Negative Brief: CAFO Air Pollution

NEGATIVE PHILOSOPHY / OPENING QUOTES 3

Manufactured crisis 3

MINOR REPAIRS 3

Send out brochures telling people what to expect if they move out to the country next to a farm 3

INHERENCY 3

1. Already regulated 3

CAFOs are already well-regulated, including odor management plans and inspections 3

No barrier: CAFO air pollution can be regulated today under Clean Air Act and CERCLA (Superfund) 3

2. States can solve 4

States have jurisdiction and are taking action to solve CAFO emissions 4

States can solve CAFO air emissions. Example: Idaho 4

States can solve CAFO emissions. Example: California 5

State action is better than federal: Experimentation among the states develops & spreads new and better ideas 5

3. Local agencies can solve 5

Local zoning ordinances can solve 5

4. EPA study underway 6

EPA study underway: They’ll decide on regulations once they finish evaluating the data 6

5. Worker mobility 6

If work conditions are bad, they can quit. They do all the time 6

6. Community outreach 6

CAFOs that conduct community outreach solve for complaints. Example: Ohio 6

HARMS / SIGNIFICANCE 7

Many of the neighbor complaints are bogus: When investigated, they find no odor and no drop in property values 7

Schmalzried & Fallon Study: CAFO neighbor complaints aren’t based on reality 7

Schmalzried & Fallon Study: No difference in quality of life living near CAFOs compared to far away 7

German study found allergies are the biggest factor for childhood respiratory issues, not farm exposure 8

Studies are few and potentially biased. Review finds little compelling evidence of association between AFOs and disease 8

Studies linking odor and wheezing are flawed and little evidence is found when measuring across the studies 9

Inadequate research exists to support taking action on CAFOs. We need more research to control for the effects of allergies 9

Evidence standard for what kind of studies it would take to prove CAFOs harm human health 10

Qualifications of the seven O’Connor group study authors 10

Methodology and conclusions of the O’Conner group study: Inconsistent evidence of weak association related to allergies 11

SOLVENCY 11

1. More Study Needed – on the emissions problem 11

GAO Study: EPA doesn’t have enough data to know how to regulate CAFO emissions 11

More study needed: We don’t have adequate credible data on emissions from Animal Feeding Operations (AFOs) 12

2. More Study Needed – on pollution control technology 12

EPA hasn’t done enough research on emission reduction technology 12

More study needed and currently underway on emissions reduction methods 12

3. Emissions control technology not ready or not feasible 12

Emissions control technology not ready or not proven 12

Odor control strategies have limitations and are expensive or not economically feasible 13

Anaerobic / biogas electricity generation – not feasible 13

4. Complaints won’t stop 13

People won’t stop complaining until everything is shut down 13

DISADVANTAGES 14

Big Links to Everything: More regulation of CAFOs will drive them out of business 14

Link and Brink: CAFOs are already regulated – any more will drive them out of business 14

Brink: Farms have no margin to absorb increased regulatory costs 14

1. Higher Food Costs 14

Link: CAFOs go out of business. [See Big Link above] 14

Link: Higher food costs, because CAFOs lower food costs compared to other farming methods 14

Impact: Americans go hungry when food prices rise 15

2. Farm Community Economic Damage 15

Link: CAFOs go out of business. [See Big Link above] 15

Impact: CAFOs have a net positive economic impact on farm communities even accounting for the problems they have 15

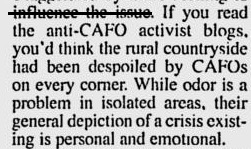
SOURCE INDICTMENTS 16

Sigurdson study on childhood asthma 16

NEGATIVE PHILOSOPHY / OPENING QUOTES

Manufactured crisis

David Kruse 2007 (President of Commstock Investments) THE DAILY REPORTER (Iowa newspaper) 15 Dec 2007 <https://news.google.com/newspapers?nid=1907&dat=20071215&id=tdVGAAAAIBAJ&sjid=p_0MAAAAIBAJ&pg=1251,2863416>



MINOR REPAIRS

Send out brochures telling people what to expect if they move out to the country next to a farm

Christopher Weber 2014 (journalist) 27 Jan 2014 “Stink Wars: When a Foul Wind Wafts From a Farm, Is it a Problem?” <http://modernfarmer.com/2014/01/stink-wars-foul-wind-wafts-farm-problem/>

To help prepare new residents for manure smells, Ottawa County, Michigan produced and distributed a brochure in 2003 called “If You Are Thinking about Moving to the Country.” It included a scratch-and-sniff area that smelled of cow dung. The [brochure](http://www.progressivedairy.com/index.php?option=com_content&view=article&id=120%3A0406-anm-scratch-and-sniff-redux-odor-complaints-float-away&catid=99%3Apast-articles&Itemid=59) reportedly led to a [dramatic reduction](http://www.progressivedairy.com/index.php?option=com_content&view=article&id=120%3A0406-anm-scratch-and-sniff-redux-odor-complaints-float-away&catid=99%3Apast-articles&Itemid=59) in odor complaints.

INHERENCY

1. Already regulated

CAFOs are already well-regulated, including odor management plans and inspections

CNBC 2014 (journalist Mark Koba) 9 May 2014 “Oh the smell! Zoning battle rages over farm odors” <http://www.cnbc.com/2014/05/09/smelly-farms-the-battle-to-keep-bad-odors-down-on-the-farm.html> (brackets added)

While mostly protected under right-to-farm laws, CAFOs have specific federal and state regulations. They are required to have a nutrient management and odor management plan and face inspections from state officials—rules [Pennsylvania farmer Paul] Dagostin said he follows to the letter. "Everything I do is legal and highly regulated," said Dagostin, whose farmland has been in the family for decades. "We put in additives to cut down on the smell, and we inject the manure in the ground."

No barrier: CAFO air pollution can be regulated today under Clean Air Act and CERCLA (Superfund)

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf>

Nevertheless, certain large animal feeding operations are subject to environmental regulation. The primary regulatory focus on environmental impacts has been on protecting water resources and has occurred under the Clean Water Act. In addition, facilities that emit large quantities of air pollutants may be regulated under the Clean Air Act. Some livestock operations may also be subject to the release reporting requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (the Superfund law) and the Emergency Planning and Community Right-to-Know Act.

2. States can solve

States have jurisdiction and are taking action to solve CAFO emissions

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf>

State programs, under statutes and regulations, both implement and supplement federal CAA requirements. That is, in some cases, state programs have been adopted to ensure state compliance with requirements of the federal law and to implement SIPs, such as facility permits that apply to construction and operation of livestock operations. In other cases, states have enacted more comprehensive laws and regulations calling for air emission testing and monitoring, manure management to abate pollutant emissions, inspections, and testing. Some states have regulatory programs or ambient air standards for odor and/or certain AFO pollutants, such as hydrogen sulfide, for which no NAAQS apply. In states with significant animal production, facility management statutes often govern construction and operation of AFOs, primarily for purposes of protecting water quality, with incidental provisions for air quality. For example, facility management statutes often contain setback requirements for confinement buildings and waste impoundments that may help to reduce air emissions by avoiding or minimizing odor nuisances.

States can solve CAFO air emissions. Example: Idaho

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf> (brackets added)

A 2004 lawsuit brought in federal court by environmentalists argued that feedlots must be regulated under the CAA and must obtain a CAA “permit to construct” under provisions of the Idaho SIP [State Implementation Plan]. The company, intending to construct a large feedlot, had argued that the SIP did not A 2004 lawsuit brought in federal court by environmentalists argued that feedlots must be regulated under the CAA and must obtain a CAA “permit to construct” under provisions of the require a permit for key pollutants from agricultural sources, including ammonia and hydrogen sulfide. In September 2004, the court ruled that the state’s plan did not allow such exemptions, indicating that any agricultural facility in the state with sufficient emissions levels would have to obtain a permit. The case was settled early in 2005 when the parties to the lawsuit agreed to request that the Idaho Department of Environmental Quality conduct a rulemaking to establish a process for CAA [Clean Air Act] permitting of dairies in the state. Industry officials say the case had limited implications, because it refers specifically to the Idaho SIP, but environmentalists involved in the case believe it could have significance nationally because of the mutual agreement by the parties on emissions factors for ammonia that trigger CAA thresholds for dairies. In response to this case, in 2006 Idaho finalized a requirement that dairies and other CAFOs obtain air quality permits if they emit 100 tons or more of ammonia per year. The rule made Idaho the first state to regulate ammonia emissions from CAFOs.

States can solve CAFO emissions. Example: California

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf> (brackets added)

The state and its local air quality management districts (in California, the state sets overall rules and policies, and 35 local agencies have primary day-to-day responsibility) are now implementing SB 700. The law mandated that the state Air Resources Board review scientific information and adopt a definition of large confined animal facilities by July 2005; that information is now being used by local air districts to begin issuing permits to facilities and adopting various regulations to control emissions. Under SB 700, the district rules must require facilities to obtain permits and to reduce emissions to the extent feasible. For severe and extreme ozone nonattainment areas, the law requires best available retrofit control technology (BARCT). In moderate and serious areas, regulated facilities will need to use reasonably available control technology (RACT). In federal ozone attainment areas where air quality problems are less significant, districts must adopt a rule requiring existing large confined animal facilities to reduce air contaminants to the extent feasible unless the district makes a finding that such facilities will not contribute to a violation of any state or federal standard. Regulated facilities were required to prepare emission mitigation plans and comply with them by July 1, 2008. The definition of “regulated facility” developed by the state board seeks to include the majority of emissions, or animals, which are in the larger livestock facilities in the state. By focusing on large facilities and excluding smaller farms, dairies and other operations, the board expects to obtain the most air quality benefit while regulating the fewest number of facilities.

State action is better than federal: Experimentation among the states develops & spreads new and better ideas

Prof. Graeme Boushey 2012. (Robert Wood Johnson Scholar in Health Policy Research at the University of Michigan and assistant professor at Univ of California, Irvine. ) Punctuated Equilibrium Theory and the Diffusion of Innovations POLICY STUDIES JOURNAL, January 2012 <http://onlinelibrary.wiley.com/doi/10.1111/j.1541-0072.2011.00437.x/full>

Although federalism makes policy coordination difficult, it also creates opportunities for considerable policy innovation, as municipal, county, and state governments develop new policies to address local concerns. Federalism encourages venue shopping, a process where activists and interest groups strategically exploit the multiple venues of government to secure support for their legislative programs ([Baumgartner & Jones, 2009](http://onlinelibrary.wiley.com/doi/10.1111/j.1541-0072.2011.00437.x/full#b3); [Holyoke, 2003](http://onlinelibrary.wiley.com/doi/10.1111/j.1541-0072.2011.00437.x/full#b21); [Pralle, 2003](http://onlinelibrary.wiley.com/doi/10.1111/j.1541-0072.2011.00437.x/full#b37)). This process increases the number of new ideas entering the political systems and can create conditions where “new ideas or policy images may spread rapidly across linked venues, thus setting in motion a positive feedback process” ([Baumgartner & Jones, 2009](http://onlinelibrary.wiley.com/doi/10.1111/j.1541-0072.2011.00437.x/full#b3), p. 240).

3. Local agencies can solve

Local zoning ordinances can solve

CNBC 2014 (journalist Mark Koba) 9 May 2014 “Oh the smell! Zoning battle rages over farm odors” <http://www.cnbc.com/2014/05/09/smelly-farms-the-battle-to-keep-bad-odors-down-on-the-farm.html> (brackets added)

To help tighten up rules governing the expansion of certain farm activities, Salem Township [Pennsylvania] has set a May 14 vote to change some of its zoning laws. Township supervisor Kishbaugh said the changes, if approved, would create more physical separation between farms and other properties—while calling for better farm water pollution testing.

4. EPA study underway

EPA study underway: They’ll decide on regulations once they finish evaluating the data

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf> (brackets added)

Listing ammonia and hydrogen sulfide as criteria pollutants would trigger a requirement to set NAAQS [National Ambient Air Quality Standards]for those pollutants. Further, in 2011, a coalition of 20 groups led by the Environmental Integrity Project petitioned EPA under CAA Sections 108 and 109 to regulate ammonia as a criteria pollutant under the act. EPA is reviewing both petitions, but has not yet responded to either (there is no statutory deadline for EPA to act on such petitions), in part because the agency has been gathering and evaluating CAFO emissions data through a national monitoring study as a prerequisite for future regulatory action. EPA expects to make joint decisions related to these petitions in order to avoid regulatory duplication.

5. Worker mobility

If work conditions are bad, they can quit. They do all the time

Dr. Roman Keeney 2008 (PhD in agricultural economics) Community Impacts of CAFOs: Labor Markets <https://www.extension.purdue.edu/extmedia/ID/ID-362-W.pdf>

Employers indicated that 60 percent of those leaving the workforce were terminated due to performance, with the remainder of departures split between higher wage opportunities and a desire to no longer work at a CAFO. The high level of terminations is an indicator of both a need for reliable employees and some specialized skills required for CAFO jobs while the number departing for higher wages indicates that some of the skills might be transferred to other opportunities. Departures for other reasons point to work conditions that some employees consider unsuitable.

6. Community outreach

CAFOs that conduct community outreach solve for complaints. Example: Ohio

Cheryl Day 2013 (journalist) 28 July 2013 “CAFO can be 'good neighbor'” <http://feedstuffsfoodlink.com/story-cafo-good-neighbor-0-100754>

Ohio livestock farmers are seeing the advantage of being good community members. Overall, the state is experiencing a decline in the number of complaints filed against livestock operations that want to build. White attributes this trend to a change in approach by Ohio livestock farmers; more livestock farmers are making community outreach a priority. For example, a fourth-generation family swine operation wanted to expand. The family recognized the changing demographics of the neighborhood: The operation was now surrounded by rows of house inhabited by residents that worked in Columbus, Ohio, and sported different lifestyles. The family quickly realized that changes in certain management practices must be adopted in order to avoid potential neighborhood conflicts. Some areas of improvement included changing the method of manure application from surface applied to injected, trying to avoid freshly applying manure on weekends and openly inviting the community to visit the farm. The family fully reaped the benefit of being a good neighbor when it came time to file the permit to expand with the state; the family did not receive one complaint.

HARMS / SIGNIFICANCE

Many of the neighbor complaints are bogus: When investigated, they find no odor and no drop in property values

Carrie Hribar 2010 (M.A., Project Coordinator – Education & Training, National Association of Local Boards of Health) “Understanding Concentrated Animal Feeding Operations and Their Impact on Communities” <https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf>

One study found that 82.8% of those living near and 89.5% of those living far from CAFOs believed that their property values decreased, and 92.2% of those living near and 78.9% of those living far from CAFOs believed the odor from manure was a problem. The study found that real estate values had not dropped and odor infestations were not validated by local governmental staff in the areas. However, the concerns show that CAFOs remain contentious in communities (Schmalzried and Fallon, 2007).

Schmalzried & Fallon Study: CAFO neighbor complaints aren’t based on reality

Dr. H.D. Schmalzried & Dr. L F. Fallon Jr. 2007 (Schmalzried – PhD in Public Health Administration. Fallon – M.D., PhD, Doctor of Public Health, MBA, M.S., M.A.)“Assessing Concerns of Neighbors About Quality-of-Life Issues” <http://renlink.rennut.com/articles/pdf/Assessing%20Concerns%20of%20Neighbors%20About%20Quality-of-Life%20Issues.pdf>

We found that the accuracy of quality-of-life concerns that were expressed about living near a large-scale dairy operation was not based on reality. According to realtors familiar with the study area, real estate transfers within 16.1 km of the 2 large-scale dairy operations had not shown declining values since the dairies became operational. Where real estate values had appreciated, the rate of increase for land near to and distant from a CAFO was approximately the same. No complaints about drinking water quality, odors, or fly infestations had been verified by the relevant governmental risk managers concerning either large-scale dairy operation included in the study.

Schmalzried & Fallon Study: No difference in quality of life living near CAFOs compared to far away

Dr. H.D. Schmalzried & Dr. L F. Fallon Jr. 2007 (Schmalzried – PhD in Public Health Administration. Fallon – M.D., PhD, Doctor of Public Health, MBA, M.S., M.A.)“Assessing Concerns of Neighbors About Quality-of-Life Issues” <http://renlink.rennut.com/articles/pdf/Assessing%20Concerns%20of%20Neighbors%20About%20Quality-of-Life%20Issues.pdf>

This study provided some clarification regarding the intensity of opinions that have been expressed about these four quality-of-life concerns often associated with living near large-scale dairies. We found that whether people lived in close proximity (upwind or downwind) or 8 km away (rural or urban) did not matter; the opinions of residents about quality-of-life issues were similar. The opinions of the individuals we surveyed were not supported by objective data (property values, water quality issues, odors, and fly nuisances). Property values have not declined, water quality has not been affected, odor problems have not been documented, and no fly nuisance complaints have been received. Also, odors usually disperse or dissipate after traveling 8 km, and they do not travel upwind.

German study found allergies are the biggest factor for childhood respiratory issues, not farm exposure

Annette M. O'Connor , Brent Auvermann, Danelle Bickett-Weddle, Steve Kirkhorn, Jan M. Sargeant, Alejandro Ramirez, Susanna G. Von Essen 2010 (O’Connor - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Auvermann - Texas AgriLife Research, Amarillo, Texas. Bickett-Weddle - Center For Food Security/Public Health, College of Veterinary Medicine, Iowa State Univ. Kirkhorn - National Farm Medicine Center, Marshfield Clinic, Wisconsin. Sargeant - Centre for Public Health and Zoonoses, and Dept of Population Medicine, Ontario Veterinary College, Canada. Ramirez - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Von Essen - Dept of Environmental, Agricultural and Occupational Health, College of Public Health, Univ of Nebraska Medical Center) 10 Mar 2010 The Association between Proximity to Animal Feeding Operations and Community Health: A Systematic Review <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0009530>

In a German study that assessed the variable self-reported wheeze, the odds of disease were highest in German adults living with >12 animals houses within 500 meters (OR = 2.45, 95% CI 1.22 to 4.90). However, the majority of significant associations were identified when study subjects with allergies or parents with allergies were evaluated. Children with self-reported allergies reported increased prevalence of self-reported wheeze if they lived within two to three miles of the nearest AFO (OR = 1.12, 95% CI 1.04 to 1.19), attended schools with less than two million hog pounds within three miles of the school (OR = 1.07, 95% CI 1.01–1.12) and were in the low exposure category (OR = 1.10, 95% CI, 1.03–1.18). Surprisingly, the categories of these variables representing the highest level of these exposure measures were not associated with increased prevalence of disease, i.e., children with self-reported allergies who lived within two miles of the nearest AFO (OR = 1.01, 95% CI, 0.95–1.07), attended schools with five million hog pounds within three miles of school (OR = 1.00, 95% CI 0.89 to 1.11) and were in the high exposure category (OR = 1.01, 95% CI 0.89 to 1.11).

Studies are few and potentially biased. Review finds little compelling evidence of association between AFOs and disease

Annette M. O'Connor , Brent Auvermann, Danelle Bickett-Weddle, Steve Kirkhorn, Jan M. Sargeant, Alejandro Ramirez, Susanna G. Von Essen 2010 (O’Connor - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Auvermann - Texas AgriLife Research, Amarillo, Texas. Bickett-Weddle - Center For Food Security/Public Health, College of Veterinary Medicine, Iowa State Univ. Kirkhorn - National Farm Medicine Center, Marshfield Clinic, Wisconsin. Sargeant - Centre for Public Health and Zoonoses, and Dept of Population Medicine, Ontario Veterinary College, Canada. Ramirez - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Von Essen - Dept of Environmental, Agricultural and Occupational Health, College of Public Health, Univ of Nebraska Medical Center) 10 Mar 2010 The Association between Proximity to Animal Feeding Operations and Community Health: A Systematic Review <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0009530>

The purpose of this review was to evaluate the studies reporting the association between animal feeding operations and measures of the health of individuals living near animal feeding operations but not actively engaged in livestock production in North America, the European Union, the United Kingdom, and Scandinavian countries. Based on the magnitude and the consistency of associations observed there was little compelling evidence for a consistent strong association between clinical measures of disease and proximity to AFOs. However, the body of work is small in this area and based on epidemiological studies which have greater potential for bias. There was inconsistent evidence of a small increase in self-reported disease in people with allergies or familial history of allergies. The magnitude of associations for this subgroup of the population lay within 10% points of the null value (0.99 to 1.12) indicating a<10% increase in the prevalence of adverse health outcomes, with one exception, which reported an approximately 20% increase in prevalence of adverse outcomes. What was surprising about these associations was the lack of any indication of a dose response. Evidence of a dose response would have added weight to evidence of an association. For all of the associations evaluated, the explanatory variables were ordinal in nature, presumably designed to capture a dose response. The WHO Guidelines for Evaluation of Environmental Evidence suggest that the presence of a biological gradient is helpful in proposing a causal association for environmental health hazards.

Studies linking odor and wheezing are flawed and little evidence is found when measuring across the studies

Annette M. O'Connor , Brent Auvermann, Danelle Bickett-Weddle, Steve Kirkhorn, Jan M. Sargeant, Alejandro Ramirez, Susanna G. Von Essen 2010 (O’Connor - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Auvermann - Texas AgriLife Research, Amarillo, Texas. Bickett-Weddle - Center For Food Security/Public Health, College of Veterinary Medicine, Iowa State Univ. Kirkhorn - National Farm Medicine Center, Marshfield Clinic, Wisconsin. Sargeant - Centre for Public Health and Zoonoses, and Dept of Population Medicine, Ontario Veterinary College, Canada. Ramirez - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Von Essen - Dept of Environmental, Agricultural and Occupational Health, College of Public Health, Univ of Nebraska Medical Center) 10 Mar 2010 The Association between Proximity to Animal Feeding Operations and Community Health: A Systematic Review <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0009530>

There was evidence of a dose response for exposure variables that described aversion to odor; those individuals with the strongest aversion/detection to livestock odor were associated with the highest odds of self-reported wheeze. Using the odds ratio as the effect measure, the magnitude of the associations with odor were high, up to 300% increase in the odds of self reported outcomes in individuals who were strongly annoyed by odor. However, none of the clinical measures showed an association with measures of odor, which would have made the associations more compelling and demonstrated consistency of the association across various outcome measures. The location of the effect measure estimates and the width of the corresponding confidence intervals for clinical measure of disease showed little evidence of a consistent association, even a weak association, across the studies.

Inadequate research exists to support taking action on CAFOs. We need more research to control for the effects of allergies

Annette M. O'Connor , Brent Auvermann, Danelle Bickett-Weddle, Steve Kirkhorn, Jan M. Sargeant, Alejandro Ramirez, Susanna G. Von Essen 2010 (O’Connor - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Auvermann - Texas AgriLife Research, Amarillo, Texas. Bickett-Weddle - Center For Food Security/Public Health, College of Veterinary Medicine, Iowa State Univ. Kirkhorn - National Farm Medicine Center, Marshfield Clinic, Wisconsin. Sargeant - Centre for Public Health and Zoonoses, and Dept of Population Medicine, Ontario Veterinary College, Canada. Ramirez - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Von Essen - Dept of Environmental, Agricultural and Occupational Health, College of Public Health, Univ of Nebraska Medical Center) 10 Mar 2010 The Association between Proximity to Animal Feeding Operations and Community Health: A Systematic Review <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0009530>

A previous narrative review of the topic has suggested that “sufficient research supports actions to protect rural residents from the negative impacts of CAFOs on community health” and only mechanism research was warranted. However, the results of the current review do not strongly support this statement. The results of this review suggest that further research is warranted, particularly toward understanding proximity to animal agriculture, odor and mental health and the subgroup of people with self-reported allergies.

Evidence standard for what kind of studies it would take to prove CAFOs harm human health

Annette M. O'Connor , Brent Auvermann, Danelle Bickett-Weddle, Steve Kirkhorn, Jan M. Sargeant, Alejandro Ramirez, Susanna G. Von Essen 2010 (O’Connor - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Auvermann - Texas AgriLife Research, Amarillo, Texas. Bickett-Weddle - Center For Food Security/Public Health, College of Veterinary Medicine, Iowa State Univ. Kirkhorn - National Farm Medicine Center, Marshfield Clinic, Wisconsin. Sargeant - Centre for Public Health and Zoonoses, and Dept of Population Medicine, Ontario Veterinary College, Canada. Ramirez - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Von Essen - Dept of Environmental, Agricultural and Occupational Health, College of Public Health, Univ of Nebraska Medical Center) 10 Mar 2010 The Association between Proximity to Animal Feeding Operations and Community Health: A Systematic Review <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0009530>

It is imperative that future researchers evaluate the characteristics of the studies in the body of work and understand the limitations and strive to improve the designs used. Such an approach to future research will improve the evidentiary value of the work and its use for decision-making. Recommendations for design features that should be incorporated into future studies would include the use of quantifiable clinical outcomes and measures of exposure to AFOs, limits on the number of outcomes assessed or adjustment for multiple comparisons, inclusion of sample size justification and the null hypothesis to be tested, random selection of study participants, longitudinal study designs, appropriate evaluation of dose responses and the use of statistical methods that account for clustering when appropriate. Further, the combination of experimental and observational studies will likely be helpful in future causal discussions. Both study types should be included in future research as evidence from a mixture of well executed studies will be important for establishing if a causal association exists.

Qualifications of the seven O’Connor group study authors

Annette M. O'Connor , Brent Auvermann, Danelle Bickett-Weddle, Steve Kirkhorn, Jan M. Sargeant, Alejandro Ramirez, Susanna G. Von Essen 2010 (O’Connor - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Auvermann - Texas AgriLife Research, Amarillo, Texas. Bickett-Weddle - Center For Food Security/Public Health, College of Veterinary Medicine, Iowa State Univ. Kirkhorn - National Farm Medicine Center, Marshfield Clinic, Wisconsin. Sargeant - Centre for Public Health and Zoonoses, and Dept of Population Medicine, Ontario Veterinary College, Canada. Ramirez - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Von Essen - Dept of Environmental, Agricultural and Occupational Health, College of Public Health, Univ of Nebraska Medical Center) 10 Mar 2010 The Association between Proximity to Animal Feeding Operations and Community Health: A Systematic Review <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0009530>

The final seven reviewers included two veterinarians' with doctoral degrees in epidemiology, an occupational health physician with a masters degree in public health, pulmonologist with expertise in occupational lung disease with a masters degree in public health, one veterinarian with a masters degree in public health, one veterinarian with a doctoral degree in microbiology, and an agricultural engineer with a doctoral degree in chemical and bioresource engineering.

Methodology and conclusions of the O’Conner group study: Inconsistent evidence of weak association related to allergies

Annette M. O'Connor , Brent Auvermann, Danelle Bickett-Weddle, Steve Kirkhorn, Jan M. Sargeant, Alejandro Ramirez, Susanna G. Von Essen 2010 (O’Connor - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Auvermann - Texas AgriLife Research, Amarillo, Texas. Bickett-Weddle - Center For Food Security/Public Health, College of Veterinary Medicine, Iowa State Univ. Kirkhorn - National Farm Medicine Center, Marshfield Clinic, Wisconsin. Sargeant - Centre for Public Health and Zoonoses, and Dept of Population Medicine, Ontario Veterinary College, Canada. Ramirez - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Von Essen - Dept of Environmental, Agricultural and Occupational Health, College of Public Health, Univ of Nebraska Medical Center) 10 Mar 2010 The Association between Proximity to Animal Feeding Operations and Community Health: A Systematic Review <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0009530>

Methodology/Principal Findings  
The review was restricted to studies reporting respiratory, gastrointestinal and mental health outcomes in individuals living near AFOs in North America, European Union, United Kingdom, and Scandinavia. From June to September 2008 searches were conducted in PUBMED, CAB, Web-of-Science, and Agricola with no restrictions. Hand searching of narrative reviews was also used. Two reviewers independently evaluated the role of chance, confounding, information, selection and analytic bias on the study outcome. Nine relevant studies were identified. The studies were heterogeneous with respect to outcomes and exposures assessed. Few studies reported an association between surrogate clinical outcomes and AFO proximity. A negative association was reported when odor was the measure of exposure to AFOs and self-reported disease, the measure of outcome. There was evidence of an association between self-reported disease and proximity to AFO in individuals annoyed by AFO odor.  
Conclusions/Significance  
There was inconsistent evidence of a weak association between self-reported disease in people with allergies or familial history of allergies. No consistent dose response relationship between exposure and disease was observable.

SOLVENCY

1. More Study Needed – on the emissions problem

GAO Study: EPA doesn’t have enough data to know how to regulate CAFO emissions

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf>

In 2008, the Government Accountability Office (GAO) issued a report evaluating EPA’s activities to regulate air emissions and water discharges from animal feeding operations. GAO found that EPA is unable to assess the extent to which pollution from feedlots may be impairing human health and the environment, because it lacks data on the amount of pollutants that CAFOs are releasing to the air and water. GAO recommended that EPA develop a comprehensive national inventory of CWA-permitted CAFOs and accelerate its efforts to develop protocols for measuring and quantifying air contaminants from animal feedlots. GAO noted that EPA has been criticized because its current air emissions monitoring activities are limited in scope and sample size and may not produce sufficient information to shape future regulation.

More study needed: We don’t have adequate credible data on emissions from Animal Feeding Operations (AFOs)

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf>

However, animal feeding operations can also result in emissions to the air of particles and gases such as ammonia, hydrogen sulfide, and volatile organic chemicals (VOC). At issue today are questions about AFOs’ contribution to total air pollution and corresponding ecological and possible public health effects. Resolving those questions is hindered by a lack of adequate, accurate, scientifically credible data on air emissions from AFOs, data that are needed to gauge possible adverse impacts and subsequent implementation of control measures.

2. More Study Needed – on pollution control technology

EPA hasn’t done enough research on emission reduction technology

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf>

In its 2003 report, the National Research Council observed that EPA and USDA have not devoted the necessary technical or financial resources to estimate air emissions and develop mitigation technologies, and it criticized both for failing to address this deficiency in defining high-priority research programs. The report said, “Each has pursued its regulatory and farm management programs under the assumption that the best currently available information can be used to implement its program goals.” It concluded that a change in research priorities in both agencies is needed if air emissions are to be addressed with an adequate base of scientific information. There appears to be wide agreement among stakeholder groups on the need for more research on a large number of related issues, but congressional interest in supporting or funding more federal participation in research activities is unclear.

More study needed and currently underway on emissions reduction methods

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf>

While many treatment technologies are available that may be important in mitigating emissions, the effectiveness of most of them is not well quantified. Extensive research programs are underway in the United States and Europe, and many options of varying cost and effectiveness are being evaluated. Livestock emission mitigation research is being performed by the University of California at Davis, California State University Fresno, Purdue University, Texas A&M University, and others, and information on available control measures and strategies for agricultural sources of air pollution is being resented.

3. Emissions control technology not ready or not feasible

Emissions control technology not ready or not proven

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf>

As noted above, emissions of odors, gases, and dust from livestock production facilities arise from buildings, manure storage, and land application. Eliminating emissions from one of these sources will likely not eliminate emissions entirely, as control technologies often address only one of the three sources. Many of the available technologies reduce emissions; none eliminates them. Some technologies have been evaluated to the point of demonstrating efficacy, but most have not been evaluated systematically.

Odor control strategies have limitations and are expensive or not economically feasible

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf>

Outdoor storage is the most apparent source of odors. Controls that have been shown to be effective when managed properly include various types of covers (permeable and impermeable, natural such as straw or cornstalks, and synthetic). Techniques to manipulate the manure to minimize emissions also exist but have certain limitations. For example, separating solids from liquid manure reduces the load on anaerobic lagoons, but also creates a second waste stream to manage which may be detrimental to overall air quality. Proper aeration will eliminate odors from outdoor storage, but it is expensive in a liquid system. Anaerobic digesters reduce odors, but they are also not economically feasible.

Anaerobic / biogas electricity generation – not feasible

Dr. John A. Kilpatrick 2015 (PhD; visiting scholar in real estate finance at the Zicklin School of Business, Baruch College.) THE APPRAISAL JOURNAL Winter 2015 “Animal Operations and Residential Property Values” <http://www.myappraisalinstitute.org/webpac/pdf/TAJ2015/TAJ_WI15_p041-050_Feat3-AnimalOperations.pdf> (Brackets added; parentheses in original)

The purpose of Keske’s study was to provide guidance on the financial feasibility of a biogas-fueled cogeneration facility. The study recognizes the significant production of flammable biogas by AOs [animal operations] and notes the feasibility of biogas-fueled cogeneration is limited by a number of factors. First, the up-front costs can be prohibitive—typically $1.2 million, and up to $5 million depending on the technology used. Also, annual operating costs are significant, and while these technologies are sold with the promise of offsetting electric bills, Keske notes that in the study area (Colorado) electricity rates are already lower than other parts of the United States. Hence, AO operators should be “particularly wary of relying on anaerobic digestion to generate revenues by selling electricity to the utility.”

4. Complaints won’t stop

People won’t stop complaining until everything is shut down

CNBC 2014 (journalist Mark Koba) 9 May 2014 “Oh the smell! Zoning battle rages over farm odors” <http://www.cnbc.com/2014/05/09/smelly-farms-the-battle-to-keep-bad-odors-down-on-the-farm.html> (brackets added)

But [Pennsylvania farmer Paul] Dagostin said the problem goes beyond the nose test. "I can understand them being upset, but we would have to shut down everything that smells to make people happy," he argued. "This is about being a farmer."

DISADVANTAGES

Big Links to Everything: More regulation of CAFOs will drive them out of business

Link and Brink: CAFOs are already regulated – any more will drive them out of business

Leonard Blackham 2007 (Commissioner, Utah Department of Agriculture and Food; Chairman, NASDA Natural Resources and Pesticide Management Committee Veterinarian) statement before the U.S. Senate Environment and Public Works Committee on Concentrated Animal Feeding Operations (CAFOs) and Environmental Issues Facing Agriculture Thursday, September 6, 2007 <http://www.epw.senate.gov/public/?a=Files.Serve&File_id=C329A13C-1441-47A0-9D79-DB2D19138D36>

Animal agriculture operations and manure managements are already regulated under the Clean Water Act, Clean Air Act, and various state laws to protect the environment. These laws and regulations provide for permitting, enforcement, and if necessary, remediation. It is important to note that CERCLA/EPCRA clearly exempt the application of chemical fertilizers containing the same constituents as manure–orthophosphate, ammonia, and hydrogen sulfide–which occur naturally in the environment. This is not a large versus small farm issue. CERCLA/EPCRA current reporting requirements and liability thresholds for non-agricultural releases/emissions of regulated substances are quite low. This means virtually any agricultural operation producing, storing, and/or using animal manure could be held liable under laws. We do not want agriculture to be driven out of business or outside our borders by the heavy hand of government.

Brink: Farms have no margin to absorb increased regulatory costs

Leonard Blackham 2007 (Commissioner, Utah Department of Agriculture and Food; Chairman, NASDA Natural Resources and Pesticide Management Committee Veterinarian) statement before the U.S. Senate Environment and Public Works Committee on Concentrated Animal Feeding Operations (CAFOs) and Environmental Issues Facing Agriculture Thursday, September 6, 2007 <http://www.epw.senate.gov/public/?a=Files.Serve&File_id=C329A13C-1441-47A0-9D79-DB2D19138D36>

Many on-farm environmental enhancements are beyond the short-term and even long-term economic payback for producers. For example, many conservation practices have high capital or management input costs, but do not generate additional revenues. Agriculture is not organized in a fashion that allows increased costs of production to be passed on to consumers. As such, on-farm expenditures for conservation compete directly with servicing farm debt, and other family financial needs. In addition, implementing more stringent and complex standards usually increases the need for more costly approaches and technologies.

1. Higher Food Costs

Link: CAFOs go out of business. [See Big Link above]

Link: Higher food costs, because CAFOs lower food costs compared to other farming methods

CNBC 2014 (journalist Mark Koba) 9 May 2014 “Oh the smell! Zoning battle rages over farm odors” <http://www.cnbc.com/2014/05/09/smelly-farms-the-battle-to-keep-bad-odors-down-on-the-farm.html> (brackets added)

CAFOs,[which produce the majority of U.S. livestock](http://www.factoryfarmmap.org/wp-content/uploads/2010/11/FactoryFarmNation-web.pdf), have [come under a fair amount of criticism](http://www.epa.gov/region07/water/cafo/cafo_impact_environment.htm) over the years. Critics say they force livestock into confined spaces while producing manure that gets stored in pits or vats that could leak into local water supplies. Others point out, however, [that when properly managed, located and monitored](http://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf), CAFOs can provide a cheaper source of meat, milk and eggs, due to efficient feeding and housing of animals.

Impact: Americans go hungry when food prices rise

HUFFINGTON POST 2011. “Rising Food Prices Intensify Poverty, Hunger In U.S. And World  
 18 March 2011 <http://www.huffingtonpost.com/2011/03/18/rising-food-prices-hunger_n_837664.html> (ellipses in original)

According to [Gallup Polls](http://www.gallup.com/poll/113827/Eating-Well-Life-Satisfaction-Global-View.aspx) conducted between 2006 and 2008, 16 percent of people in the Americas have gone hungry due to finances. And the trend of rising food prices is going to push more and more families into that category. The [U.S. Labor Department released its consumer price index survey](http://www.bls.gov/news.release/cpi.nr0.htm) this week. It reports that the price of grains such as corn, wheat and soybeans has roughly doubled since last summer, due mainly to bad harvests and also the use of corn for ethanol. Wholesale food prices rose by 3.9 percent in February — the sharpest increase in more than 36 years. Meat and dairy prices also rose, as did fresh vegetable prices, leaping by nearly 50 percent in February. And the Department predicted that “food costs are likely to keep climbing for most of this year.” The effect of rising food prices can be seen in Lee County, Alabama, where more than 3,000 families accessed the Community Market food bank during the past year, as reported by [CNN](http://www.cnn.com/2011/US/03/15/rising.food.prices/). Community Director Elsie Lott told CNN, “If prices go up any more, you are going to see more people here and other food banks... People that used to give us food are now asking for it.” One in four Americans is “worried about having enough money to put food on the table in the next year,” reports the [Food Research and Action Center](http://frac.org/one-in-four-americans-worried-about-having-enough-money-for-food/) (FRAC). Their information comes from a national hunger survey conducted last month by Hart Research Associates, commissioned by FRAC and Tyson Foods, Inc.

2. Farm Community Economic Damage

Link: CAFOs go out of business. [See Big Link above]

Impact: CAFOs have a net positive economic impact on farm communities even accounting for the problems they have

Jungik Kim, Peter Goldsmith and Michael H. Tomas 2010. (Goldsmith - Assistant Professor and NSRL Fellow in Agricultural Strategy in the Dept of Agricultural and Consumer Economics at the University of Illinois. Kim - Ph.D. Graduate in the Dept of Urban Planning at Univ of Illinois. Thomas - Assoc Professor in Agribusiness Program at Florida A & M Univ) AGRICULTURE AND HUMAN VALUTES “[Economic impact and public costs of confined animal feeding operations at the parcel level of Craven County, North Carolina](http://philpapers.org/go.pl?id=KIMEIA-2&proxyId=&u=http%3A%2F%2Fdx.doi.org%2F10.1007%2Fs10460-009-9193-x)” <http://philpapers.org/rec/KIMEIA-2>

Conflicts have arisen between communities and operators of confined animal feeding as farms have become bigger in order to maintain their competitiveness. These conflicts have been difficult to resolve because measuring and allocating the benefits and costs of livestock production is difficult. This papers demonstrates a policy tool for promoting compromise whereby the community gets reduced negative impacts from livestock while at the same time continues to benefit from livestock jobs, taxes, and related economic activity. Public economic benefits and public economic costs of confined animal feeding operations are estimated for every farm and affected house in Craven County, North Carolina. The results show public economic benefits of $5.7 million and public economic costs of $2.2 million, but that the ratio of benefits to costs for individual farm-house pairs varies in important ways across the 26 hog farms in Craven County

SOURCE INDICTMENTS

Sigurdson study on childhood asthma

Annette M. O'Connor , Brent Auvermann, Danelle Bickett-Weddle, Steve Kirkhorn, Jan M. Sargeant, Alejandro Ramirez, Susanna G. Von Essen 2010 (O’Connor - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Auvermann - Texas AgriLife Research, Amarillo, Texas. Bickett-Weddle - Center For Food Security/Public Health, College of Veterinary Medicine, Iowa State Univ. Kirkhorn - National Farm Medicine Center, Marshfield Clinic, Wisconsin. Sargeant - Centre for Public Health and Zoonoses, and Dept of Population Medicine, Ontario Veterinary College, Canada. Ramirez - Department of Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State Univ. Von Essen - Dept of Environmental, Agricultural and Occupational Health, College of Public Health, Univ of Nebraska Medical Center) 10 Mar 2010 The Association between Proximity to Animal Feeding Operations and Community Health: A Systematic Review <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0009530>

For example, Sigurdarson reported a cross sectional study where the measure of the exposure to AFOs was the location of the elementary school with respect to an AFO. A binary outcome (asthma, yes/no) was measured on individual students at the school. However, the study included only one school for each level of the exposure variable, i.e., one school in Northeast Iowa 0.5 miles from a facility that housed 3800 hogs and one control school with no facility within 10 miles. The school-level exposure variable was not measured at the same hierarchical level as the outcome, asthma in the individual child, and therefore no variation within site was possible. The results were potentially confounded by other factors associated with each school, such as the condition of the school building and the presence of other local industries, and the outcome, asthma.