

Appendix O - Sources Cited, Reviewed or Considered

Journal Articles and Book Chapters:

- Anderson, Natalie et al. 2003. Airborne reduced nitrogen: ammonia emissions from agriculture and other sources. *Environment International* 29: 277-286.
- Aguerre, M.J. et al. 2010. Effect of Dietary Crude Protein on Ammonia-N emission measured by herd nitrogen mass balance in a freestall dairy barn managed under farm-like conditions. *Animal*. 4: 1390-1400.
- Aneja, Viney P. et al. 2008. Ammonia Assessment from Agriculture: U.S. Status and Needs. *J. Environ Qual.* 37:515-520.
- Armeen, A. et al. Biofilters to treat swine facility air: Part 1. Nitrogen mass balance. *Canadian Biosystems Engineering*. Vol. 50 (2008) pp. 6.21-6.27.
- Arogo, J., Westerman, P.W., Heber, A.J., Robarge, W.P., Classen, J.J. Ammonia Emissions from Animal Feeding Operations. White Paper prepared for: National Center for Manure and Animal Waste Management, North Carolina State University
- Braam, C.R., J.M. Detelaars, and M.J. Smits. 1997. Effects of floor design and floor cleaning on ammonia emission from cubicle houses for dairy cows. *Neth. J. Agric. Sci.* 45:49-64
- Burgos, SA et al. 2010. Prediction of ammonia emission from dairy cattle manure based on milk urea nitrogen: relation of milk urea nitrogen to ammonia emissions. *J. Dairy Sci.* 93 (6): 2377-2386.
- Burke, Dennis. Dairy Waste Anaerobic Digestion Handbook. Environmental Energy Company. June 2001.
- Elliot, A.L., N.M. Marcillac, J.G. Davis, J.G. Pritchett, C.E. Stewart, and A.L. Mink, 2007. Best Management Practices (BMPs) for Ammonia Emissions Reduction from Animal Feeding Operations: a Colorado Case Study. Western Nutrient Management Conference. 2007. Vol. 7. Salt Lake City, UT.
- Flesch, T.K. et al. INVERSE-DISPERSION CALCULATION OF AMMONIA EMISSIONS FROM WISCONSIN DAIRY FARMS. *Transactions of the ASABE* Vol. 52(1): 253-265 2009 American Society of Agricultural and Biological Engineers ISSN 0001-2351.
- Frank, B., and C. Swensson. 2002. Relationship between content of crude protein in rations for dairy cows and milk yield, concentration of urea in milk and ammonia emissions. *J. Dairy Sci.* 85:1829-1838.
- Galyean, M.L. Environmental stewardship in the future: Nutrient management issues and options for beef cattle feeding operations *J Anim Sci* 2000. 79:1-9.
- Gay, S.W., et al. 2003. Odor, Total Reduced Sulfur, and Ammonia Emissions from Animal Housing Facilities and Manure Storage Units in Minnesota. *Applied Engr. in Agr.* 19(3):347-360.
- Harper, Lowry A. et al. 2009. Annual Ammonia Emissions from Dairy Production in Wisconsin. *J. Dairy Sci.* 92: 2326-2337.
- Harper, Lowry A. Chapter 15. Ammonia: Measurement Issues. *Southern Piedmont Conservation Research Unit* J. Phil Campbell, Sr., Natural Resources Conservation Center USDA –ARS.

- Harper, Lowry A. et al. Nitrogen Cycling through Swine Production Systems: Ammonia, Dinitrogen, and Nitrous Oxide Emissions. *J. Environ. Qual.* 33:1189-1201 (2004).
- Harper, Lowry A. et al. Technical Reports. Atmospheric Pollutants and Trace Gases. Ammonia Emissions from Swine Houses in the Southeastern United States. *J. Environ. Qual.* 33:449-457 (2004).
- Hartung, J., and V.R. Phillips. 1994. Control of gaseous emissions from livestock buildings and manure stores. *J. Agric. Eng. Res.* 57:173-189.
- Heber, A.J., J.-Q. Ni, and T.T. Lim. 2002. Odor flux measurements at a facultative swine lagoon stratified by surface aeration. *Appl. Engng. Ag.* 18(5): 593-602.
- Hinz, T., and S. Linke. 1998. A comprehensive experimental study of aerial pollutants in and emissions from livestock buildings. Part 2: Results. *J. Agric. Engng. Res.* 70:119-129.
- Hjorth, M. et al. Solid-liquid separation of animal slurry in theory and practice. A Review. *Agron. Sustain. Dev.* 30 (2010) 153-180.
- James, T., D. Meyer, E. Esparza, E.J. DePeters, and H. Perez-Monti. 1999. Effects of dietary nitrogen manipulation on ammonia volatilization from manure from Holstein heifers. *J. Dairy Sci.* 82:2430-2439.
- Jacobson, Larry D. et al. 2003. Air Emissions from Animal Production Buildings. ISAH, 2003 Mexico.
- Jokela, W. Ammonia Volatilization from Surface-Banded and Broadcast Application of Liquid Dairy Manure on Grass Forage. Submitted to *Journal of Environmental Quality*. Accepted August 22, 2010.
- Kroodsmma, W., J.H. Huis in't Veld, and R. Scholtens. 1993. Ammonia emission and its reduction from cubicle houses by flushing. *Livest. Prod. Sci.* 35:293-302.
- Krupa, S.V. 2003. Effects of atmospheric ammonia (NH₃) on terrestrial vegetation: a review. *Environ. Poll.* 124:179-221.
- Lefcourt A.M. and J.J. Meisinger. Effect of Adding Alum or Zeolite to Dairy Slurry on Ammonia Volatilization and Chemical Composition. *J. Dairy Sci.* 84: 1814-1821.
- Malgeryd, J. 1998. Technical measures to reduce ammonia losses after spreading of animal manure. *Nutr. Cyc. Agroeco.* 51:51-57.
- Marcillac, N.M., N.P. Hanan, T. Lee, R.F. Follett, T.L. Stanton, J.L. Collett, and D.E. Johnson. 2006. Air emissions from dairy CAFOs: Multi-scale measurements and process based modeling. p. 881-885 *In Proc. Workshop on Agricultural Air Quality: State of the Science*, Potomac, MD. 5-8 June 2006. North Carolina State University, Raleigh, NC.
- McGechan, M.B., and L. Wu. 1998. Environmental and economic implications of some slurry management options. *J. of Ag. Engin. Res.* 71:273-283.
- Meisinger, Jack et al. 2009. Ammonia Emissions Reduction: Litter Treatment, Biofilter, and Covers. Recommendations for Endorsement by the Chesapeake Bay Program Nutrient Subcommittee and its Workgroups. Mid-Atlantic Water Group at the University of Maryland.
- Meisinger, Jack and Jokela, W.E. Managing Nutrients and Pathogens from Animal Agriculture (NRAES-130). 2000. pp. 1-21.

- Merchant, J.A., J. Kline, K.J. Donham, D.S. Bundy, and C.J. Hodne. 2003. Human health effects. p.121-145. *In Iowa concentrated animal feeding operation air quality study.* University of Iowa; Iowa City, Iowa.
- Misselbrook, T.H., and J.M. Powell. 2005. Influence of bedding material on ammonia emission from cattle excreta. *J. Dairy. Sci.* 88:4304-4312.
- Misselbrook, T.H., S.K. Brookman, K.A. Smith, T. Crumby, A.G. Williams, and D.F. McCrory. 2005. Crusting of stored dairy slurry to abate ammonia emissions: Pilot-scale studies. *J. Environ Qual.* 34:411-419.
- Misselbrook, T.H. et al. Slurry Application Techniques to reduce Ammonia Emissions: Results of some UK Field-scale Experiments. *Biosystems Engineering (2002)* 81 (3), 313-321.
- Mitloehner, Frank et al. 2006. Volatile Fatty Acids, Amine, Phenol, and Alcohol Emissions from Dairy Cows and Fresh Waste. Final Report to California Air Resources Board.
- Montes, F., Hafner, S.D., Rotz, C.A. 2009. Measuring Emissions of Volatile Organic Compounds from Silage. Proceedings of the American Society of Agricultural and Biological Engineers International (ASABE). Paper No. 096184.
- Moreira, V. R. and L. D. Satter. 2006. Effect of Scraping Frequency in a Freestall Barn on Volatile Nitrogen Loss from Dairy Manure. *J. Dairy Sci.* 89:2579–2587
- Mount, George et al. 2005. Identification and Quantification of Volatile Organic Compounds from a Dairy. *Atmos. Environ.* 40: 1480-1494.
- Muck, R.E. 1981. Urease activity in bovine feces. *J. Dairy Sci.* 65:2157-2163.
- Muktar, S. Seasonal Ammonia Emissions from a Free-Stall Dairy in Central Texas *Journal of the Air & Waste Management Association.* Volume 59 May 2009. pp. 613-618.
- Mulvaney, Michael J., K.A. Cummins, C.W. Wood, B.H. Wood, & P.J. Tyler. 2008. Ammonia emissions from field-simulated cattle defecation and urination. *Journal Environmental Quality* 37(6): 2022-2027.
- National Research Council. 2002. The Scientific Basis for Estimating Air Emissions from Animal Feeding Operations: Interim Report. Ad Hoc Committee on Air Emissions from Animal Feeding Operations, Committee on Animal Nutrition, National Research Council National Academy Press, Washington D.C. ISBN: 0-309-50500-3, 122 pages, 6 x 9, (2002)
- Ndegwa, P.M., et al. 2008. A Review of Ammonia Emission Mitigation Techniques for Concentrated Animal Feeding Operations. *Biosystems Engineering* 100:453 – 469.
- Nunez, Pedro. Grazing Management, Ammonia and Nitrous Oxide Emissions: A General View. *J. Soil Sc. Plant Nutr.* 7(3) 2007 (61-99).
- Otto, D., Lawrence, J. The Wisconsin Pork Industry 2008: Patterns and Economic Importance.
- Paramasivam, S., Jayaraman, K., Wilson, T.C., Alva, A.K., Kelson, L., Jones, L.B. 2009. Ammonia Volatilization Loss from Surface Applied Livestock Manure. *Journal of Environmental Science and Health.* 44: 317-324.
- Powell, J.M., Russelle, M.P., Martin, N.P. 2010. The United States: Trends in the Dairy Industry and Their Implications for Producers and the Environment. In: Gerber, P., et al. (Ed.) *Livestock in a Changing Environment.* Volume 2. Experiences and Regional Perspectives. London, England: Island Press. p. 115-139.

- Powell, J. Mark. et al. 2010. Dairy Slurry Application Method Impacts Ammonia Emission and Nitrate Leaching in No-Till Corn Silage. *J. Environ. Qual.* 40: 1-10. In Press.
- Powell, J. Mark. et al. 2008. Season and Bedding Impacts on Ammonia Emissions from Tie-stall Dairy Barns. *J. Environ. Qual.* 37:7-15.
- Powell, J.M., Misselbrook, T.H., Holmes, B.J. 2007. Design and Calibration of Chambers for Measuring Ammonia Emissions from Tie-stall Dairy Barns. *Transactions of the ASABE.* 50(3):1045-1051.
- Powell, J. Mark. et al. 2008. Rapid Assessment of Feed and Manure Nutrient Management on Confinement Dairy Farms. *Nutr Cycl Agroecosyst.* Vol. 82, Number 2, 107-115.
- Powell, J.M., Misselbrook, T.H. 2006. Reducing in-barn ammonia emissions to conserve the fertilizer nitrogen value of dairy manure. In: *Proceedings of the 2006 Wisconsin Fertilizer, Ag lime & Pest Management Conference, January 17-19, 2006, Madison, Wisconsin.* p. 211-215.
- Powell, J. Mark. et al. 2007. Seasonal Diet Affects Ammonia Emissions from Tie-Stall Dairy Barns. *J. Dairy Sci.* 91: 857-869.
- Powell, J. Mark. et al. 2005. Manure Collection and Distribution on Wisconsin Dairy Farms. *J. Environ. Qual.* 34: 2036–2044.
- Powell, J. Mark. et al. 2009. Dairy Heifer Management Impacts Manure N Collection and Cycling Through Crops in Wisconsin, USA. *Agriculture, Ecosystems and Environment.* 131: 170-177.
- Powell, J. Mark. et al. 2006. Validation of Feed and Manure Data Collected on Wisconsin Dairy Farms. *J. Dairy Sci.* 89: 2268-2278.
- Powell, J.M., Russelle, M.P. 2009. Dairy Cattle Management Impacts Manure N Collection and Cycling Through Crops in Wisconsin, USA. *Agriculture, Ecosystems and Environment [electronic journal].* 131(2009):170-177.
- Rodhe, L., M. Pell, and S. Yamulki. 2006. Nitrous oxide, methane and ammonia emissions following slurry spreading on grassland. *Soil Use and Manag.* 22:229-237.
- Rotz, C.A. 2004. Management to Reduce Nitrogen Losses in Animal Production. *J. Anim. Sci.* 82:E119-E137.
- Rotz, C.A., and Oenema, J. 2006. Predicting Management Effects on Ammonia Emissions from Dairy and Beef Farms. *Transactions of the ASABE* Vol. 49(4):1139-1149.
- Rotz, C.A., Soder, K.J., Skinner, R.H., Dell, C.J., Kleinman, P.J., Schmidt, J.P., Bryant, R.B. 2009. Grazing can reduce the environmental impact of dairy production systems. *Forage and Grazing lands.*
- Roumeliotis T.S. and B.J. Van Heyst. Summary of Ammonia and Particulate Matter Emission Factors for Poultry Operations. 2008 *J. Appl. Poult. Res.* 17:305-314.
- Roy, B., B. Brahma, S. Ghosh, P.K. Pankaj and G. Mandal, 2011. Evaluation of milk urea concentration as useful indicator for dairy herd management: A review. *Asian J. Anim. Vet. Adv.*, 6: 1-19.
- Rumburg, B. et al. 2008. Measurement and Modeling of Atmospheric Flux of Ammonia from Dairy Milking Cow Housing. *Atmos. Environ.* 42:3364-3379.

- Rumburg, B., M. Neger, G.H. Mount, D. Yonge, J. Filipy, J. Swain, R. Kincaid, and K. Johnson. 2004. Liquid and atmospheric ammonia concentrations from a dairy lagoon during an aeration experiment. *Atmos. Environ.* 38:1523-1533.
- Sanno, J-O. Reducing Dairy Ammonia Emissions: A Swedish Case Study. *Milkproduction.com*. April
- Satter, L.D. et al. The Role of Nutrition in Reducing Nutrient Output from Ruminants. *J. Anim Sci* 2002. 80:E143-E156.
- Smits, M.C.J., H. Valk, A. Elzing, and A. Keen. 1995. Effect of protein nutrition on ammonia emission from a cubicle house for dairy-cattle. *Livestock Prod. Sci.* 44:147-156.
- Sneath, R.W., C.H. Burton, and A.G. Williams. 1992. Continuous aerobic treatment of piggery slurry for odour control scaled up to farm size unit. *J. Agric. Engineer. Res.* 53:81-92.
- Sommer, S.G., and N.J. Hutchings. 2001. Ammonia emission from field applied manure and its reduction - invited paper. *European J. Agron.* 15:1-15.
- Sun, H., Trabue, S.L., Jackson, W., Scoggin, K.D., Pan, Y., Zhao, Y., Mitloener, F. 2008. Alcohol, volatile fatty acid, phenol, and methane emissions from dairy cows and fresh manure. *Journal of Environmental Quality.* 37:615-622.
- Todd, R.W., N.A. Cole, and R.N. Clark. 2006. Reducing crude protein in beef cattle diets reduces ammonia emissions from artificial feedyard surfaces. *J. Environ. Qual.* 35:404-411.
- Tyndall, John and Joe Colletti. Mitigating swine odor with strategically designed shelterbelt systems: a review. *Agroforest Syst* (2007) 69: 45-65.
- Ullman, J.L et al. A Review of Literature Concerning Odors, Ammonia, and Dust from Broiler Production Facilities: 4. Remedial Management Practices. *Poultry Science Association, Inc.* (2004).
- Van Horn, H.H., G.L. Newton, and W.E. Kunkle. 1996. Ruminant nutrition from an environmental perspective: Factors affecting whole-farm nutrient balance. *J. Anim. Sci.* 74:3082-3102.
- Waskom, R.M., and J.G. Davis. 1999. Best management practices for manure utilization. *Colorado State University Cooperative Extension Bulletin no. 568A.* Fort Collins, CO.
- Webb, J. et al. The impact of increasing the length of the cattle grazing season on emissions of ammonia and nitrous oxide and on nitrate leaching in England and Wales. *Agriculture, Ecosystems & Environment* Volume 105, Issues 1-2, January 2005, Pages 307-321.
- White, S.L., R.E. Sheffield, S.P. Washburn, L.D. King, and J.T. Green. 2001. Spatial and time distribution of dairy cattle excreta in an intensive pasture system. *J. of Environ. Qual.* 30:2180-2187.
- Wu, Z. and L.D. Satter. Milk Production During the Complete Lactation of Dairy Cows Fed Diets Containing Different Amounts of Protein. 2000 *J. Dairy Sci* 83: 1042-1051.
- Yang, P.Y. and Z. Wang. 1999. Integrating an intermittent aerator in a swine wastewater treatment system for land-limited conditions. *Biores. Technolo.* 69:191-198.
- Ye, Z. et al. A concrete slatted floor system for separation of faeces and urine in pig houses *Biosystems Engineering* Volume 98, Issue 2, October 2007, Pages 206-214

Zhang, Z., and J. Zhu. 2003. A surface aeration system to reduce VFA, BOD, and solids in manure stored in open facilities. *Appl. Engng. Agric.* 19(6): 717-723.

Zhang, Z., and J. Zhu. 2005. Effectiveness in short-term aeration in treating swine finishing manure to reduce odour generation potential. *Ag. Eco. and Enviro.* 105:115-125.

Zhang, G., J.S. Strom, B. Li, H.B. Rom, S. Morsing, P. Dahl, and C. Wang. 2005. Emission of ammonia and other contaminant gases from naturally ventilated dairy cattle buildings. *Biosys. Engin.* 92:355-364.

Proceedings:

- Colletti, Joe et al. Vegetative Environmental Buffers to Mitigate Odor and Aerosol Pollutants Emitted from Poultry Production Sites. Workshop on Agricultural Air Quality.
- Elliott, A.L. et al. BEST MANAGEMENT PRACTICES (BMPS) FOR AMMONIA EMISSIONS REDUCTION FROM ANIMAL FEEDING OPERATIONS: A COLORADO CASE STUDY. Western Nutrient Management Conference. 2007. Vol. 7. Salt Lake City, UT. Pp. 124-129.
- Hoff, Steven J. et al. NH₃, H₂S, CO and Odor Animal Emission Data from the Six-State (APECAB) Project: Swine Deep-Pit Finishing Buildings in Iowa. Paper Number: 05-A-648—AWMA. Pp. 1-14.
- Jokela, W. and Jack Meisinger. Ammonia Emissions from Field-Applied Manure: Management for Environmental and Economic Benefits. Proc. Of the 2008 Wisconsin Fertilizer, Ag lime & Pest Management Conference, Vol. 47.
- Kohn, R. USE OF ANIMAL NUTRITION TO MANAGE NITROGEN EMISSIONS FROM ANIMAL AGRICULTURE. Second Annual Mid-Atlantic Nutrition Conference. Mar. 24-25, Timonium, MD. pp. 25-30.
- Muhlbauer, R, J. Puck² and B. Puck², R. Burns Iowa State University¹, Puck Custom Enterprises. A Review of Manure Injection to Control Odor and Ammonia Emissions during the Land Application of Manure Slurries.
- Powell, J. Mark. et al. 2005. Partnership for Abating Ammonia Emissions from Dairy Farms: Using a Logic Model to Build Consensus and Joint Work. Proceedings of the Symposium on the State of the Science of Animal Manure.
- Powell, J.M., Misselbrook, T., Broderick, G.A. 2006. Abating ammonia emissions from dairy barns through feed, herd and bedding management. In: Proceedings of Workshop on Agricultural Air Quality: State of Science, June 5-8, 2006, Raleigh, North Carolina. p. 1006-1010.
- Powell, J.M. 2007. Implications of nutrient management data collected on Wisconsin dairy farms. In: Chapman, D.F., Clark D.A., Macmillan, K.L. and Nation, D.P., editors. Meeting the Challenges for Pasture-Based Dairying. Proceedings of the Australian Dairy Science Symposium, September 18-20, 2007, University of Melbourne, Victoria, Australia. p. 593-599.

Jacobson Larry D. Aerial Pollutants Emissions from Confined Animal Buildings. Dry Sow Buildings in Minnesota. Proceedings of a Workshop on Agricultural Air Quality: State of the Science. Potomac, MD. June 5-8, 2006. pp. 775-874.

Schillinger, W., Young, D., Sharratt, B. 2006. The Undercutter Method of Summer Fallow Farming to Reduce PM10 Particulate Emissions. Proceedings of a Workshop on Agricultural Air Quality: State of the Science. Potomac, MD. June 5-8, 2006. pp. 775-874
pp. 293-300.

Tyndall, J. The Use of Vegetative Environmental Buffers for Livestock and Poultry Odor Management. Department of Natural Resource Ecology and Management, Iowa State University.

Zefei Liu et al. Effect of Litter Moisture Content on Ammonia Emissions from Broiler Operations. Workshop on Agricultural Air Quality. Pp. 859-860.

Proceedings from the 2008 National Conference on Mitigating Air Emissions from Animal Feeding Operations Exploring the advantages, limitations, and economics of mitigation technologies. Iowa State University College of Agriculture and Life Sciences University Extension. Conference Proceedings. Sponsored by: NRI Air Quality Extension & Education, U.S. Pork Center of Excellence, Iowa Farm Bureau Federation, Iowa Egg Council, Iowa Pork Industry Center, Iowa Pork Producers Association.

http://www.ag.iastate.edu/wastemgmt/Mitigation_Conference_proceedings/Conference%20Proceedings.htm

U.S. Animal Feeding Operations Air Emissions Mitigation State of Science - R. Gates
Exhaust Air Treatment Systems in Europe - E. Hartung

A Review of Ammonia Emissions Mitigation Techniques for Concentrated Animal Feeding Operations P. Ndegwa, A. Hristov, J. Arogo, and R. Sheffield

Standardized Testing and Reporting for Mitigation Technologies - D. Schmidt, C. Clanton, L. Jacobson

Standardized Testing Procedures for Assessing Ammonia and Odor Emissions from Animal Housing Systems in The Netherlands - N. Ogink, J. Mosquera, and R. Melse

Siting Animal Production Facilities and Evaluating Odor Control Options
Using the Odor Footprint Tool - R. Stowell, C. Henry, C. Powers and D. Schulte

Siting of Livestock and Poultry Facilities Using MNSET - D. Schmidt and L. Jacobson

A Receptor-Based Siting Strategy for Swine Production Systems - S. Hoff, D. Bundy, J. Harmon, and C. Johnson

The Use of Vegetative Environmental Buffers for Livestock and Poultry Odor Mitigation - J. Tyndall

Efficacy of Vegetative Environmental Buffers to Mitigate Emissions from Tunnel-Ventilated Poultry Houses - G. Malone, G. VanWicklen, and S. Collier

Vegetative Buffers for Swine Odor Mitigation-Wind Tunnel Evaluation of Air Flow Dynamics - T. Sauer, F. Haan, Jr., J. Tyndall, G. Hernandez-Ramirez, S. Trabue, R. Pfeiffer, and J. Singer

Water Requirements for Dust Control on Feedlots - J. Harner, R. Maghirang, and E. Rozate

Reducing H₂S, NH₃, PM, and Odor Emissions from Deep-pit Pig Finishing Facilities by Managing Pit Ventilation - L. Jacobson, B. Hetchler, and D. Schmidt

Effects of Waste Management Techniques to Reduce Dairy Emissions from Freestall Housing - M. Calvo, K. Stackhouse, Y. Zhao, Y. Pan, T. Armitage, and F. Mitloehner;

Dust and Ammonia Control in Poultry Production Facilities Using an Electrostatic Space Charge System - C. Ritz, B. Mitchell, B. Fairchild, M. Czarick, and J. Worley

Ozone Application for Mitigating Ammonia Emission from Poultry Manure: Field and Laboratory Evaluations - L. Wang, E. Oviedo-Rondon, J. Small, Q. Li, and Z. Liu

Atomization Treatment to Improve Air Quality in a Swine Concentrated Animal Feeding Operation (CAFO) - P. Juergens and G. Rapp

Odorgon: Overhead Spray System to Neutralize Odors - S. Opheim

Effectiveness of Litter Treatments for Reduction of Ammonia Volatilization in Broiler Production - J. Blake, J. Hess, and K. Macklin

Bioaugmentation of Treatment System for Skatole Degradation: Bioremediation Potential for Odors Reduction at Livestock Operations - N. Lovanh, J. Loughrin, and K. Sistani;

The Effects of Acidifier Applications in Reducing Emissions from Dairy Corrals - K. Stackhouse, J. McGarvey, Y. Pan, Y. Zhao, and F. Mitloehner

Use of Sodium Bisulfate to Reduce Ammonia Emissions from Poultry and Livestock Housing - T. Marsh-Johnson and B. Murphy

Using Klasp™ to Reduce Poultry Housing Ammonia Emissions - L. Reeder and V. Johnson

Microbial Additives to Reduce Ammonia Emission from Poultry Houses - D. Karunakaran

Effects of Aluminum Sulfate and Aluminum Chloride Applications to Manure on Ammonia Emission from a High-Rise Layer Barn - T. Lim, C. Wang, J. Ni, A. Heber, and L. Zhao

Reducing Ammonia Emissions from Poultry Litter with Alum - P. Moore, D. Miles, and R. Burns

Using Liquid Aluminum Sulfate to Reduce Poultry Housing Ammonia Emissions - R. Burns, P. Moore, and L. Moody

Litter Management Strategies in Relation to Ammonia Emissions from Floor-Raised Birds - E. Wheeler, K. Casey, R. Gates, H. Xin, Y. Liang, and P. Topper

Environmental Responses to Dietary Monensin in Lactating Dairy Cows - S. Hamilton and F. Mitloehner

Diet Modification to Reduce Odors, Gas Emissions and Nutrient Excretions from Swine Operations - S. Radcliffe, B. Richert, D. Sholly, K. Foster, B. Hollas, T. Lim, J. Ni, A. Heber, and A. Sutton

Effects of Dietary Manipulation on Ammonia Emissions - Carter, M. Lachmann, and J. Bundy

Dietary Manipulation to Reduce Ammonia Emission from High-Rise Layer Houses - Y. Liang, H. Xin, H. Li, R. Gates, E. Wheeler, K. Casey, B. Behrends, and D. Burnham

Dietary Manipulation to Lower Ammonia Emission from Laying-hen Manure - S. Roberts, H. Xin, H. Li, R. Burns, K. Bregendahl, and E. Hall III

Feeding a Combination of Acidogenic Materials and Cation Exchangers Reduces Manure Ammonia Emissions and Improves Laying Hen Performance - E. Hale III

Manure Ammonia Emission Reductions Achieved by Feeding DDGS to Laying Hens Housed in a Production Environment- E. Hale III

Effects of EcoCal™ on Ammonia Emission from a High-Rise Layer House - T. Lim, A. Heber, E. Hale III, J. Ni, and L. Zhao

Practical Partial Biofiltration of Swine Exhaust Ventilation Air

S. Hoff, J. Harmon, L. Chen, K. Janni, D. Schmidt, R. Nicolai, and L. Jacobson;

Biofiltration-Mitigation Odor and Gas Emissions from Animal Operations

D. Nicolai, K. Janni, and D. Schmidt

Significant Odor Reduction from a Highly Efficient Micro-ecosystem Based on Biofiltration - R. Treloar and R. Treloar

Multi-pollutant Scrubbers for Removal of Ammonia, Odor, and Particulate Matter from Animal House Exhaust Air - R. Melse, N. Ogink, and B. Bosma

Mitigation of Odor and Pathogens from CAFOs with UV/TiO₂: Exploring Cost

Effectiveness - J. Koziel, X. Yang, T. Cutler, S. Zhang, J. Zimmerman, S. Hoff, W. Jenks, H. Van Leeuwen, Y. Laor, U. Ravid, and R. Armon

Effects of Sodium Bisulfate on Alcohol, Amine, and Ammonia Emissions from Dairy

Slurry - F. Mitloehner, H. Sun, Y. Pan, Y. Zhao, W. Jackson, L. Nuckles, I. Malkina, and V. Arteaga;

Reduction of Ammonia Emission from Stored Laying-hen Manure Using Topically

Applied Additives: Zeolite, Al+Clear, Ferix-3, and PLT - H. Li, H. Xin, R. Burns, and Y. Liang

Gas Impermeable Film and Sheet for Control of Methane and Odors in

Agricultural Applications - G. Kolbasuk

A Review of Permeable Cover Options for Manure Storage - R. Burns and L. Moody

A New Geosynthetic Cover for Odor Control and Biogas Collection - A. Mills

Negative Air Pressure Cover for Preventing Odor Emission from Earthen Manure Storage

- Q. Zhang and D. Small

RAPP Technology for Control of Gas and Odor from Swine Manure Pits - J. Ni, S. Hanni,

A. Heber, W. Kosman, and G. Rapp

The Use of Anaerobic Digestion Systems to Mitigate Air Emissions from U. S. Livestock production Facilities - K. Bracmort and R. Burns

A Surface Aeration Unit for Odor Control from Liquid Swine Manure Storage Facilities

J. Zhu, C. Dong, C. Miller, L. Wang, Y. Li, and S. Mukhtar

Management of Dairy Operations to Prevent Excessive Ammonia Emissions
S. Mukhtar, A Mutlu, and S. Rahman

Characterizing Ammonia Emissions from Swine Farms in Eastern North Carolina-
Part 1. Conventional Lagoon and Spray Technology for Waste Treatment
V. Aneja, S. Arya, I. Rumsey, and C. Williams

Characterizing Ammonia Emissions from Swine Farms in Eastern North Carolina-
Part II. Potential Environmentally Superior Technologies for Waste Treatment
V. Aneja, S. Arya, I. Rumsey, and C. Williams

Effect on Residue Cover and Crop Yield of Manure Incorporation Equipment
H. Hanna, S. Mickelson, and S. Hoff

A Review of Manure Injection to Control Odor and Ammonia Emissions during the Land
Application of Manure Slurries - R. Muhlbauer, J. Puck, B. Puck, and R. Burns

Western Dairy Air Quality Symposium. Appendix E. Sponsored by Western States Dairy
Producers Trade Association. April 26-27, 2007. Palms Casino Resort. Las Vegas, NV.

Wisconsin Agricultural Stewardship Initiative. Ammonia Emissions Workshop. Co-
sponsored by USDA Dairy Forage Research Center, UW-Extension Cooperative
Extension, Wisconsin Agricultural Stewardship Initiative and Wisconsin Department
of Natural Resources. March 30, 2005.

Federal, State and Other Government Documents:

Alberta Agriculture, Food and Rural Development. Atta Atia, Karen Haugen-Kozyra and Mohamed Amrani. Ammonia and Hydrogen Sulfide from Livestock Production. 227-272.

Arizona Department of Environmental Quality. Meeting Summary – Agricultural Management Practices Technical Workgroup. December 8, 2009.

California Air Resources Board. Dairy Air Emissions. Summary of Dairy Emission Estimation Procedures. Report. Prepared by Thomas R. Card, PE and Charles E. Schmidt, PhD. May 2006.

Colorado Department of Public Health and Environment. Air Quality Compliance Guidance for Colorado Swine Producers. Regulation No. 2, Part B. January 2001.

Economic Commission for Europe. Guidance Document on Control Techniques for Preventing and Abating Emissions of Ammonia. July 16, 2007

European Commission. Integrated Pollution Prevention and Control Reference Document on Best Available Techniques for Intensive Rearing of Poultry and Pigs. July 2003.

Food and Agriculture Organization of the United Nations. Greenhouse Gas Emissions from the Dairy Sector: A life Cycle Assessment. 2010.

Focus on Energy. Wisconsin Agricultural Biogas Casebook. December 2009 Edition.

Idaho Administrative Code. 2009. Department of Environmental Quality. IDAPA 58.01.01. Rule for the Control of Air Pollution in Idaho. 760-764.

Idaho Dairy Air Emissions Analysis: Focus: Ammonia emissions Typical Dairy Management Systems in Idaho. Summary of Methodology and Findings: Technical Reference Document Final Draft. February 23, 2005.

Idaho DEQ – Scientific Basis for the Control of Ammonia from Dairy Farms Best Management Practices 7/18/06.

International Panel on Climate Change. Guidelines for National Greenhouse Gas Inventories. Chapter 10. Emissions from Livestock and Manure Management. 2006.

Iowa DNR. Animal Feeding Operations Technical Workgroup Report. On: Air Emissions Characterization, Dispersion Modeling and Best Management Practices. Prepared by: The Iowa Department of Natural Resources Animal Feeding Operations Technical Workgroup. 12/15/2004.

Minnesota Planning. Environmental Quality Board. Final Technical Work Paper for Air Quality and Odor Impacts. Prepared for the Generic Environmental Impacts Statement on Animal Agriculture. March 2001.

Minnesota Planning. Environmental Quality Board. Final Animal Agriculture Generic Environmental Impact Statement. September 14, 2002.

North Carolina Division of Air Quality. Schliesser, Steve. Hydrogen Sulfide from NC Hog Farms. February 6, 2003.

Oregon DEQ. Final Report to the Oregon Department of Environmental Quality and Department of Agriculture. Oregon Dairy Air Quality Task Force. July 1, 2008.

Oregon DEQ. Technical Support Document for Dairy Air Quality Task Force Report.

San Joaquin Valley Air Pollution Control District. Air Pollution Control Officer's *Determination of VOC Emission Factors for Dairies*. August 1, 2005.

San Joaquin Valley Air Pollution Control District. *Draft Methodology to Establish Revisions to VOC and PM10 Emissions Factors for San Joaquin Valley Dairies*.

San Joaquin Valley Air Pollution Control District. *An Assessment of Technologies for Management and Treatment of Dairy Manure in California's San Joaquin Valley*. Prepared by the San Joaquin Valley Dairy Manure Technology Feasibility Assessment Panel. December 2005.

San Joaquin Valley Air Pollution Control District. *Dairy Permitting Advisory Group. Recommendations to the San Joaquin Valley Air Pollution Control Officer Regarding Best Available Control Technology for Dairies in the San Joaquin Valley. Final Report – January 31, 2006*.

San Joaquin Valley Air Pollution Control District. Rule 4570 Permit Application Form for Implementation of VOC Best Management Practices.

San Joaquin Valley Air Pollution Control District. Compliance Assistance Bulletin. Confined Animal Facilities (CAF). September 2006.

San Joaquin Valley Air Pollution Control District. Compliance Assistance Bulletin.

San Joaquin Valley Air Pollution Control District. Air Quality Handbook for Conservation Management Practices for San Joaquin Valley. Minimizing Agricultural PM10 from Animal Feeding Operations (AFOs) Dairies and Feedlots. May 2004.

South Coast Air Quality Management District. *Task 4 – Feasibility Assessment of Emission Control Effectiveness for Potential Waste Management Practices Reducing Ammonia and VOCs*. Livestock Waste Management Practices Survey & Control Option Assessment. Final Report. Prepared by Tetra Tech, Inc. Contract # 01266. April 2004.

South Coast Air Quality Management District. Final Environmental Assessment for: Proposed Rule 1127 – Emission Reductions from Livestock Waste. August 6, 2004. SCAQMD No. 040330MK

State of Wisconsin. Manure Gas Safety – Review of Practices and Recommendations for Wisconsin Livestock Farms. November 2008.

State of Wisconsin Department of Agriculture, Trade and Consumer Protection and the Department of Natural Resources. *Final Report on Wisconsin’s Dairy and Livestock Odor and Air Emission Project*. Supported by USDA NRCS Conservation Innovation Grant NRCS 68-3A75-5-157. September 2009.

State of Wisconsin Department of Health and Human Services. Health Consultation. Investigation into Community Complaints and Manure Odors Near the AV Roth Feeder Pig Facility. Wauzeka, Crawford County, Wisconsin. September 30, 2009.

State of Wisconsin Department of Natural Resources. Wisconsin Poultry Producers’ Odor/Air Emissions Reduction Best Management Practices (BMPs). 2001.

U.S. EPA. *National Emission Inventory—Ammonia Emissions from Animal Husbandry*, January 30, 2004.

U.S. EPA. *National Emission Inventory—Ammonia Emissions from Animal Agricultural Operations – Revised Draft Report*. April 22, 2005.

U.S. EPA. *Dairies and Environmental Stewardship*. Office of Enforcement and Compliance Assurance. EPA 305-F-03-003. April 2003.

U.S. EPA. *Emissions from Animal Feeding Operations*. Draft. Office of Air Quality Planning and Standards. August 15, 2001. EPA Contract No. 68-D6-0011. Task Order 71.

U.S. EPA. *Risk Assessment Evaluation for Concentrated Animal Feeding Operations*. Office of Research and Development. National Risk Management Research Laboratory. Cincinnati, OH. EPA/600/R-04/042. May 2004.

U.S. EPA. *Ammonia Emissions from Dairy Farms: Development of a Farm Model and Estimation of Emissions from the United States* Robert W. Pinder Department of Engineering and Public Policy and Natalie J. Anderson, Ross Strader, Cliff I. Davidson,

and Peter J. Adams Department of Civil and Environmental Engineering Carnegie Mellon University. pp 1-15.

U.S. EPA. *Swine Production and Environmental Stewardship*. Office of Enforcement and Compliance Assurance. EPA 305-F-03-001. April 2003.

U.S. EPA. Harris, D. Bruce et al. *Ammonia Emission Factors from Swine Finishing Operations*. Office of Research and Development.

U.S. EPA *Non-Water Quality Impact Estimates for Animal Feeding Operations*. Engineering and Analysis Division. Office of Water. December 2002.

U.S. EPA. Implementation Guidance on CAFO Regulations – CAFOs That Discharge or Are Proposing to Discharge. Appendix B - *Animal Sectors Descriptions*.

U.S. EPA. 40 CFR 98, subpart JJ. Manure Management Systems. Final Rule – Mandatory Reporting of Greenhouse Gases. EPA-430-F-09-026R. November 2009.

U.S. EPA. Technical Support Document for Manure Management Systems: Proposed Rule for Mandatory Reporting of Greenhouse Gases. February 4, 2009.

USDA. Dr. Alan Rotz. Pasture Systems and Watershed Management Research Unit - Fact Sheet. The Dairy Greenhouse Gas Model – A Tool for Estimating the Greenhouse Gas Emissions and Carbon Footprint of Dairy Production Systems.

USDA. Economic Research Service. *Changes in Manure Management in the Hog Sector:1998-2004*. March 2009.

USDA. Economic Research Service. *Manure Use for Fertilizer and for Energy*; Report to Congress. June 2009.

USDA. National Agricultural Statistics Service. 2007 Census of Agriculture. Wisconsin State and County Data. Vol.1 Geographic Area Series. Part 49. AC-07-A-49.

USDA. National Agricultural Statistics Service – Wisconsin Field Office. Cattle & Milk Review. March 2010.

USDA. National Agricultural Statistics Service. Farms, Land in Farms, and Livestock Operations 2008 Summary. February 2009.

USDA. National Agricultural Statistics Service. 2008 Organic Production Survey – Wisconsin.

USDA. National Agricultural Statistics Service. 2008 State Agriculture Overview – Wisconsin.

USDA. National Agricultural Statistics Service. Wisconsin – Farm Numbers. February 16, 2010.

USDA. National Agricultural Statistics Service. 2010 Dairy Producer Survey. Cooperating with Wisconsin Department of Agriculture, Trade and Consumer Protection. Wisconsin Department of Natural Resources. March 1999. Nitrate in Groundwater – A Continuing Issue for Wisconsin Citizens by The Nutrient Management Subcommittee of the Nonpoint Source Pollution Abatement Program Redesign. Groundwater Wisconsin’s buried Treasure.

USDA. Natural Resources Conservation Service. UW Extension. Wisconsin DNR and Wisconsin DATCP. Manure Management Choices for Wisconsin Dairy & Beef Cattle Operations. UWEX: GWQ024.

USDA. Research Project: Improving Nutrient Digestibility to Enhance Forage Utilization in Lactating Dairy Cow Feeding Systems. Project Number: 3655-31000-021-00

UW Extension. A3392. Guidelines for Applying Manure to Cropland and Pastures in Wisconsin. R-8-95-2M-E.

UW Extension. A3769. Recommended Methods of Manure Analysis.

UW Extension. A2809. Nutrient Application Guidelines for Field, Vegetable and Fruit Crops in Wisconsin.

Food and Agriculture Organization of the United Nations. Proper Manure Application to Land.

<http://www.fao.org/ag/againfo/programmes/en/lead/toolbox/Tech/31ProMan.htm>

UNECE Framework for Good Agricultural Practice for Reducing Ammonia. EB.AIR/WG.5/2001/7.

Natural Resource Conservation Service (NRCS) Documents:

NRCS Conservation Practice Standard – Waste Storage Facility. Code 313, June 2009.

NRCS Conservation Practice Standard – Composting Facility. Code 317, September 2003.

NRCS Conservation Practice Standard – Anaerobic Digester. Code 366, September 2009.

NRCS Conservation Practice Standard – Waste Facility Cover. Code 367, September 2003.

NRCS Conservation Practice Standard – Air Filtration and Scrubbing. Code 371, April 2010.

NRCS Conservation Practice Standard – Windbreak/Shelterbelt Establishment. Code 380, June 2002.

NRCS Conservation Practice Standard – Nutrient Management. Code 590, August 2006.

NRCS Conservation Practice Standard – Amendments for Treatment of Agricultural Waste. Code 591, May 2005.

NRCS Conservation Practice Standard – Feed Management. Code 592, September 2003.

NRCS Conservation Practice Standard – Waste Treatment. Code 629, May 2005.

NRCS Conservation Practice Standard – Solid/Liquid Wastes Separation Facility. Code 632, May 2005.

NRCS Conservation Practice Standard – Waste Utilization. Code 633, October 2003.

NRCS Conservation Practice Standard – Waste Transfer. Code 634, November 2008.

NRCS Conservation Practice Standard – Windbreak/Shelterbelt Renovation. Code 650, July 2010.

NRCS Conservation Practice Standard – Profitable Grazing-Based Dairy Systems. Technical Note No. 1. May 2007.

NRCS Conservation Practice Standard – Wisconsin Conservation Planning Technical Note 1. Nutrient Management. November, 2008.

NRCS Conservation Practice Standard - Feed and Animal Management for Beef Cattle. Nutrient Management Technical Note No. 2, October 2003.

NRCS Conservation Practice Standard – Feed and Animal Management for Swine (Growing and Finishing Pigs) Nutrient Management Technical Note No. 3, October 2003.

NRCS Conservation Practice Standard – Feed and Animal Management for Poultry. Nutrient Management Technical Note No. 4, October 2003.

NRCS Conservation Practice Standard - Feed and Animal Management for Dairy Cattle. Nutrient Management Technical Note No. 5, October 2003.

NRCS National Range and Pasture Handbook. December 2003.

NRCS Fact Sheet – Air Quality and Atmospheric Change – Air Quality and Livestock Operations. March 2008.

NRCS Fact Sheet – Air Quality and Atmospheric Change – Ozone Precursors and Animal Operations. March 2008.

NRCS Fact Sheet – Air Quality and Atmospheric Change – Greenhouse Gases and Animal Operations. March 2008.

NRCS Fact Sheet – Air Quality and Atmospheric Change – Particulate Matter and Animal Operations. March 2008.

NRCS Fact Sheet – Air Quality and Atmospheric Change – Odors and Animal Operations. March 2008.

USDA. Soil Conservation Service [NRCS]. Profitable Pastures. A guide to grass, grazing and good management. October, 2003.

USDA. Soil Conservation Service [NRCS]. Agricultural Waste Management Field Handbook. Chapter 9 Agricultural Waste Management Systems April 1992, Chapter 12 Waste Management Equipment, October 1997.

USDA Economic Research Service. Manure Use for Fertilizer and for Energy – Report to Congress. June 2009.

USDA. National Agricultural Statistics Service. 2007 Census of Agriculture. Wisconsin – State and County Data. Volume 1 – Geographic Area Series – Part 49. AC-07-A-49.

USDA. National Agricultural Statistics Service. 2010 Dairy Producer Survey.

Interpreting Milk Urea Nitrogen (MUN) Values. Mike Hutjens (University of Illinois – Urbana) and Larry E. Chase (Extension Dairy Nutritionist Cornell University, Ithaca NY). Funded by USDA and NRCS. June 20, 2007.

Whole Farm Nutrient Management – A Dairy Example. Joe Harrison and Rebecca White Washington State University. Funded by USDA and NRCS. May, 30, 2007.

Understanding Nitrogen Utilization in Dairy Cattle. L.E. Chase. Cornell University. Funded by USDA and NRCS. April 12, 2007.

Use of the Swine Feed Management Plan Checklist in Feed Management Plan Development. B. Richert, A. Sutton J. H. Harrison, and R. A. White, Purdue University and Washington State University. September 3, 2008.

Diet and Feed Management Practices affect Air Quality from Poultry and Swine Operations by Todd J. Applegate, Brian Richert, and Alan Sutton - Purdue University Wendy Powers, Michigan State University Roselina Angel – University of Maryland, College Park. April 3, 2008.

Feed Management within the Comprehensive Nutrient Management Planning Process. L.B. Moody and R.T. Burns. Iowa State University. Funded by USDA and NRCS. September 1, 2007.

An Introduction to Natural Resources Conservation Service (NRCS) Feed Management Practice Standard 592. J. H. Harrison, Washington State University, R. A. White, Washington State University A. Sutton and Todd Applegate, Purdue University. Galen Erickson, University of Nebraska. R. Burns, Iowa State University. Funded by USDA and NRCS. April 12, 2007

Alternative Waste Management Technologies Summary of Available Resources. Hannawald, James E. for Natural Resources Conservation Service. October 1999.

University Extension Documents:

Alabama Cooperative Extension System. *The Value And Use Of Poultry Manures As Fertilizer*. ANR-244, Revised Nov, 1995. By Charles C. Mitchell, and James Donald. Auburn University.

Alberta Agriculture and Rural Development Division. *Ammonia Volatilization from Manure Application*. By Atta Atia, PhD., Livestock Air Quality Specialist, Agriculture Stewardship Division, Alberta Agriculture and Rural Development.

Colorado State University. *Ammonia Best Management Practices (BMPs) for Livestock Operations. Management Solutions for a More Sustainable Future in Agriculture*. Web Page. <http://ammoniabmp.colostate.edu/index.html>

Cornell University. Dairy Freestall Barn Design – A Northeast Perspective. Gooch, Curt, P.E. November 2008 for Ninth Annual Fall Dairy Conference.

Cornell University. Climate Change and Agriculture: Promoting Practical and Profitable Responses. Production and Mitigation of Greenhouse Gases in Agriculture.

Iowa State University. John Tyndall. *The Use of Vegetative Environmental Buffers for Livestock and Poultry Odor Management. Technology Summary*. Mitigating Air Emissions from Animal Feeding Operations Conference at Iowa State University.

Iowa State University. Chapter 2.0 Best Management Practices. Pp 7-19.

Iowa State University. Chapter 10 Emission Control Systems. Jeffrey Lorimor, Steven Hoff and Patrick O'Shaughnessy. Pp 202-212.

Iowa State University – Air Management Practices Assessment Tool.
<http://www.extension.iastate.edu/airquality/practices/homepage.html>

Iowa State University – University Extension. *Practices to Reduce Ammonia Emissions from Livestock Operations*. PM 1971a July 2004.

Iowa State University – University Extension. Xin, Burns & Li. Ammonia (NH₃) and Hydrogen Sulfide (H₂S) Emission Rates for Poultry Operations. January 23, 2009. pp. 1-3.

Michigan Department of Environmental Quality Toxics Steering Group. *Concentrated Animal Feeding Operations (CAFOs) Chemicals Associated with Air Emissions*. May 10, 2006.

- Midwest Plan Service. Agricultural Engineers Digest. Greenhouse Barns for Dairy Housing. AED 40, October 1996, Rev. June 1997.
- North Carolina State University. Viney P. Aneja, J.P. Chauhan, and John Walker. Characterization of Atmospheric Emissions from Swine Waste Storage and Treatment Lagoons. Report No. 329 June 2000.
- North Carolina State University. Keener H.M. and F.C. Michel Jr. PREDICTING NH₃ EMISSIONS FROM MANURE N FOR CAGED LAYER FACILITIES. A MODIFIED MASS BALANCE APPROACH. Pp. 1 -6.
- Nova Scotia Agricultural College. *Fact Sheet. Ammonia Management from Manure Storage & Spreading.* pp. 1-6.
- Ohio. *Guidelines for Livestock Operations.* Pp. 1-20.
- Oregon State University Extension Service. *Ammonia Control Best Management Practices.* Troy Downing and Mike Gamroth. EM 8982-E. August 2009.
- Pennsylvania State University. College of Agricultural Sciences. *Dairy Digest*, February 2009.
- Purdue University. Cooperative Extension Service. *Dairy Manure Management Planning.* ID-208-W. Developed by Purdue University Cooperative Extension Service and Natural Resources Conservation Service.
- Purdue University. Scott Radcliffe, Brian Richert, Danielle Sholly, Ken Foster, Brandon Hollas, Teng Lim, Jiqin Ni, Al Heber, Alan Sutton; *Purdue University Research Summary: Diet Modification to Reduce Odors, Gas Emissions and Nutrient Excretions from Swine Operations.*
- Texas A & M University. Carey, John B. Mitigation Strategies for Ammonia Management.
- University of Delaware. George Malone. *Efficacy of Vegetative Environmental Buffers to Mitigate Emissions from Tunnel-ventilated Poultry Houses. Technology Summary.* Mitigating Air Emissions from Animal Feeding Operations Conference at Iowa State University.
- University of Guelph – Ridgetown College. Marcy Ford and Ron Fleming. *Mechanical Solid-Liquid Separation of Livestock Manure Literature Review.* September 2002.

University of Kentucky – College of Agriculture. *Using Covers to Minimize Odor and Gas Emissions from Manure Storages*. Jose R. Bicudo, D. Schmidt, and Larry Jacobson. AEN-84. Issued 2-2004.

University of Minnesota - Extension. Russelle, M.P., Blanchet, K., Randall, G., Everett, L. 2009. *Nitrogen Availability from Compost Dairy Barn Manure*. University of Minnesota Extension Fact Sheet. 2 p.

University of Minnesota - Extension. *Biosystems and Agricultural Engineering Update*. Schmidt, David. Kevin Janni, and Rich Nicolai. Biofilter Design Information. BAEU-18. Revised March 2004.

University of Minnesota - Extension. *OFFSET. Odor From Feedlots Setback Estimation Tool*. Larry Jacobson, David Schmidt and Susan Wood.
<http://www.extension.umn.edu/distribution/livestocksystems/DI7680.html>

University of Minnesota. *Standardized Testing and Reporting for Mitigation Technologies*. D.R. Schmidt, C.J. Clanton, L.D. Jacobson.

Biofilters for Odor Control at Swine Facilities. Rich Nicolai, David Schmidt and Kevin Janni. Last updated April 26, 2010.

University of Nebraska – Lincoln. Biological Systems Engineering. Rick Stowell. *Manure Matters (Newsletter)* Vol. 7, Number 8. 2001.

UW-Madison. Marketing and Policy Briefing Paper, Department of Agricultural and Applied Economics. Ed Jesse. *Growth and Transition in Wisconsin Dairying*. Paper #96. November 2008.

UW-Madison. College of Agricultural and Life Sciences. *Applying Manure to Alfalfa. Pros, Cons and Recommendations for Three Application Strategies*. K.A. Kelling and M.A. Schmitt, December 2003.

UW-Madison. Jennifer Taylor - Center for Integrated Agricultural Systems and Jeremy Foltz – Program on Agricultural Technology Studies. *Grazing in the dairy state – Pasture use in the Wisconsin dairy industry, 1993-2003*.

UW-Madison. Center for Integrated Agricultural Systems. *The Wisconsin Beef Cattle Industry: A snapshot*. February 2008.

UW-Madison. Program on Agricultural Technology Studies. Douglas Jackson-Smith and Bradford Barham. *A Profile of Manure Management on Wisconsin Livestock Farms*. 1996.

- UW-Madison. Brad Barham. Program on Agricultural Technology Studies. *Structural Change in WI Dairy 1987-2007: Divergence in Size and System*. Fact Sheet No. 25, October 2007.
- UW Extension. The Center for Dairy Profitability. Wisconsin Dairy Data – Fact Sheet Series. *Preliminary Benchmarks – Dairy Cost of Production, 2007*. 2008-03. May 2008.
- UW Extension. Grass Clippings. *Pasture Research You Can Use*. February 2009. Vol. 4, Number 1. UW-Madison Center for Integrated Agricultural Systems and College of Agricultural and Life Sciences.
- UW Extension. Management of Wisconsin Soils. Fifth Edition. A3588 R-1002005-1.5M. 2005.
- UW Extension. Discovery Farms. Understanding Headland Stacked Poultry Manure – 1. Characterization of Poultry Manure. February 2009.
- UW Extension. Livestock Team – Raising Animals/Enriching Rural Life. Guide to Raising Healthy Pigs. 2009.
- UW Extension. The Ins and Outs of Outwintering. Laura Paine, Columbia County Crops and Soils Agent, and Ed Brick. November 2000.
- UW Extension. Grass-based dairy products: challenges and opportunities. Laura Paine, Columbia County Crops and Soils Agent. August 2009.
- UW Extension. Pasture for Profit: A guide to rotational grazing. (A3529) 2002.
- University of Minnesota Extension. *Siting of Livestock and Poultry Facilities Using MNSET*. D. Schmidt and L. Jacobson.
- University of Minnesota Extension. Jacobson, Larry D. *Air Quality in Animal Structures*.
- University of Saskatchewan. Prairie Swine Center. Payeur, Michel et al. Controlling Odour and Dust Emissions from Swine Barns.
- University of Wisconsin - Extension. Discovery Farms Program. Pioneering Discoveries. *Real Working Farms – Real World Solutions*. Vol. 2, Issue 3. A newsletter from UW Discovery Farms and UW-Platteville Pioneer Farm Fall 2010.
- Virginia Tech. Department of Biological Systems Engineering. Gay, S.W. Ammonia Emissions from Animal Housing Facilities.

The Cooperative Extension System. University of Wisconsin - Extension. *Ammonia, The Air-Water Interface. Mitigating Ammonia Emissions*. Dr. Pius Ndegwa. Washington State University. June 27, 2010.

The Cooperative Extension System. University of Wisconsin - Extension. Lesson 40. Emission from Animal Production Systems. By Larry Jacobson, University of Minnesota; Jeff Lorimor, Iowa State University; Jose Bicudo, University of Kentucky; and David Schmidt, University of Minnesota. Adapted, with permission, from the proceedings of *Livestock and Poultry Odor Workshop I: Emissions, Measurement, Control and Regulation*, by K. Janni, L.D. Jacobson, J.R. Bicudo, D.R. Schmidt, H. Guo, and R. Koehler, University of Minnesota, St. Paul, copyright 2000.

Downing, Troy and Mike Gamroth. **Ammonia Control Best Management Practices**. EM 8982-E • Oregon State University. August 2009.

Reports:

The Scientific Basis for Estimating Air Emissions from Animal Feeding Operations: Interim Report. Ad Hoc Committee on Air Emissions from Animal Feeding Operations, Committee on Animal Nutrition, National Research Council. 2002.

CRS Report for Congress. Air Quality Issues and Animal Agriculture: A Primer. Updated September 30, 2008. Claudia Copeland. Specialist in Resources and Environmental Policy Resources, Science and Industry Division.

Presentations:

Coburn, Jeff and Marion Deerhake. Growth-Stage Specific Ammonia Emission Factors for Swine CAFOs. RTI International.

Downing, Troy. Oregon State University. Air Emissions – BMPs.

Gill Sheraz. San Joaquin Valley Air Pollution Control District. Update on Dairy Air Quality Regulations. June 2, 2008.

Heber, Al. National Air Emissions Monitoring Study. State CAFO Programs. October 21, 2008.

Hristov, Alexander. Targeted Feeding Strategies to Reduce Nitrogen Losses and Ammonia Emissions from Dairy Cows. Department of Dairy and Animal Science. Pennsylvania State University. Livestock and Poultry Environmental Learning Center Webcast Series. January 16, 2009.

Jacobson, Larry. *Air Quality Concerns, Factors that determine Setbacks Distances*. Presented at Feed Management Training and Workshop. August 18, 2005. Manitowoc Co. Office Complex, Manitowoc, WI.

Koelsch Richard K., Bryan Woodbury, David Stenberg, Daniel Miller, and Dennis Schulte. Biological Systems Engineering. Conference Presentations and White Papers: Biological Systems Engineering. University of Nebraska – Lincoln. 2002.

Lande, Gregg. Oregon Department of Environmental Quality - Air Quality Planning. *Air Quality Basics*. January 23, 2008.

Lester, Julia. Ammonia: A Particulate Matter Precursor. ENVIRON International. Agricultural Air Quality Task Force. May 8, 2007.

Meisinger, John and Heather Hutchinson. Ammonia Emissions from Land Applications of Manures. <http://jefferson.ext.wvu.edu/r/download/50657>

Mitloehner, Frank. GHG Emissions from Livestock and Housing Systems. Air Quality Education in Animal Agriculture Webcast Series. Presented through the Livestock and Poultry Environmental Learning Center. May 15, 2009.

Powell, J. Mark. Ammonia Emissions from Dairy Cattle: What we know, what can be done. U.S. Dairy Forage Research Center. Madison, WI.

Rumburg, Brian et al. Measurements and Modeling Atmospheric Ammonia in Washington State. Oregon Dairy Air Task Force April 22, 2008. Laboratory for

Atmospheric Research, Department of Civil & Environmental Engineering,
Washington State University, Pullman, Washington.

Stocum, Jeffrey. Oregon Department of Environmental Quality. Dairy Task Force.
Emissions Inventory. January 23, 2008.

Turkett, James W. 2008 National CAFO Roundtable (ASIPCA) Indianapolis, IN. Sr. Analyst
U.S. Government Accountability Office. October 17, 2008.

Warner, Dave. California CAFO Update. For the STAPPA/ALAPCO Enforcement and
Compliance Workshop. June 16, 2005.

Other Documents:

Agricultural Engineers Digest. AED 42. Yuanhui Zhang et al. Sprinkling Oil to Reduce Dust, Gases and Odor in Swine Buildings. MidWest Plan Service. August 1997.

Alliant Energy. Anaerobic Digesters and Methane Production in the agricultural sector of states served by Alliant Energy. January 2005.

Environmental Aspects of Biogas Technology. Barbara Klingler, German Biogas Association. <http://homepage2.nifty.com/biogas/cnt/refdoc/whrefdoc/d7env.pdf>

The Manager. Nine tips to manage N better by Karl Czymmek. Northeast Dairy Business. Pro-Dairy. P. 34. April 2005.

Managing Livestock Manures. ADAS Brian Chambers, Nick Nicholason and Ken Smith. Institute of Grassland and Environmental Research. Brian Pain Silsoe Research Institute Trevor Cumby and Ian Scotford. 2001.

National Pork Producers Council. CERCLA-EPCRA Fact Sheet. January 14, 2009.