye emission factors; EiiP and California PM emission factors, NOx –Neves or NR-model; VOC primarily pesticide/herbicide applications.”

California: “ARB area source methods, AP-42, others, N3 studies, PM studies and smoke studies.”

Colorado: “Conducted a literature review and averaged the emission factor data in good studies to derive EF’s.”

Tucson, Arizona: “Standard AP-42.”

San Luis Obispo, California: “CARB Area source Emission Inventory methodologies.”

Seattle, Washington: “Ammonia emission factors used are from CARB, San Diego AQMD jurisdictions, EPA Trends Table 4.8-5; activity levels from WA agricultural statistics.”

Does your agency conduct ambient air (source-receptor) monitoring of agricultural production sources?

	YES	NO
STATE	8	15
LOCAL	3	27

Only a third of state respondents and 10% of local respondents conduct ambient air monitoring of agricultural production areas. Those respondents who do monitor are most apt to look at ammonia, PM10, and TRS/H2S emissions, especially those from animal production facilities.

If Yes, what air pollutants do you monitor?

	STATE	LOCAL
Ammonia	4	0
TRS/H2S	3	0
Volatile organic compounds	0	1
PM10	5	2
Air Toxics	1	0
NOx	0	1
Other	1 (Organic acids, atrazine)	1 (Material being used & applied)

If Yes, which agricultural sources do you monitor?

	STATE	LOCAL
Animal Production Facilities	5	0
Crop Production Areas	2	0
Other	1 (smoke and dust)	1 (sewer & ambient air) 2 (monitoring not ag specific)

Please list any Internet web sites you believe would be good sources of information related to agricultural air emissions.

Agricultural Air Quality Task Force - <http://www.nhq.ncrs.usda.gov/faca/>
Minnesota Genetic Impact Statement on Animal Agriculture - <http://www.mnplan.state.mn.us/eqb/geis>
Illinois Traill - <http://il-traill.outreach.uiuc.edu>
NRCS Ecological Sciences Division - <http://www.nhq.ncrs.usda.gov/BCS/esd.html>
North Carolina DAQ (ammonia study) – <http://www.daq.state.nc.us/Offices/Monitoring/Projects/>
Oregon – http://oda.state.or.us/Natural_Resources/smoke.html
California Air Resources Board: <http://www.arb.ca.gov>
Ohio – www.epa.state.oh
Washington State University – <http://smokey.ce.wsu.edu/agricult.htm>
Iowa State - <http://extension.agron.iastate.edu/immag/>

STATE AND LOCAL EMERGENCY PLANS FOR DISPOSING OF DISEASED ANIMALS

Recent outbreaks of contagious diseases (e.g., mad cow, foot and mouth) affecting cattle outside the U.S. have highlighted the need for emergency disposal plans in this country. In response, many states and localities have developed, or are developing, emergency plans for disposing of diseased animals. Disposal of diseased animals by incineration and burial are the two principal strategies contained in emergency plans. Incineration poses significant air quality impacts while burial poses significant water quality impacts.

The survey responses indicate that this is an issue that is primarily being handled at the state (as opposed to local) level and that with the exception of Iowa, state air regulatory agencies are playing a supporting, rather than a lead role.

Does your jurisdiction have an emergency disposal plan for addressing outbreaks of contagious diseases (e.g., mad cow, foot and mouth)?

	YES	NO
STATE	19	4
LOCAL	4	24

If Yes, what role did your air agency have in developing the emergency plan?

	STATE	LOCAL
Primary Agency Developing Plan	1	0
Advisory Agency to Department of Agriculture (or Other Dept.)	18	2
No role	0	2

If No, is your jurisdiction developing an emergency disposal plan?

	YES	NO
STATE	1	2
LOCAL	1	22

Burial is the preferred method of disposing of the carcasses of diseased animals, but several respondents indicated that multiple disposal methods would be considered at the time disposal efforts would be required.

If your jurisdiction has an emergency plan, which disposal strategy is recommended? (Please rank – 1, 2, etc. -- the following disposal strategies in the order of preference provided in your emergency plan)

NOTE: Rank is average. "Other" is not ranked.

	STATE	LOCAL
Burial	1.1	1
Incineration	1.7	1.3
Other	Case-by-case, rendering, left to individual counties (WA)	Case-by-case

If your jurisdiction's emergency plan calls for animal incineration as the primary disposal strategy, what (if any) air quality protections are built into the plan to minimize impacts to air quality? Some examples:

Kentucky: "The plan is fairly weak from an air quality standpoint. It suggests promotion of good combustion and use of materials that will sustain the fire, unfortunately including things like used tires. The plan acknowledges that environmental waivers may be necessary prior to proceeding."

Colorado: "Permit is required prior to burning animal carcasses. The prescription would be analyzed to ensure optimal burning conditions and location [and to] analyze the impact to downwind receptors. Notification requirement also included."

Iowa: "If level three [incineration] were ever activated, monitoring and evacuation procedures are in place."

California: "If incineration was used it would have to be conducted under the guidelines of existing air districts' smoke management programs."

San Luis Obispo, CA: "Large animals and large numbers of animals: use of curtain burner equipment, forced air fans, or similar technology. Crematoria (afterburner) would be used in most small animal cases."

Please list any web sites, including your agency's, with useful information on emergency plans for disposing of diseased animals.

USDA – <http://www.aphis.usda.gov/oa/fmd/emergewp.html>

Wisconsin Department of Agriculture –

http://datcp.state.wi.us/ah/agriculture/animals/disease/foot-mouth-disease/emer_plan.html

North Carolina – <http://www.dem.dcc.state.nc.us/>

Illinois – <http://www.agr.state.il.us>

Virginia Department of Emergency Management – www.vdem.state.va.us

Oregon –

http://www.oda.state.or.us/Livestock_Health_ID/FMD_Information_sources.htm

Maryland Department of Agriculture – www.mda.state.md.us

California – www.cdfa.ca.gov/afhss/ah/disaster_preparedness.htm
Ohio – www.state.oh.us/agr/fmdpresentation.htm